Energy Resilience for Finance & Operations Teams

A step-by-step guide to managing energy cost volatility and improving budget decisions

PLAYBOOK

Energy Elephant

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Introduction

Energy is increasingly affected by price volatility, grid constraints, climate stress, and supply disruption, making energy resilience and security a core budgeting and forecasting concern. Energy resilience depends on soft skills including leadership, governance, stakeholder co-ordination, and continuous review – not just hardware equipment upgrades.

A robust resilience plan gives energy budget owners and forecasting teams a practical way to reduce business exposure and make smarter investment decisions over time.

In this step-by-step guide, we will show you how to strengthen your energy budget against volatility and disruption by:

- Making energy use and cost visible
- Creating a reliable baseline for forecasting
- Prioritising the most important risks and consequences
- Reducing exposure to energy shocks
- Protecting essential operations and critical loads
- Tracking whether resilience measures are working
- Improving the quality of your annual budget and forecast decisions

Step 1: Engage Stakeholders & Establish a Clear Scope

Treating energy as a strategic risk variable rather than a static overhead requires collaboration across departments, so finance, operations, facilities/estates, and sustainability leaders all need a seat at the table.

Start by defining the scope of your organisation's energy system. You need to know exactly what sites and assets are covered, what energy sources are included, which operations are critical to continuity, and any external dependencies that could affect performance, e.g. grid supply failure, which could cascade across sites, assets, or services.

Make sure each group/leader understands:

- Their role in the plan, including how their actions affect budget risk and operational continuity
- Communication channels to be used
- What data they must provide
- Which decisions need sign-off
- How often the plan will be reviewed

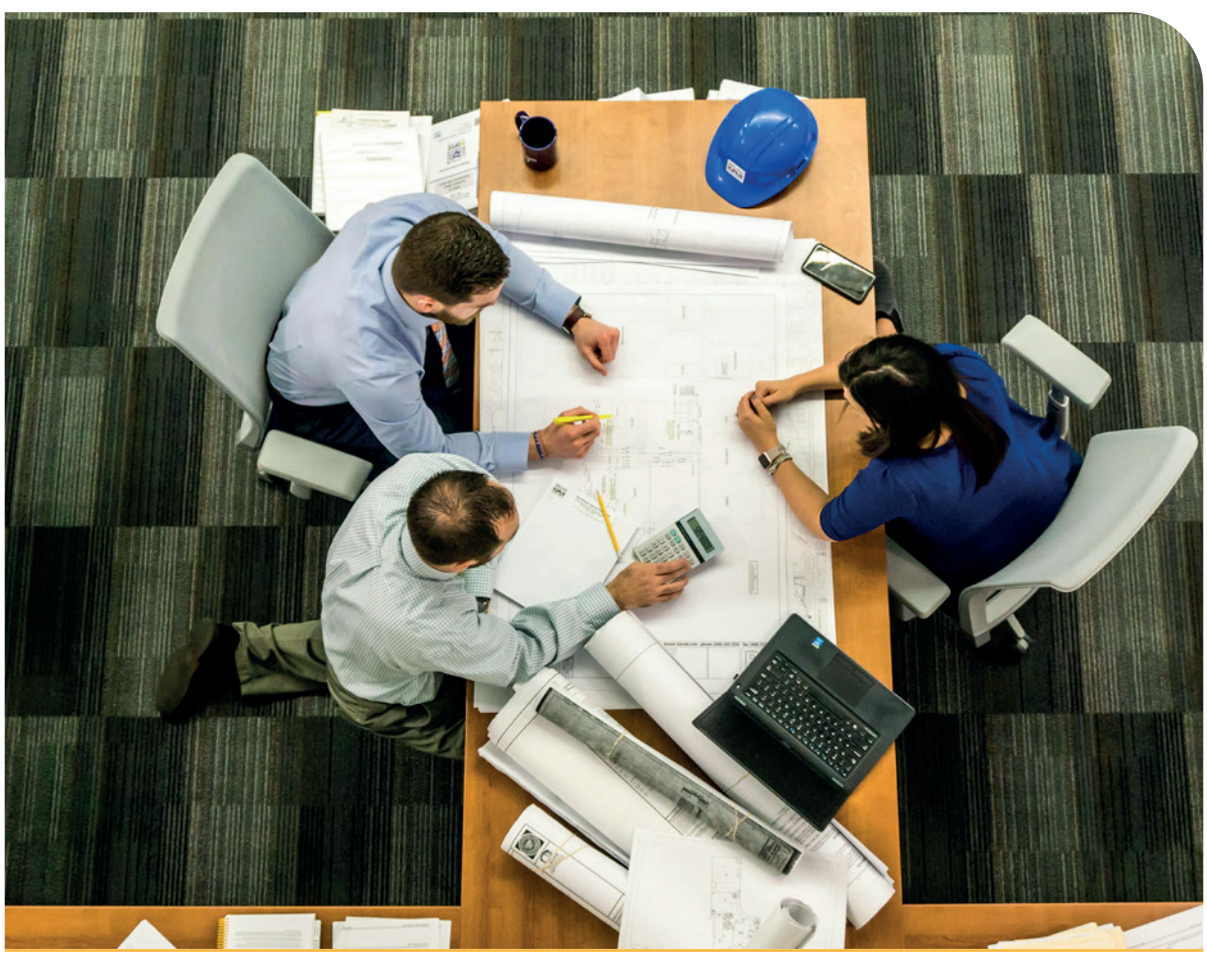
Step 2: Assign Ownership & Review Cadence

