

Smart Electricity Optimizer



Energy Technologies

714-760-5112

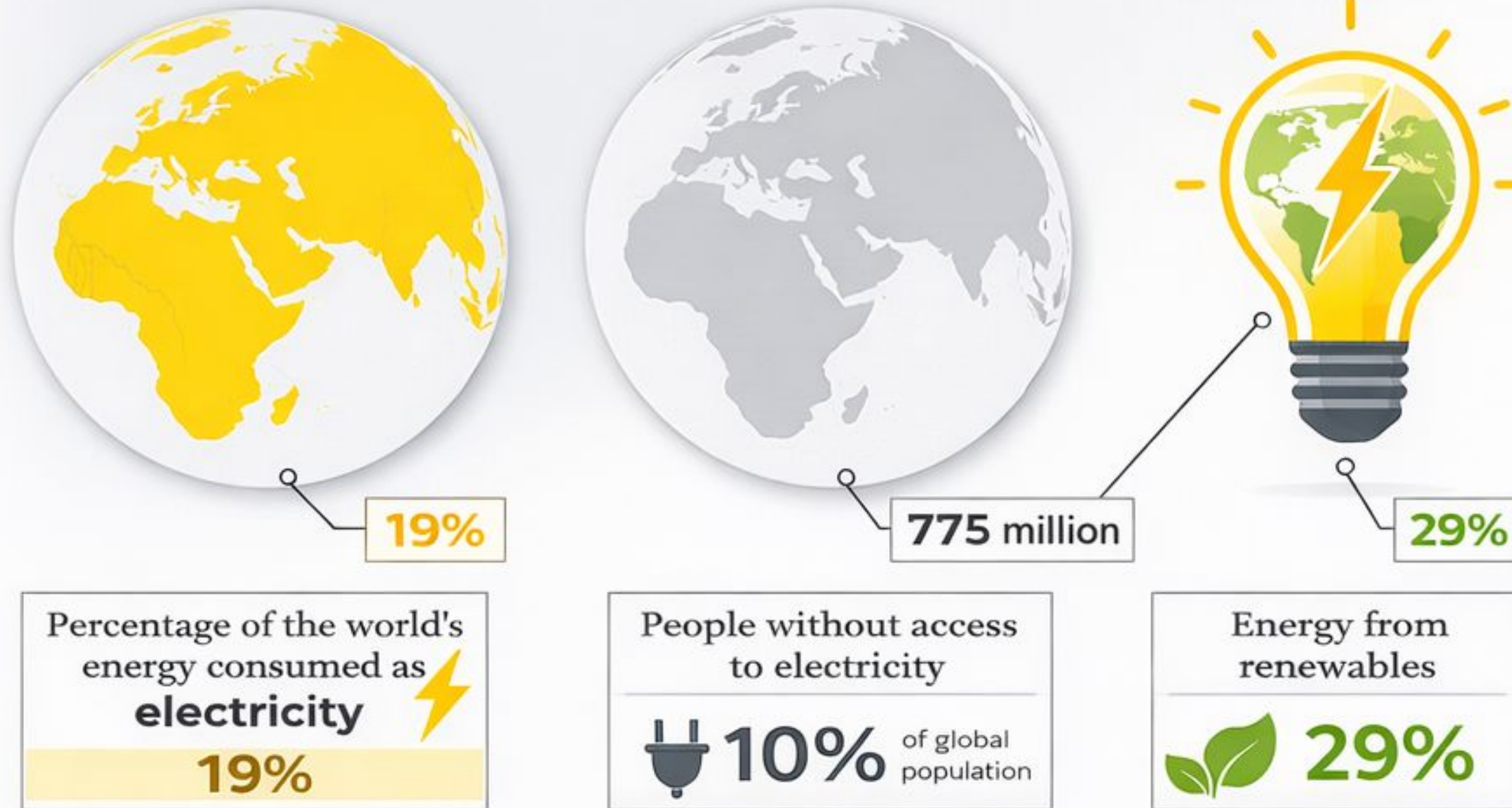
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Electricity is a Global Issue

