EVOLVING Renewable Energy Business Models - Collaborative Technologies - Reasons for Optimism

HSI SOLAR

February 23, 2026

THE SKY IS NOT FALLING

THE FUTURE IS SUSTAINABLE

WELCOME TO THE NEW ENERGY ECONOMY

The new era of commercial real estate will include clean energy, smart design that anticipates innovation. The best properties will produce on-site electricity, generate energy in addition to rent, while creating favorable environment and financial impacts.

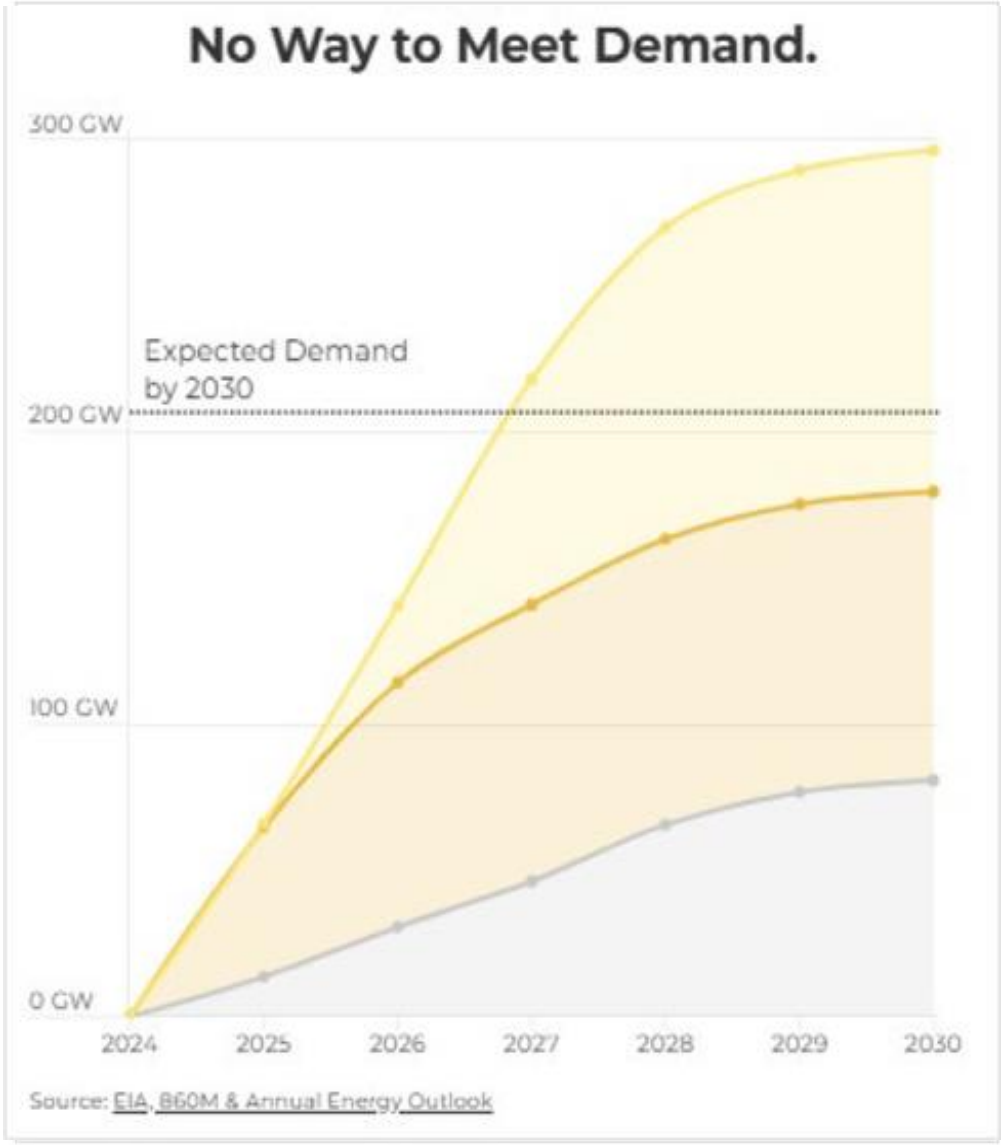
YOUR BUILDINGS ARE NO LONGER PASSIVE

They can produce, not just consume. They can yield, not just cost. They can become profit centers; resilient, independent, and ready for anything. The ones who get this now? They'll own the future. The rest? They'll be stuck with stranded assets and dying models.