A resilience plan needs clear accountability. Strong leadership, governance, and visibility of responsible parties make ownership a core part of implementation rather than an administrative detail.

Set named owners for:

- Data collection and validation
- Forecast updates
- Project delivery
- Performance reporting
- Risk reviews with mitigation measures

Agree a review cadence from the start so the plan does not lose momentum once the budget is approved.



Step 3: Centralise & Validate Data

Centralising energy data is the crucial first step to building a robust resilience plan. Investing in fit-for-purpose energy management software that uses automation, AI, and analysis technologies to help you create, store, organise, analyse, report, and act on all your data in a single, searchable, and secure location will be hugely beneficial in helping you assess risk, forecast costs, and justify investments.

With reliable and granular data in place, the system will enable you to proactively:

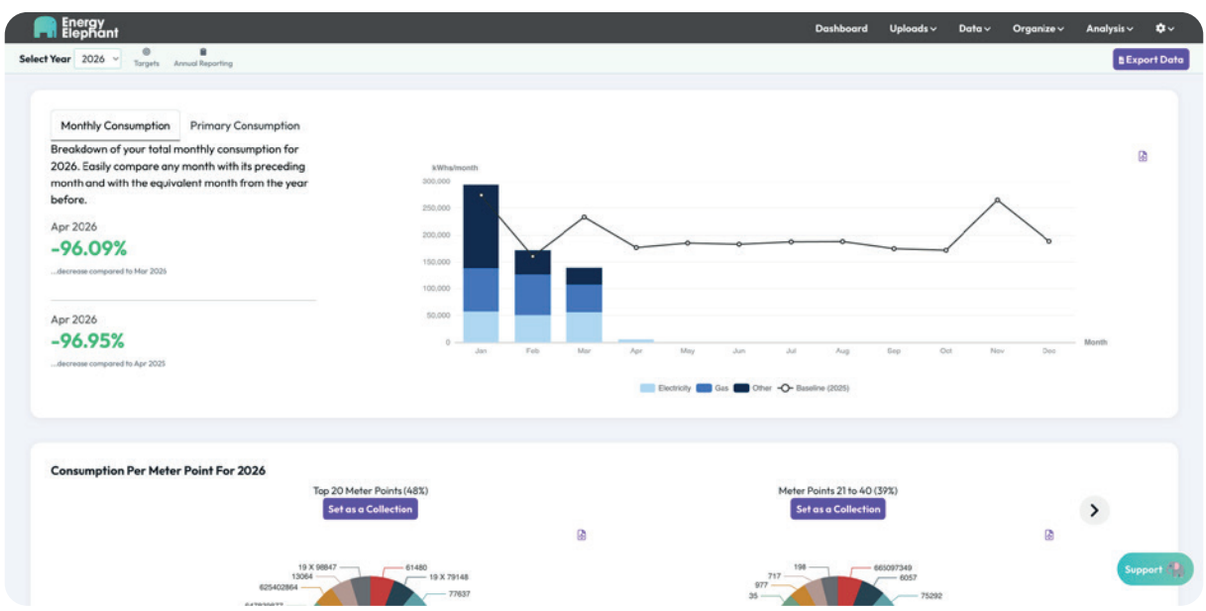
- Check for missing, duplicated, or inaccurate records
- Detect anomalies and inefficiencies
- Forecast demand patterns
- Identify flexibility opportunities
- Model exposure to price volatility

Executive Insight: Where energy data is still managed through spreadsheets and siloed systems, teams may be working with incomplete or disconnected information. In a volatile market, this can make it much harder to respond quickly, forecast accurately, and make fully informed decisions. An all-in-one energy management and carbon/ESG reporting platform like EnergyElephant delivers measurable financial, operational, regulatory, risk, environmental performance, and reputational benefits across the entire organisation.