Electricity makes up a large portion of the world's energy consumption



Source: IEA

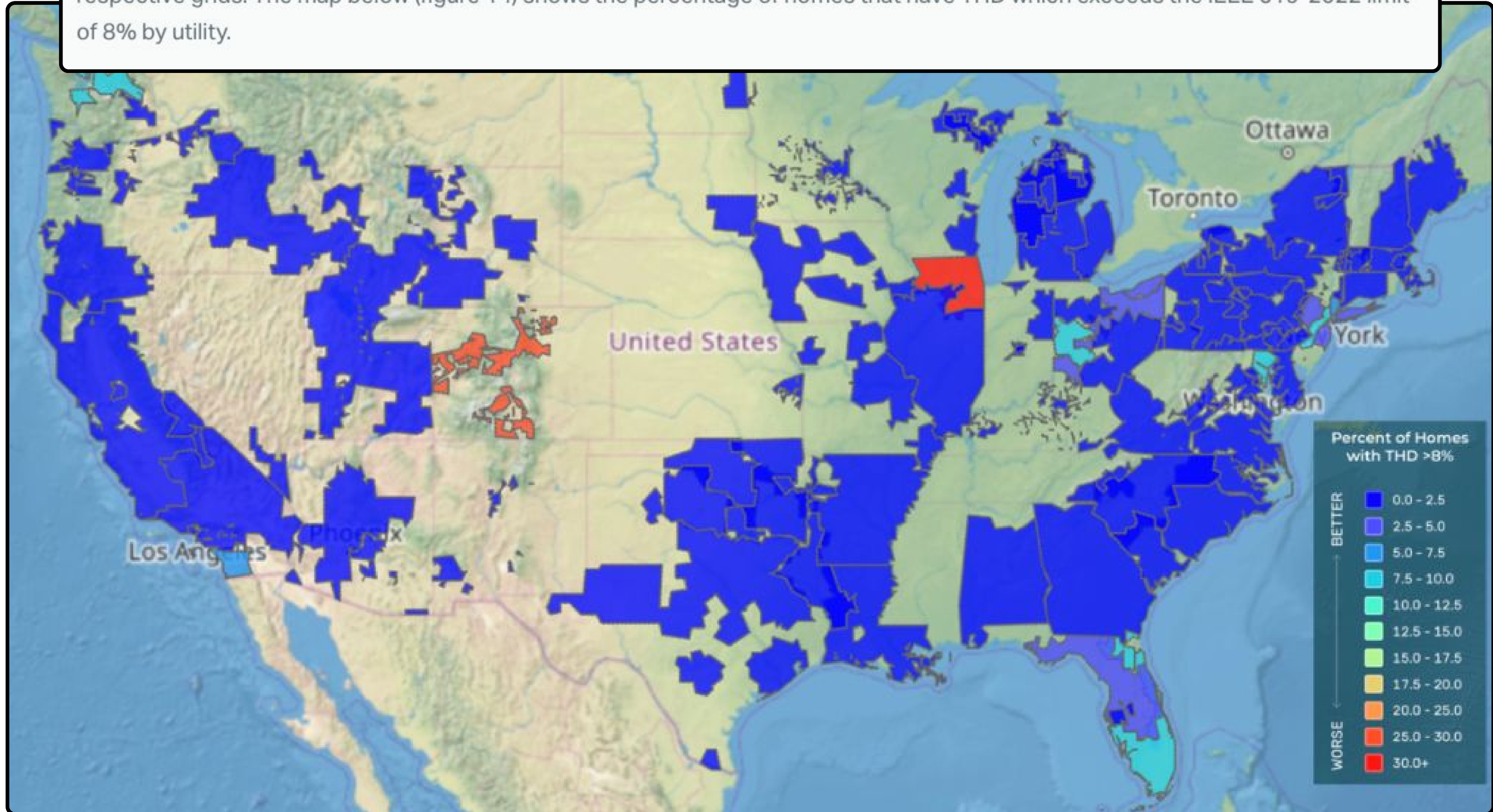
Source: IEA

- The International Energy Agency (IEA) reports that **775 million** people worldwide lack access to electricity, representing **10%** of the global population.
- As of 2023, **19%** of the world's **energy** is consumed as electricity, while **29%** is generated from renewable sources such as solar, wind, and hydropower.

