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# How to Achieve a Sustainability Breakthrough by Increasing Data Resolution

NEXTera 360™

## Introduction

Achieving sustainability is this generation's moonshot. Companies all over the world are pursuing net-zero greenhouse gas emissions or similarly ambitious sustainability goals, even when in many cases the technologies and means needed to get there don't yet exist. Ambitious goals mean the journey to sustainability will require a breakthrough. From Galileo's use of the telescope to understand the mechanics of the solar system onward to the use of computers in sequencing the human genome, major breakthroughs have always required increased resolution.

Better data is this generation's greatest asset for breakthroughs in sustainable operations. Enhancing data resolution brings useful insights and actionable information to the forefront.

This white paper from Endeavor Business Media presented in partnership with NextEra Analytics, a subsidiary of NextEra Energy Resources, LLC, explores how companies can increase the resolution of data harvested from their operations to achieve sustainability breakthroughs. Read the white paper to learn:

- Challenges companies face on the journey to sustainable operations and how data resolution can help
- A roadmap to improve data resolution for an operation's energy use
- Steps to turn increased data resolution into sustainable energy gains
- Case studies highlighting data-enabled energy optimization in action

## Sustainability Requires Measurement Most Operations Aren't Designed to Collect

When an organization commits to a set of sustainability goals, it also commits to tracking data and improving performance on a host of measures it may have never paid close attention to in the past. For example, a typical industrial operation will have sophisticated data collection and analysis related to its core process — making a chemical or steel — but very rough data related to matters such as energy use that are critical to improving sustainability goals.

Without visibility into the detailed energy use of equipment or the performance of assets, organizations miss opportunities to improve operational efficiency, save money and improve sustainability goals.

Sustainability goals also often mean organizations must measure and track Scope 1, Scope 2 and even Scope 3 greenhouse gas (GHG) emissions for the first time. After emissions-reduction goals are set, many leaders find themselves in a scramble to understand where their organization's emissions are today and how they can reduce them to where they need to be over time. The fact that sustainability goals such as GHG emissions reductions are increasingly being tied to executive and employee compensation only increases the urgency.

Investing in data resolution related to energy management gives organizations the ability to take the most effective actions to advance

sustainability and other business goals. Better data resolution can help organizations:

- Identify and assess possible actions to achieve energy and sustainability goals through forecasting and modeling
- Track the effectiveness of actions taken
- Understand if they are making adequate progress to hit sustainability goals by required dates
- Optimize operations to increase revenue, reduce costs and reduce GHG emissions

## How to Achieve Data Resolution for Sustainable Operations and Energy Management

With clean, affordable, and reliable as the triple goals of the same energy management system, the old paradigms for energy delivery and use must be reimagined. The entire system must shift, down to how individual organizations manage and optimize their operations and energy use.

In the case of electricity demand, no longer is power from the grid the only answer. Organizations must consider building management and energy efficiency, distributed generation alternatives such as solar power, demand response and even flexible load management leveraging artificial intelligence-enabled digital technologies. When effective solutions are deployed to make these energy-use alternatives possible, organizations gain incredible insights that can lead to improved equipment performance as well as operational improvements to minimize the cost of energy used and GHG emissions from that energy.

This more complex, digital system produces reams of data, which must be harnessed for the new system to be smarter and achieve its full potential for improving sustainability goals. Organizations should consider developing a number of new data collection and analysis capabilities to wield this more complex system for sustainable operations and energy use, including:

- **Integrated resource design** to analyze and develop sustainable energy and decarbonization pathways
- **Asset performance monitoring** to track, predict and optimize individual asset performance as well as improve preventive maintenance
- **Energy management** to optimize energy resource performance, such as battery energy storage system (BESS) charging and discharging, or participate in revenue-generating demand response programs
- **Meter analytics** to track water and electric meter data for actionable insights. For utilities, grid analytics can help detect outages, improve reliability and reduce operating and maintenance costs

These capabilities can be implemented for almost any operation with a combination of proven, effective software and hardware. Leading energy management and optimization solutions produce actionable analytics that improve an organization's ability to make sustainable energy plans and execute those plans in the most cost-effective manner.

## Avoid IT Pitfalls on the Path to Higher Resolution

Given the progress of the digital revolution, few organizations doubt the potential of data to improve operations. What is more in question is their ability to tap that potential without long, burdensome, costly IT projects. Most organizations have limited IT budgets, with most of that funding allocated to improve the core of what a business does or makes best. As such, IT projects focused on secondary matters like energy management and optimization need to be simple and affordable.

With the right approach and the right partners, organizations can avoid unwanted IT pitfalls and capture significant core business benefits through an appropriately sized investment in sustainable energy management.

The first step in this approach is for IT departments to remain focused on enabling the specific outcomes needed to achieve business goals. That means avoiding the temptation for the project to get weighed down with technical and systems issues that do not advance the desired outcome. A "just what the business needs" focus is a proven approach to make IT projects more efficient and successful.

