

DEMAND RESPONSE FOR THE COMMERCIAL AND INDUSTRIAL SECTORS

Honeywell Smart Grid Solutions

Honeywell

CONNECTING COMMERCIAL AND INDUSTRIAL UTILITY CUSTOMERS TO DEMAND RESPONSE

The power industry has transformed in the last decade, with its evolution characterized mainly by digitalization, decarbonization and decentralization efforts. Technological advancements and automation make it easier to increase efficiencies across the energy value chain, while renewable energy integration and other distributed energy resources — battery energy storage systems and electric vehicles, for example — work to modernize and bolster the grid with resiliency, sustainability and better control.



Energy consumption has reached unprecedented levels, particularly in the commercial and industrial sectors. Large-scale production, continuous operations, heating and cooling systems, processing equipment and construction projects necessitate increased energy for small and medium-sized businesses (SMBs), commercial consumers and industrial operations. Greater consumption by these major players is in response to increased urbanization, population growth and economic development. In the United States, we saw record-breaking numbers in power consumption by commercial and industrial players in 2024, with forecasts projecting respective sales higher than 1,413 and 1,039 billion kilowatt-hours in the coming years.¹

While the causes of growing consumption are important to commercial and industrial development, they strain our grid and present utility companies with many challenges, even with digitalized, decarbonized and decentralized efforts. At the center of the power industry, utilities must find effective ways to manage energy demand, employ peak reduction solutions and optimize consumption within the commercial and industrial sectors.

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UTILITIES MUST ADDRESS THE FOLLOWING ENERGY-RELATED CHALLENGES IN THE COMMERCIAL AND INDUSTRIAL SECTORS:



INTERMITTENCY OF RENEWABLE ENERGY SOURCES

Integrating renewable sources for commercial and industrial power isn't without uncertainty. A stable energy supply is paramount to maintaining steady operations across industries, but the variability of wind and solar energy can lead to disruptions and outages, which makes it difficult to predict demand and long-term energy needs. And as generation assets, renewable sources do not provide enough base load power.



UNWAVERING RESILIENCY NEEDS

Ensuring stable electricity and gas services during emergencies and weather-related events depends on grid reliability, which is vital for critical customers to function and for essential services to be delivered during and after these events. Resiliency in utilities is essential for maintaining operational continuity, enhancing efficiency, meeting environmental goals and ensuring customer satisfaction in the face of various challenges and disruptions.



INCREASED ELECTRIFICATION

Utilities see very high demand for power due to electrification, data centers and electric vehicles. This high power demand compounds the existing challenge of too little energy supply for too much demand, which means utilities need to work even faster at shifting loads or reducing them.

DEMAND RESPONSE PROGRAMS AND DISTRIBUTED ENERGY SOLUTIONS ARE THE KEY TO NAVIGATING INTERMITTENCY, RESILIENCY AND ELECTRIFICATION CHALLENGES WITHIN THE COMMERCIAL AND INDUSTRIAL SECTORS.

These programs manage energy consumption during peak periods by incentivizing consumers to use less energy. They also help utilities meet energy goal mandates each year, balance energy budgets, improve customer relationships and enhance their brand with measurable energy-saving results.

With 40+ years of energy efficiency, load management and demand response experience in over 1,000 utilities, custom demand response programs and turnkey solutions from *Honeywell Smart Energy* can achieve these outcomes for commercial and industrial customers — and more.

HONEYWELL SMART GRID SOLUTIONS PORTFOLIO

For SMBs, other commercial consumers and industrial customers, our hardware and software solutions for demand response are cost-effective, defensible and can strengthen utilities' new or existing demand response programs. They include:



Outcome-Defined Solutions

Hardware and software solutions are modular, scalable and tailored to utility needs.



Energy and Power Optimization

Customer load management and BESS resources for frequency optimization.



Program Management Services

Turnkey demand response programs cover everything from recruitment to measurement and verification to incentive payout.