Energy Costs are Rising. Access to Electricity Remains a Major **Challenge**.



By grouping sensors together by utility, we can begin to understand the relationship between utility operators and THD levels on the respective grids. The map below (figure 14) shows the percentage of homes that have THD which exceeds the IEEE 519-2022 limit of 8% by utility.



Demand for Electricity & Harmonic Distortion

The Modern Grid Faces Growing Challenges

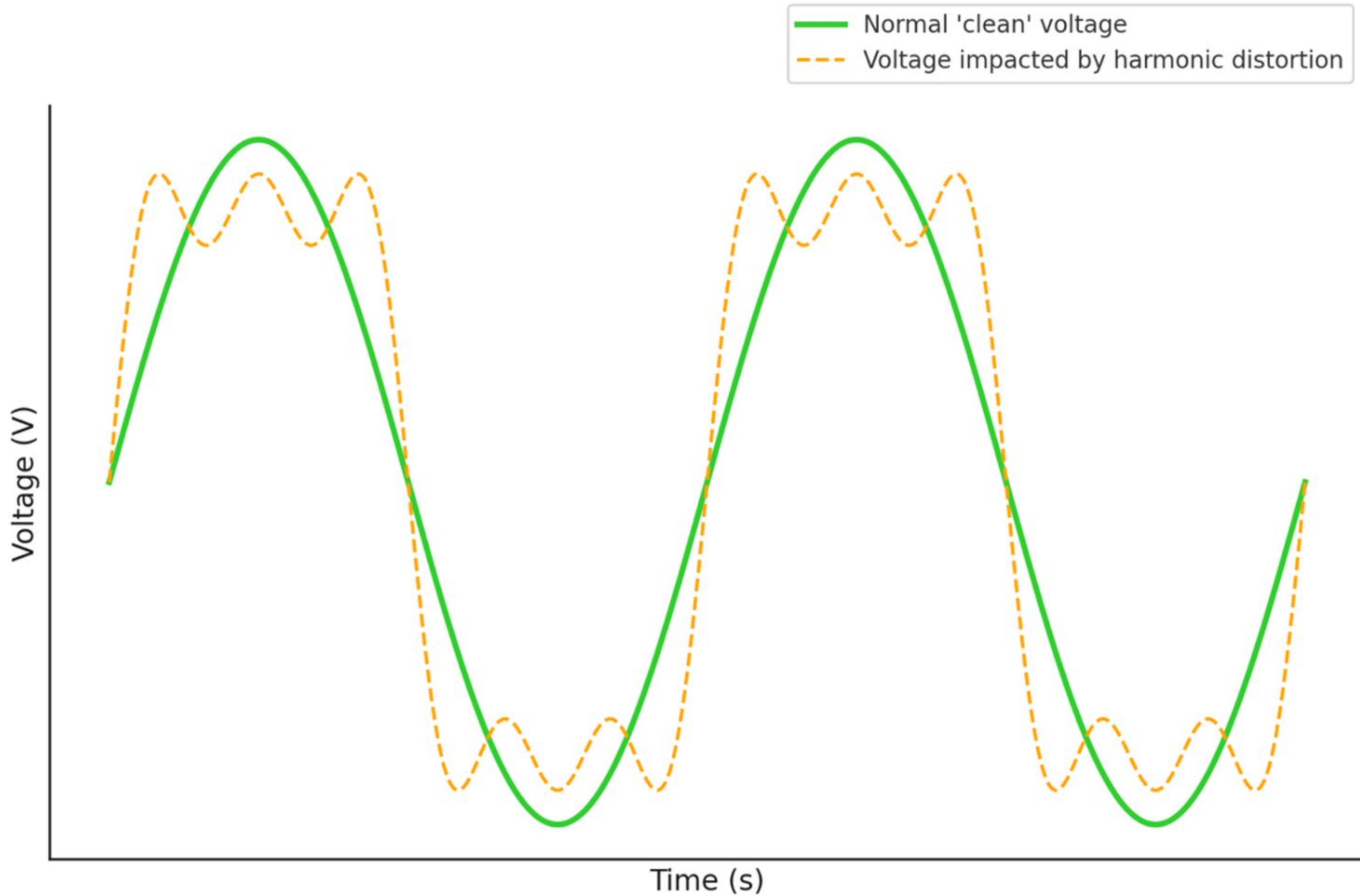
Rising electricity demand from data centers, EV charging, and modern electrical equipment.

