

Making energy data useful through visualization

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This guide examines how visual communication is a must-have skill for energy managers and explains how we can help businesses visualise energy data so it is easier to interpret energy statistics and make decisions to reduce energy consumption.

Publication context: This article reflects its publication date. Market prices, program rules, reporting duties and deadlines may have changed. Confirm current official guidance before making a decision.

Have you ever heard of the saying "You can't change what you can't measure"? Although every living being on this planet consumes and expels energy, figuring out how much energy you are consuming or expelling is something that can be quite difficult to measure and visualise. Not being able to properly present data in a simple and easy to understand manner can hold your business back in understanding the energy performance of your site.

Visual communication is a must-have skill for all energy managers and Northmore Gordon can help you visualise your data so that you can more easily interpret energy statistics. With advancements in how data is measured, stored and accessed, today's energy managers have the ability to monitor energy consumption literally at the touch of their fingertips. Through the introduction of Bluetooth, Wi-Fi and mobile technology, your energy data can be visualised through something as innocuous as your mobile phone.

But how can we represent this data so it can be simple to understand and useful to you and your decision-makers?

Here are some simple ways you can make visualising energy data useful to the decision-making process and reduce the energy consumption of your site.

What chart do I use for energy data visualisation?

The type of chart you use to visualise your energy consumption is important and depends on both who you are communicating to and the type of data that you have. Some useful charts include:

Bar Charts

Bar charts are perfect for comparing energy consumption and are one of the most common ways to visualise data. Monthly energy consumption over two or three years can be plotted on a bar chart to compare your energy consumption between the months of the calendar year, or to the previous months in other years.

Be sure not to include too many categories to compare and that the data that you are using is not continuous.

Scatter Plots

Scatter plots are useful when there are many different data points and you want to point out similarities in the data set. They can also be used to highlight outliers in the data set and give you an understanding of the data's distribution. One way to use scatter plots is to plot your electricity consumption against your production to determine if there is a relationship between these two factors of your business. A trendline can also be created to obtain an equation which defines the relationship between energy usage and your production. This can then be used to create energy performance indicators (EnPIs) for your business.

Pie Charts

Pie charts will be useful in comparing the energy consumption of different departments of your business, where the sum of each part will equal to a whole. They are easy to read and with a quick scan of the chart, you can understand which area of your site uses the most energy and which area uses the least.

It is also good practice to ensure you include percentage labels, as the portions of the chart might not be immediately obvious to some stakeholders.

Indicators

Indicators are great to use if your business has set targets in your energy usage, as they can then be used to track your current energy usage. They are easy to read and understand from a simple glance and can be expressed either as a gauge or ticker to create greater visual impact.

You can also compare your performance to the previous time period to show whether your usage has gone up or down.

The charts described above are just a number of ways that you could visualise your site's energy usage. The choice of what chart to use depends on what type of data you have and who you will be presenting these charts to.

At the end of the day, visualising how much energy you are using is the first and most crucial step in changing how much energy you are using. After you get an idea of what your energy usage is, the next steps to improving energy efficiency at your workplace would then be to:

Plug any gaps in your metering,

Set energy targets and goals

Find opportunities around your site to improve energy efficiency .

Implement these opportunities

Track energy savings of these opportunities through measurement and verification (M&V;)

Consider an Energy Audit for your business

Northmore Gordon can help you with these actions as well as help you assess the data you have and visualise it. This way, it is not only easy to understand but will assist you in making decisions to improve the energy consumption of your business.

Reporting and compliance context

Confirm the reporting entity and period, current thresholds, regulator guidance, evidence boundary and assurance obligations before applying the dated discussion to a live report.

Related guidance

Carbon advisory

Scope 1, 2 and 3 emissions

Contact us

Read the original article for the source publication and its full context.

What is the main topic of Northmore Gordon's article 'Making energy data useful through visualisation'?

The article discusses how visual communication is a must-have skill for energy managers and explains how we can help businesses visualise energy data so it is easier to interpret energy statistics and make decisions to reduce energy consumption.

According to the article, why is it important to visualise energy data?

The article states that not being able to properly present data in a simple, easy-to-understand manner can hold a business back in understanding the energy performance of its site, and that visualising energy usage is the first and most crucial step in changing how much energy is being used.

What types of charts does the article recommend for energy data visualisation, and what are they used for?

The article recommends four chart types: Bar Charts, for comparing energy consumption (e.g., monthly consumption across years); Scatter Plots, for identifying similarities, outliers, and relationships in data sets (e.g., electricity consumption vs. production, useful for creating energy performance indicators/EnPIs); Pie Charts, for comparing energy consumption between departments where parts sum to a whole; and Indicators, for tracking performance against set energy targets, shown as gauges or tickers.

How can scatter plots help create energy performance indicators (EnPIs)?

A scatter plot can plot electricity consumption against production to determine if there is a relationship between the two factors. A trendline can then be created to obtain an equation defining this relationship, which can be used to create energy performance indicators (EnPIs) for the business. This approach supports ongoing energy management by enabling consistent performance tracking across different operating conditions.

What best practice does the article suggest for pie charts used in energy reporting?

The article suggests including percentage labels on pie charts, since the portions of the chart might not be immediately obvious to some stakeholders. This improves clarity and ensures decision-makers can quickly understand the contribution of each department or energy category without requiring additional interpretation.

What should be avoided when creating a bar chart for energy data?

The article advises not to include too many categories to compare and to ensure the data used is not continuous. This keeps the comparison focused and interpretable, allowing stakeholders to identify meaningful patterns without visual confusion.

How does Northmore Gordon's metering guidance inform the design of effective energy visualisation?

Our metering guidance emphasizes that visualisation should begin by specifying the operational or investment question being answered, the equipment or site boundary involved, and the people who will use the information. This ensures dashboards and charts serve a clear purpose rather than simply presenting attractive displays. Key design questions include whether data attribution can be linked to equipment boundaries, whether display intervals are fine enough to describe operating events, whether visualisations cover pre- and post-project periods to assess improvements, whether they show

production or occupancy variables alongside energy data, and whether calculations and data sources are retained for reproducibility and audit.

What are the recommended next steps after visualising a site's energy usage, according to the article?

The article lists the next steps as: plug any gaps in metering, set energy targets and goals, find opportunities around the site to improve energy efficiency, implement these opportunities, track energy savings through measurement and verification (M&V;), and consider an Energy Audit for the business. This sequence connects data visibility to action, ensuring visualisation leads to measurable outcomes rather than remaining analytical.

What technologies does the article mention that enable modern energy data visualisation?

The article mentions that advancements in Bluetooth, Wi-Fi, and mobile technology allow energy data to be visualised through something as simple as a mobile phone. These technologies support real-time monitoring and accessibility, making performance data available to multiple stakeholders and enabling faster response to anomalies or efficiency opportunities.

How does energy data visualisation connect to Northmore Gordon's broader energy management offering?

Visualisation serves as the foundation for ongoing energy management and decision-making within our six-stage delivery approach. Clear, purposeful dashboards and reports support the Assess stage (identifying opportunities through benchmarking and forecasting), the Build the Case stage (comparing investment alternatives), and the Perform stage (tracking energy management performance reviews and multi-site expansion). Our moreData platform provides these visualisation capabilities alongside underlying data collection, performance indicator tracking, and opportunity analysis functionality.