Second, IT teams should choose software and hardware solutions that are designed to save cost and time. Many solutions exist that can increase data resolution and identify opportunities to optimize energy usage. However, those third-party solutions are often cumbersome, costly, not user-friendly and take a long time to implement.

## 5 Steps to Convert Data Resolution against Sustainable Energy Goals

There comes a point after every big IT project is complete when the question is asked: Now what?

Increased data resolution doesn't equal improved performance against sustainability goals. It is a necessary precursor. To attain the improved performance organizations desire requires action. To ensure your organization realizes the full potential of increased data resolution, there are five key action steps it should take to convert insights into optimized sustainable operations and energy management.

1. **Create KPIs and action items.** Increased data resolution provides insights on how specific equipment is operating, how it could or should be performing better, when equipment needs maintenance or to be replaced, and much more. To make these insights easy to understand, organizations should use their improved data resolution to create new key performance indicators (KPIs). When KPIs are not meeting expectations, organizations should create a list of action items to get them back on track.
2. **Establish regular reviews of key data.** Once your organization has improved operational and energy data, it will do little good unless an operating group reviews it regularly and is prepared to use the insights to take action. Create a review team that meets at least once per month to review the data, KPIs and progress on action items.
3. **Make a senior executive accountable.** A review team can be full of the most talented, capable employees, but if it lacks

a senior decision-maker, the team's ability to take actions that turn data insights into better operations will be limited. Tie the new KPIs and related performance to incentives for the executive overseeing the review team as well as any other key employees to create real responsibility and meaningful results.

4. **Refine and reapply.** When data resolution yields a KPI that allows your organization to see something is underperforming, the fix isn't a one-time action. The underlying cause of the underperformance might be relevant to many other pieces of equipment or processes. Organizations need someone to be responsible for conducting root-cause analyses and implementing findings across day-to-day operations. This is one of the most important means to turn data into more affordable and effective operations.
5. **Institutionalize operational and work management changes.** The final and most advanced step in harnessing the potential of data resolution comes when your organization is ready to turn insights into fully integrated work management and optimization procedures. For example, data insights could be used to create checklists for technicians to follow, or the data could be used to create apps that show equipment's real-time and historical performance when a technician is performing onsite maintenance.

## Cases in Point: Data Resolution in Action

### JPMorgan Chase and Decarbonization Goals

JPMorgan Chase was an early trailblazer among large corporations setting sustainability goals. But after years of effort and significant investment, the company realized it wasn't getting its arms around its energy data in the ways it needed to drive down energy use and GHG emissions.

NextEra Analytics delivered an end-to-end energy management solution that uses artificial intelligence and blockchain technology to provide real-time and forecasted data to match JPMorgan's energy demand with clean energy resources available on the market, thus enabling lower-carbon and lower-cost energy use. Matching the data associated with JPMorgan's energy positions with data from NextEra Energy Resource's renewable energy fleet provided insights that led to the use of scheduling and dispatch tools to create additional value at the global financial institution's facilities.

### A Win-Win for South Sioux City

Energy use and costs were a primary concern for a large food manufacturer that built a new facility, including two cogeneration units, in South Sioux City, Nebraska. The city's municipal utility was looking for a win-win solution to support this major economic development for the area and the city's sustainability goals.

Through modeling, NextEra Analytics helped the South Sioux City utility and food manufacturer see

that, working together, they could optimize the use of the cogeneration units with the utility's assets to lower energy costs for the manufacturer, serve the electric grid and reduce total GHG emissions. A NextEra Analytics energy management system will provide the data resolution to execute the plan and optimize the energy assets.

## Conclusion

History proves that major breakthroughs require increased resolution to study and understand the challenge. And make no mistake, the efforts being made by municipalities, industrial operations and energy companies to achieve sustainable operations and energy use require real breakthroughs to succeed.

New technologies — from distributed generation to electric vehicles to smart electric appliances — are arriving at a rapid pace, creating the means to reach a sustainable future. But organizations have no way to chart the technology roadmap that's right for them without data resolution.

Fortunately, organizations have the ability today to implement energy management and optimization capabilities that could allow them to plan and design a sustainability roadmap for their operations as well as improve asset performance and benefit the bottom line. With the proper focus provided by an experienced implementation partner, these IT projects can be quick and efficient, avoiding typical IT pitfalls that often leave organizations hesitant to pursue critical investments in data.

NextEra Analytics delivers solutions that make managing operating equipment and energy use more efficient, smart and sustainable. NextEra 360 is comprehensive energy management software that increases operational efficiency, reduces cost and accelerates decarbonization. The customizable platform covers operating assets with real-time analysis, custom planning and optimization capabilities to meet sustainability goals and maximize value.

**Richard "Rich" Argentieri** is President of NextEra Analytics, Inc. (NEA) a leading energy consulting firm based in St. Paul, MN. NextEra Analytics develops forecasting and optimization solutions that enable low-cost sustainable power systems. Rich is a Lean Six Sigma Master Black Belt and has led countless Kaizen Events and Six Sigma projects for over a dozen Fortune 500 companies. He holds a degree in Management Information Systems (MIS) from Rensselaer Polytechnic Institute.

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