Harmonic distortion caused by nonlinear loads such as VFDs, UPS systems, servers, and LED lighting.

Harmonics impact grid efficiency, equipment reliability, and can lead to potential damage.

Increasing need for advanced power quality solutions to maintain efficient and reliable operations.





Introduced in 2005

Tens Of Thousands Of
Optimizers Deployed By
Oil And Gas Producers

ConocoPhillips



The 1st Problem the Smart Energy Optimizer Addresses

Electric infrastructure is becoming increasingly burdened and inefficient as harmonic distortion enters building electrical systems. This results in property owners paying for electricity that cannot be fully used.



Utilities bill based on total kWh delivered, including power made unusable by harmonic distortion — reducing effective usable electricity inside the building.

Electricity costs are also driven by time-of-use, peak demand, and demand charges, meaning power quality inefficiencies directly increase operating expenses.

Result: Growing need for advanced power quality solutions to improve usable energy, reduce costs, and enhance electrical system performance.

Power Factor Correction Solution

How Power Factor Correction Improves Electrical System efficiency



Power factor correction reduces reactive power and improves system efficiency.

Harmonic mitigation helps protect equipment and extend asset life.

Optimized power quality lowers demand charges and operating costs.



Understanding Volts, Amps, Watts, & Power Factor

Comparing Electricity to Vehicle Performance



Volts = Pressure

Like the **push** of the system
The force driving power to be delivered.



Amps = Flow

Like the **flow** of the system
The amount of workload being pulled.



Watts = Work

Like the horsepower at the wheels
The actual useful power being delivered.



Power Factor = Efficiency

Like the miles-per-gallon
The efficiency of how well the power is being delivered.

$$+ \text{ Power Factor } = =$$



Simple Takeaway: Watts tell you how much work is being done.
Power factor tells you how efficiently that work is being delivered.



Our Smart Electric Optimizer Technology

We have improved our proprietary Smart Energy Optimizer to increase electrical efficiency, lower energy costs by up to 35%, and extend the lifespan of motors and electrical equipment.

HIGH QUALITY

Capacitors, harmonic correction, and surge protection components designed for industrial-grade performance.

MANUFACTURING

Made in the U.S.A.

INSTALLATION LOCATIONS

Electrical panel, subpanel, and motor load circuits.

3-in-1 Energy Optimization Solution

THD Reduction: Minimizes waveform distortion from nonlinear loads such as VFDs, servers, LED lighting, and EV chargers.

Power Factor Correction: Improves electrical efficiency and reduces losses, penalties, and demand-related costs.

Surge Protection: Protects sensitive equipment from voltage spikes and transient events.

CERTIFICATIONS

UL and cUL

TYPES

Single-phase and three-phase configurations available.

WARRANTY

10 years

SIMPLE INSTALLATION

Approximately 30 minutes per installation location.



