

# OptaNODE<sup>®</sup>

## Advanced Transformer Infrastructure (ATI)<sup>™</sup> Enabling Smart Grid for Electric Cooperatives

As the electric utility industry continues to experience dramatic changes, new developments make planning, operations, and management more challenging. This is particularly true for electric distribution cooperatives because they operate the dynamic distribution grid edges of the electric infrastructure.

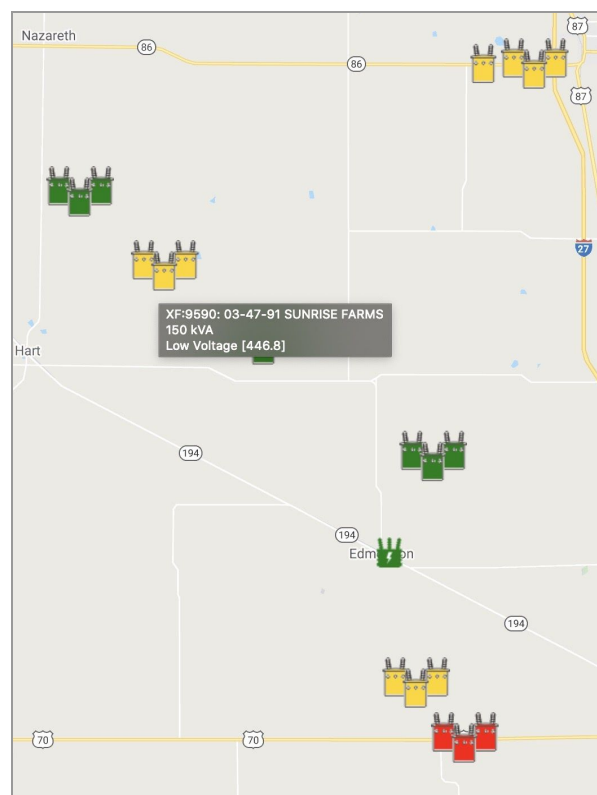
New smart grid technologies are required to ensure safe, reliable, and resilient electric service.

**GRID20/20's OptaNODE ATI Solution** delivers a series of improved grid operations, planning and management capabilities; revolutionizing the industry's best practices for effective grid monitoring.



### Use Cases

Electric distribution cooperatives are already using the **OptaNODE ATI Solution** to tackle their everyday Distribution Grid challenges, as expressed in the following testimonials.

**Electric Cooperative Testimonial 1:** "With one look at the **OptaNODE map** in the morning, we can see any issues that may be presenting problems due to the **color-coding alert** levels of our transformers. One morning, the map showed all "red" transformers in one area (low-voltage alert). Upon reviewing the data, it appeared that at 11:00 pm our voltage had dipped to about 50% of nominal on every transformer. We checked our delivery point equipment, and found that our power supplier had dipped our voltage at that time. After this happened a second time in a week, we could present them with evidence of the actual date/time and voltage dips that we were experiencing from that delivery point – sort of irrefutable evidence that they had an issue!" (Problem revealed and empirically validated by GRID20/20's ATI solution)