Multi-Service, Multi-Asset Control and Optimization for Grid Edge

Unlock the full value of the grid via risk reduction, reliability and system visibility.



EV Commercial Fleet Orchestration

EV management programs help prevent power overloads during peak demand.



BESS Install and Control

Behind or in front of the meter installation, control and aggregation of all BESS types.



Multiple Virtual Power Plants (VPP) Software Offerings to Meet All Program Needs

Includes demand response, ancillary services, demand charge management and peak demand charge reductions.



Advanced Load Control and Measuring Demand Response Controller

Operates seamlessly within the LTE CAT-M or CAT-1 cellular radio networks using powerful JSON messaging.

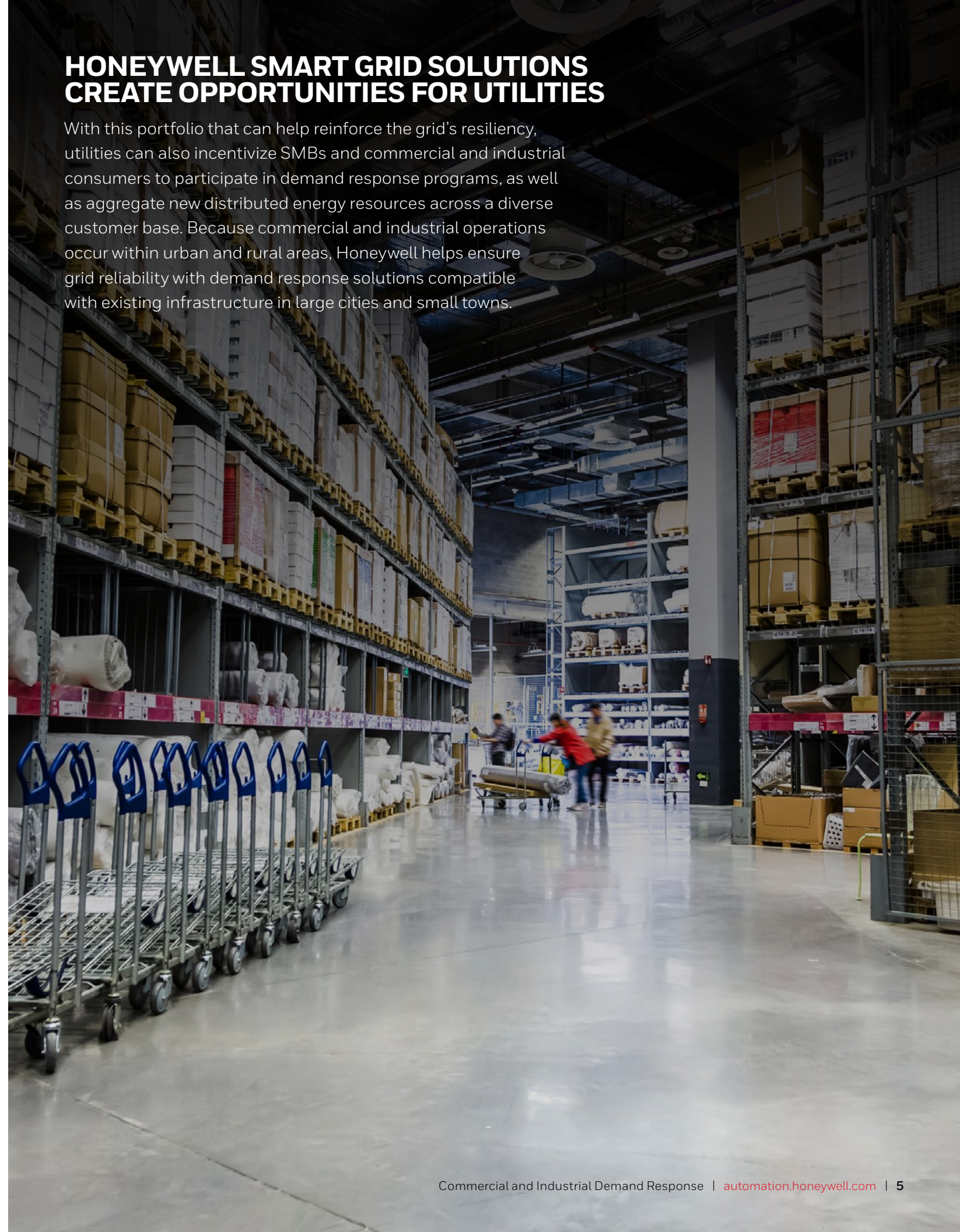


Generator Demand Response, Emissions Upgrades

Can facilitate upgrades to existing generators for demand response and economic participation.

HONEYWELL SMART GRID SOLUTIONS CREATE OPPORTUNITIES FOR UTILITIES

With this portfolio that can help reinforce the grid's resiliency, utilities can also incentivize SMBs and commercial and industrial consumers to participate in demand response programs, as well as aggregate new distributed energy resources across a diverse customer base. Because commercial and industrial operations occur within urban and rural areas, Honeywell helps ensure grid reliability with demand response solutions compatible with existing infrastructure in large cities and small towns.



THE HONEYWELL COMMERCIAL AND INDUSTRIAL DEMAND RESPONSE PROCESS

One of the biggest, most important reasons utilities are engaged in furthering commercial and industrial demand response efforts is because utility *customers* have expressed ample interest in reducing their energy consumption. To ensure utilities and their customers are supported from end to end, we've curated a simple yet thorough process to introduce, integrate and implement turnkey demand response programs and solutions.



- 1. EXPLORATORY** – We explain the demand response program to customers, who then agree to our demand response survey.
- 2. DR SURVEY** – A no-cost demand response survey is conducted to determine which measures are most appropriate and effective given various operations.
- 3. DEMAND RESPONSE MEASURES** – Together, we review identified demand response measures with the customer. The customer approves and signs a contract agreement.