Two-Layer Energy Optimization Strategy

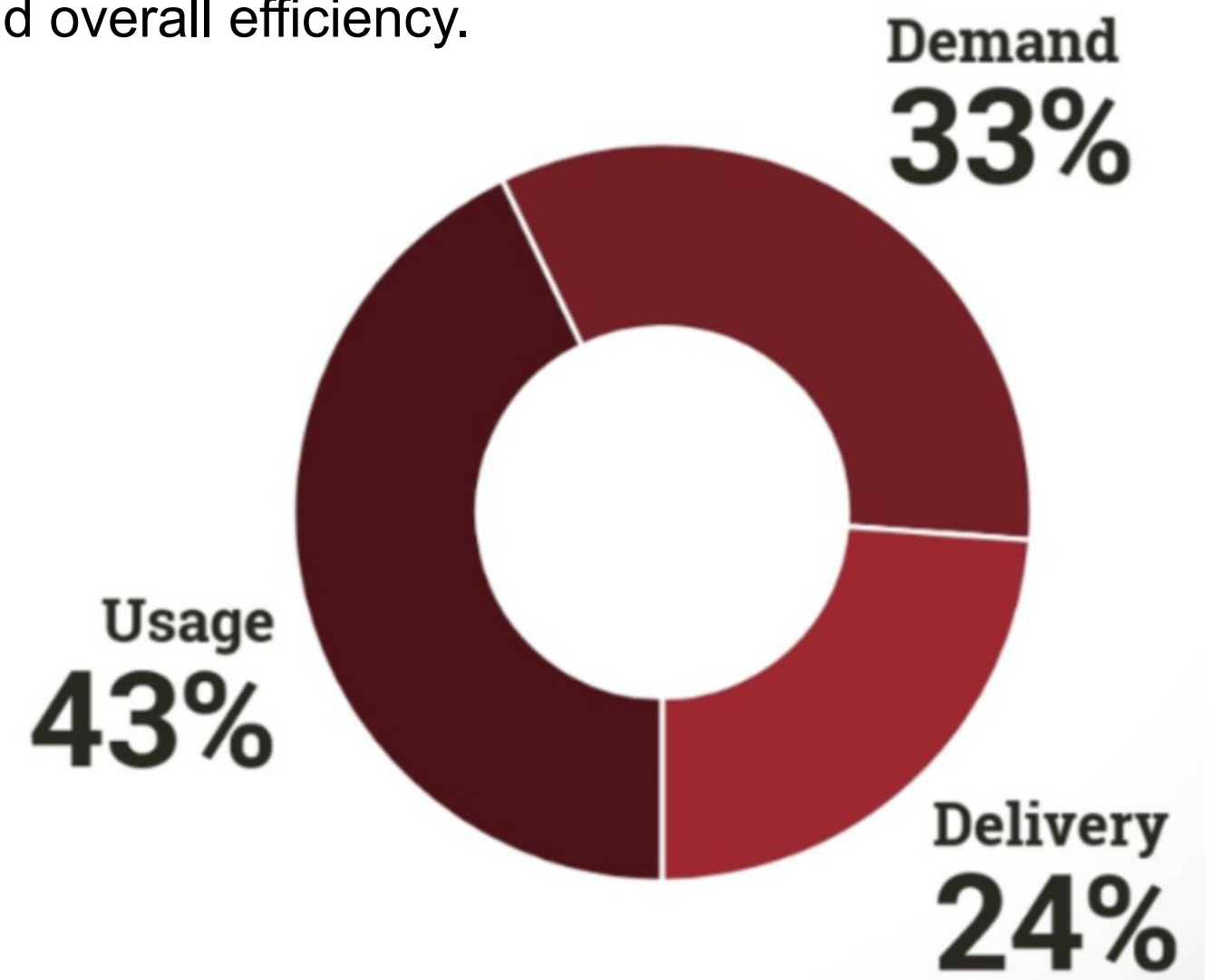
We address energy performance at two distinct points in your electrical system to reduce total cost, improve efficiency, and enhance equipment performance.

Utility-Side Optimization (At the Meter)

This solution focuses on improving the quality of electricity entering the building. By harmonizing incoming power and reducing harmonic distortion and waveform irregularities, the system increases the usable portion of delivered electricity and helps reduce the total kWh measured and billed. It also stabilizes voltage conditions before power enters the facility, creating a cleaner electrical baseline that improves downstream system performance and overall efficiency.