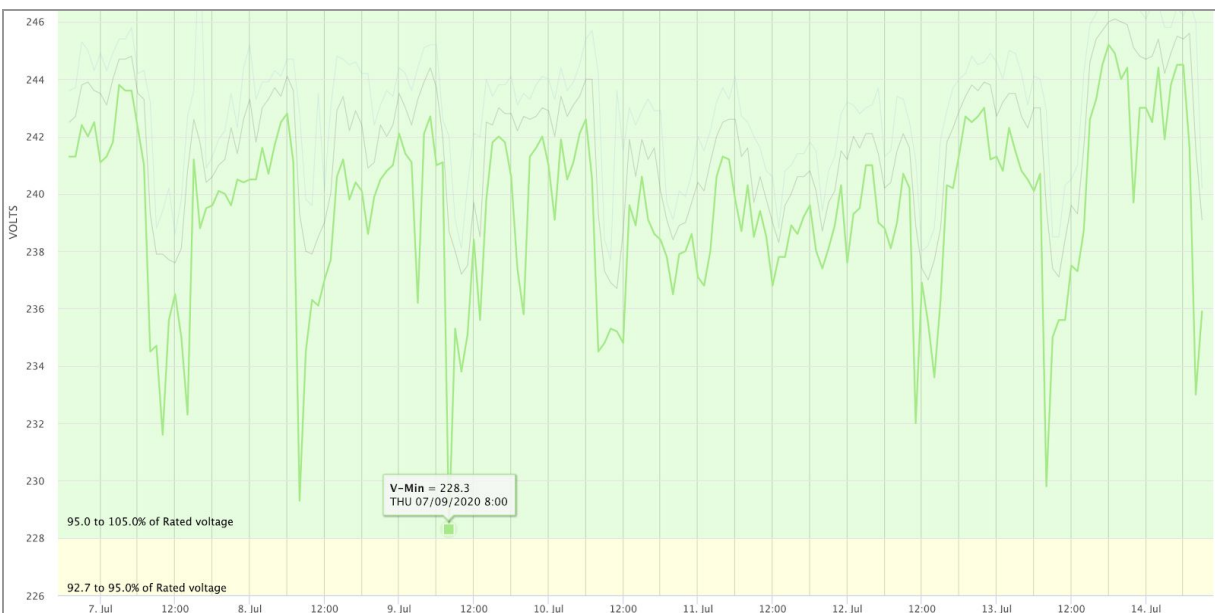


**Electric Cooperative Testimonial 2:** “We are using GRID20/20 **OptaNODEs** at key points around our system that we want to monitor – focusing at our irrigation loads in the summer months, and at our cotton gin’s in the winter months. The **email alerting** feature tells us if voltage is dipping below tariff levels, allowing us to investigate and fix the issue (upstream regulator problem, transformer problem, etc.) before the member’s service is interrupted (interrupting a running cotton gin is not a pretty scenario!)”

Transformer	Point	State	Value
9593:14-67-21 ESTES FARMS 	Current	High Current on $\Phi$ A	23.3 Amps
9593:14-67-21 ESTES FARMS 	Current	High Current on $\Phi$ C	11.6 Amps

OptaNODE System Alerts

**Electric Cooperative Testimonial 3:** “The GRID20/20 **OptaNODEs** allowed us to help troubleshoot a members’ generator issue at a cell tower. They called in to tell us that we were giving them “bad” voltage, which made their generator kick on multiple times during the day. Within a half-hour, we had an OptaNODE intra-grid sensor installed and collecting data, which was subsequently shared with the member. It was obvious our voltage was in the proper range, and was very stable. After they investigated, it turns out there were some faulty sensors in their equipment which were causing the issue.” (Customer complaint immediately addressed and satisfactorily resolved via GRID20/20’s ATI solution.)



OptaNODE Voltage Profile

## Industry-wide Successes

In addition to electric cooperative Testimonials, a growing list of industry-wide value propositions is accumulating. Investor Owned Utilities, Municipally Owned Utilities, and Cooperative Utilities are collectively using **Advanced Transformer Infrastructure (ATI)** for varied purposes and needs.

Leveraging **ATI's** unique, reliable, timely, accurate, granular intra-grid data is powerful. The following list reveals unparalleled versatility provided by this pioneering, game-changing, cost-effective technology:



- Reliability Improvement
- Provide Outage Notifications to Accelerate Restoration
- Reveal Unplanned Loading/Overloading (i.e., Forward and Reverse)
- Reveal Unplanned Grid-Edge Demand
- Proactively Identify Failing Assets
- Reveal DER-Induced Voltage Fluctuations
- Reveal & Document Reverse Energy Entering the Grid
- Facilitate Conservation Voltage Reduction
- Facilitate Safe EV Charging Station & DER Adoption
- Identify Power Theft, Metering Inaccuracies & Bad Multipliers
- Identify Improper Tap Settings
- Identify Harmful Phase Imbalances
- Identify Energy Inefficiencies
- Assist with Battery Storage Planning
- Reveal GIS Mapping Errors
- Provide Automated Alerts = “Hands-Free REMOTE Grid Monitoring”
- Support API Calls = Integrate with Existing Operating Systems
- Facilitate Clean Energy Adoption Mandates (i.e., Reduce GHG Emissions)
- Provide Asset Fire/Wildfire Mitigation Features
- Reduce Damaging Liability Risk for Operators



### GRID20/20, Inc.

#### Corporate

7405 Whitepine Road  
Richmond, VA 23237  
USA

#### Engineering

245 Riviera Drive, Unit 6  
Markham, ON L3R 0H6  
Canada

#### Contact us

##### Phone:

+1-804-918-1982

[www.grid2020.com](http://www.grid2020.com)

##### E-mail:

General:

[info@grid2020.com](mailto:info@grid2020.com)

Sales:

[sales@grid2020.com](mailto:sales@grid2020.com)

Support:

[support@grid2020.com](mailto:support@grid2020.com)