- 4. INSTALLATION STAGE** – Approved measures are custom-programmed and installed.
- 5. COMMISSIONING STAGE** – Function and performance testing are completed, and the kW commitment level is determined. Final project is approved.
- 6. GO LIVE** – Customers start participating in demand response programs.
- 7. M&V AND INCENTIVE ADMINISTRATION** – Measurement and verification data are recorded and analyzed as incentives are administered for participation and energy savings.

This process delivers convenience, energy savings, personalization and effortless engagement to customers, making it cost-effective and easy for SMBs, commercial consumers and industrial sectors to participate in utility-led demand response programs – and benefit from them.

KEY HONEYWELL SMART GRID SOLUTIONS DIFFERENTIATORS

Using a wide breadth of in-house and partner technologies, we can create the perfect demand response program or add to utilities' existing strategies.

OUR DIFFERENTIATORS INCLUDE THE FOLLOWING:

- Harness flexibility of distributed energy resources across customer segments, programs, assets and vendors (making it possible to adjust demand and shift usage)
- Constraint-based management and real-time control
- Project marketing, management and delivery of demand response programs, distributed energy resources and energy efficiency enhancements are executed by industry-leading teams
- Deliver value to energy markets and distribution systems
- Solutions are technology-agnostic and future-proof
- Tailored programs can meet capacity, economic and regulatory requirements

Every demand response solution and program offering within the Honeywell Smart Grid Solutions portfolio helps utilities facilitate peak energy reduction, manage energy demand and optimize energy consumption across growing SMBs, commercial processes and industrial operations. This helps utilities deliver sustainable energy savings to each customer and reinforces our entire energy resource ecosystem and grid with greater control and resiliency.



References

1. Reuters. "US power use expected to reach record highs in 2024 and 2025, EIA says." 10 September 2024. <https://www.reuters.com/business/energy/us-power-use-forecast-reach-record-highs-2024-2025-eia-says-2024-09-10/>.

For more information

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WHAT
WE
MAKE IT**

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