Step 4: Set a Baseline

Your baseline is the reference point for tracking progress, measuring efficiency, and judging whether your resilience investments work.

To create a baseline, you'll need to gather at least 12 (preferably 24) months of historical consumption and cost data across all relevant sites, meters, and fuels. Include sub-metering or asset-level data where available to improve visibility.



Comparing monthly energy data against a baseline in EnergyElephant

Document your methodology and adjust for variables that affect energy use so year-on-year comparisons remain credible.

A strong baseline should account for:

- Normal operating conditions
- Seasonal variation
- Production or occupancy shifts
- Major one-off disruptions that could distort results
- The boundaries of what is being measured, such as one site, multiple sites, or an entire business unit

Step 5: Identify Risks & Threats

A resilience plan should be built on a risk-based threat assessment.

Focus on the likelihood and severity of risk categories most likely to affect your budget or continuity including:

- Price volatility
- Grid constraints and outages
- Extreme weather and climate events
- Fuel supply disruption
- Ageing equipment and maintenance failure
- Interdependent-system risks (cyber attacks or control-system failure)
- Regulatory and market change

Once risks are identified, focus on consequences rather than treating every issue as equal. This will help you prioritise the risks that would cause the biggest operational or financial impact if they materialised.

Questions to ask:

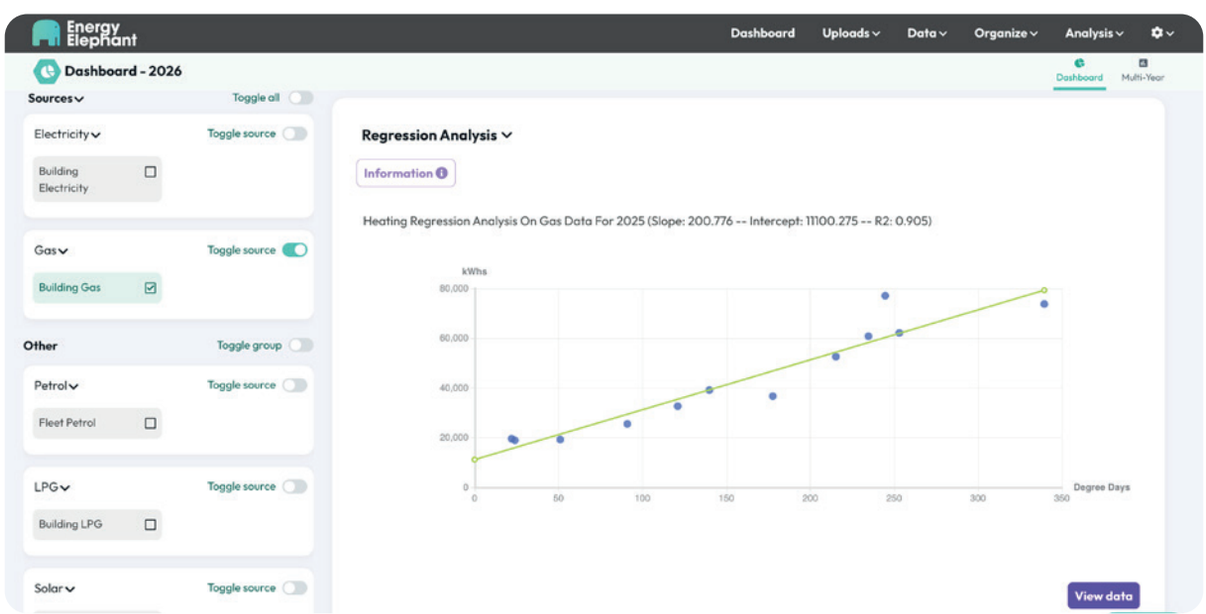
- What would fail first?
- Which operations create the highest financial loss if disrupted?
- Which loads are critical to people, service continuity, or compliance?
- What level of risk is acceptable to the organisation?
- What is the cost of not acting?