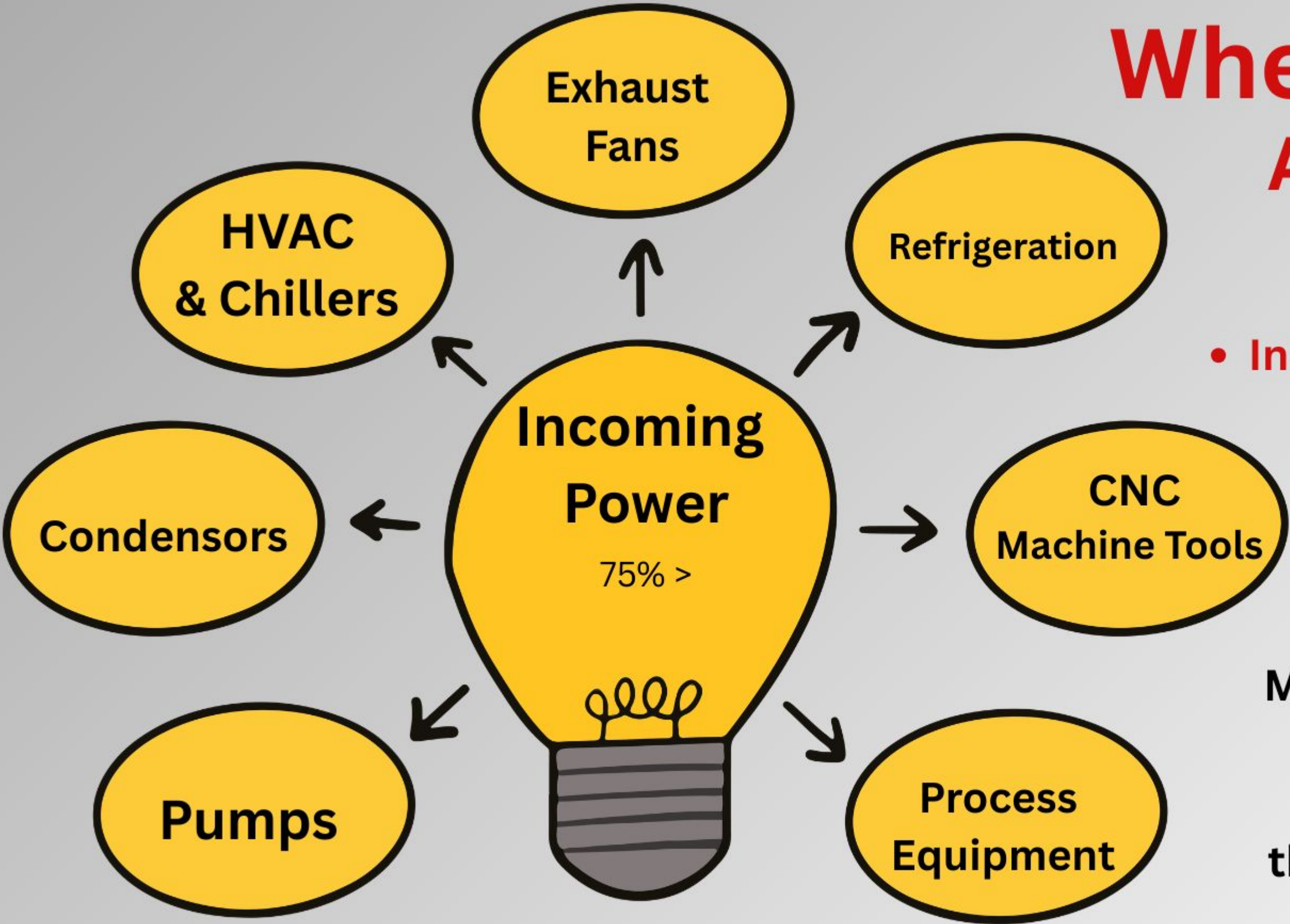
Behind-the-Meter Optimization (Inside the Building)

This solution optimizes electricity based on the specific needs of facility loads. Power factor correction improves electrical efficiency and reduces system losses, while THD reduction helps protect motors, drives, and sensitive electronics. Integrated surge protection up to 2300 joules safeguards equipment from transient voltage spikes. Together, these improvements help reduce peak, demand, and time-of-use charges, extend the lifespan of electrical infrastructure, and enhance overall system reliability and operational stability.



Where It Works Addresses:

- Poor Incoming Power
- Individual Motor Efficiency



Must correct both supply and application for optimal results on these examples, & more...



Trusted Technology

160,000+ Installs By Over 200 Well Known Brands. Big Brands Like McDonalds, Subway, AT&T Stadium & More Each Day - 5 In The Top 100 Of Fortune 500 Companies



Installations



Smart Energy Optimizers typically install in less than 60 minutes per each location.



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