Step 6: Forecast Across Scenarios

Forecasting should not be based on last year's spend alone. You need to model market volatility, demand changes, and operational risk so budgets reflect likely future conditions rather than static assumptions.

Build your forecast using:

- Expected consumption changes from growth, electrification, or process changes
- Price projections and likely tariff movements
- Planned efficiency projects and their timing
- Contingency allowances for volatility, outages, or emergency procurement



A heating degree day regression model in EnergyElephant for predicting thermal energy requirements

Analysing historical usage, incorporating future operational and weather assumptions, and adding projected cost data into a practical forecasting model gives budget owners a more realistic view of risk and helps avoid surprises later in the year.

Use three scenarios as standard:

- Base case – expected operations and average conditions
- Stress case – higher prices, greater demand, or lower efficiency
- Severe case – outage, extreme weather event, or supply interruption

Step 7: Set Resilience Objectives

Once the baseline is clear, define what resilience means for your organisation. Use SMART (specific, measurable, achievable, relevant, and time-bound) goals so the budget supports measurable progress instead of broad intentions.

Useful examples include:

- Reduce energy consumption by a defined percentage within a year
- Increase renewable energy use by a set target by a specific date
- Lower exposure to peak demand charges or price spikes
- Improve backup capability or energy storage for critical services
- Increase the share of flexible demand or onsite generation
- Improve continuity during grid events or supply disruption
- Reduce outage recovery time for essential operations

Step 8: Prioritise Investments

The most effective resilience measures depend on data visibility and should be selected based on impact, feasibility, and return. The best resilience strategy is usually a combination of measures, not a single large investment.

Popular solutions in the demand-side flexibility toolkit include:

1. Battery Energy Storage System (BESS)

Batteries provide fast, controllable response to grid events and market signals. They enable peak shaving, backup capability, and participation in flexibility markets.

2. Flexible Load Control

Demand flexibility is often the most cost-effective resilience strategy. Systems such as HVAC (heating, ventilation, and air conditioning), refrigeration, pumping, and batch processes can shift demand when co-ordinated intelligently.

3. Thermal Storage

Thermal storage allows organisations to shift heating or cooling demand across time, reducing peak electricity demand.

4. Onsite Generation

Solar PV, combined heat and power (CHP), biomass power systems, and wind generation reduce dependence on external supply and improve energy autonomy.

5. Smart EV Charging & Vehicle-to-Grid (V2G)

As vehicle fleets electrify, they introduce significant flexible load and potential storage capacity.

Executive Insight: As mentioned in Step 3, centralising and validating all your energy data is the crucial first step to building a robust resilience plan, because even the best hardware in the world cannot operate optimally on incomplete or inaccurate information. Rule of thumb? Software first. Hardware second.

Step 9: Build the Financial Case

Resilience investments should be evaluated on avoided downside costs as well as direct savings, which means a cost-benefit approach is best.

This means budgeting for:

- Planned maintenance of equipment
- Upgrade or replacement of ageing equipment
- Avoided outage costs
- Lower emergency procurement risk
- Reduced peak demand charges
- Potential flexibility-market revenue
- Contingency funds for price shocks or grid events

Utility cost analysis tools in EnergyElephant

Step 10: Monitor & Adjust

Active monitoring, evaluation, communication, learning, and adaptation are part of the resilience cycle. Flexible budgeting is essential so forecasts can be adjusted when market conditions, operations, or risk exposure change. A good resilience plan is reviewed frequently, not filed away after approval.

You should regularly assess performance against:

- Actual versus forecast spend
- Demand peaks and capacity limits
- Progress against targets
- Savings from efficiency projects
- Performance during stress events
- New or emerging risks

Annual Checklist

Use this checklist to maintain consistency and track year-on-year progress:

1. Gather the latest 12 to 24 months of energy and cost data
2. Validate bills/invoices, tariffs, and meter records
3. Refresh the baseline if operations have changed materially
4. Run base, stress, and severe-case forecasts
5. Re-rank resilience risks by likelihood and consequence
6. Update resilience investments by value, urgency, and feasibility
7. Set targets, budgets, and review dates
8. Assign actions, owners, and deadlines

EnergyElephant offers a free virtual energy audit that can save you money, identify energy waste, and reduce carbon emissions. Simply visit our **Virtual Energy Audit** page, and once you've created an account, you'll be able to take a video tour of the platform before uploading your data. You are also more than welcome to reach out to our support team for any assistance during the process.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