THINK BEYOND THE BRICKS

Legendary returns come to those who see sustainability not as a sacrifice, but as a strategy. Your buildings can weather disruption, attract better tenants, and offer a healthier, more stable place to work and grow. Flip the switch, from liability to legacy. Because when you generate your own power, you're not just cutting costs. You're rewriting the rules.

THE SKY IS NOT FALLING



SEIA Solar Energy Industries Association

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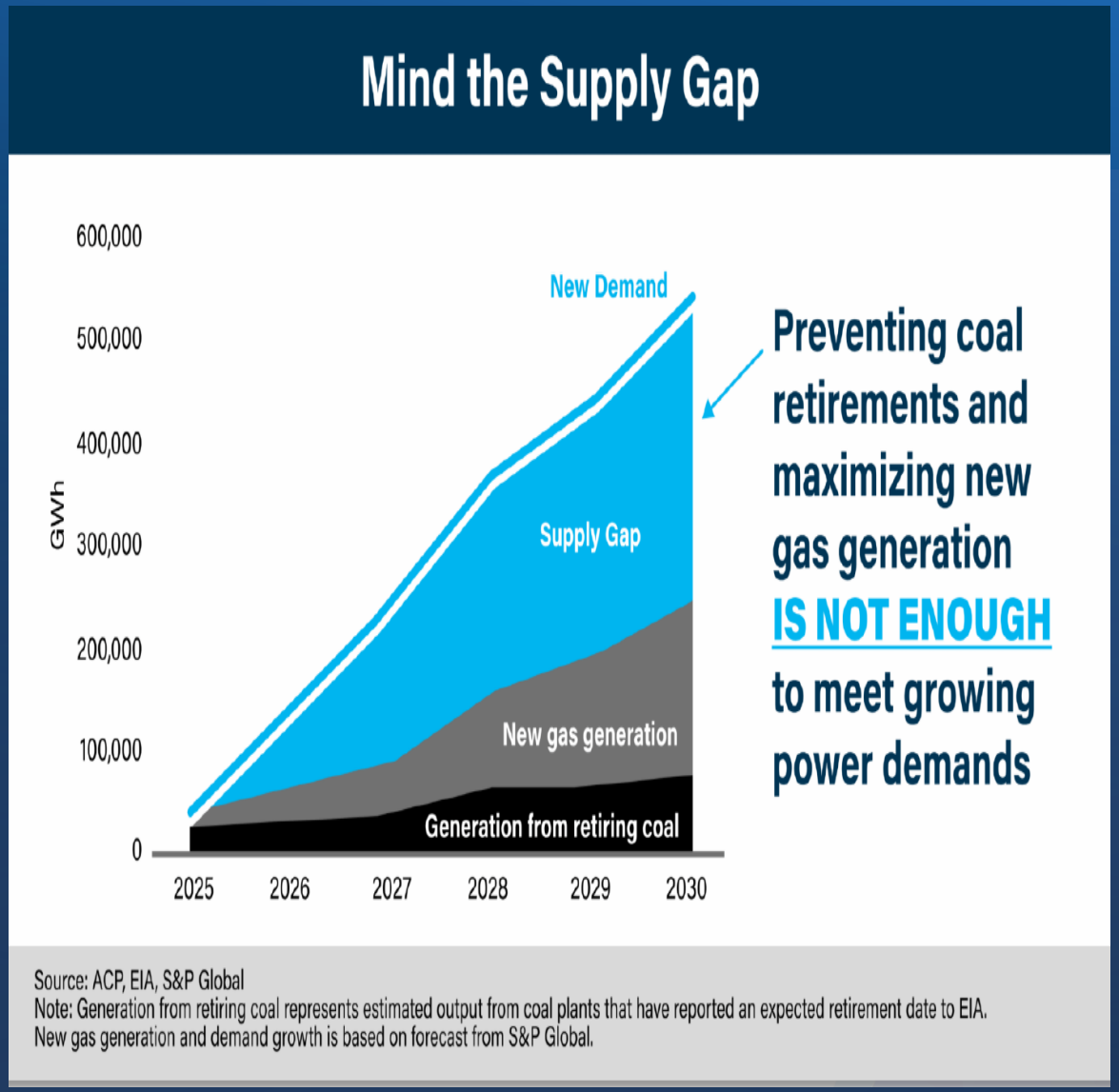
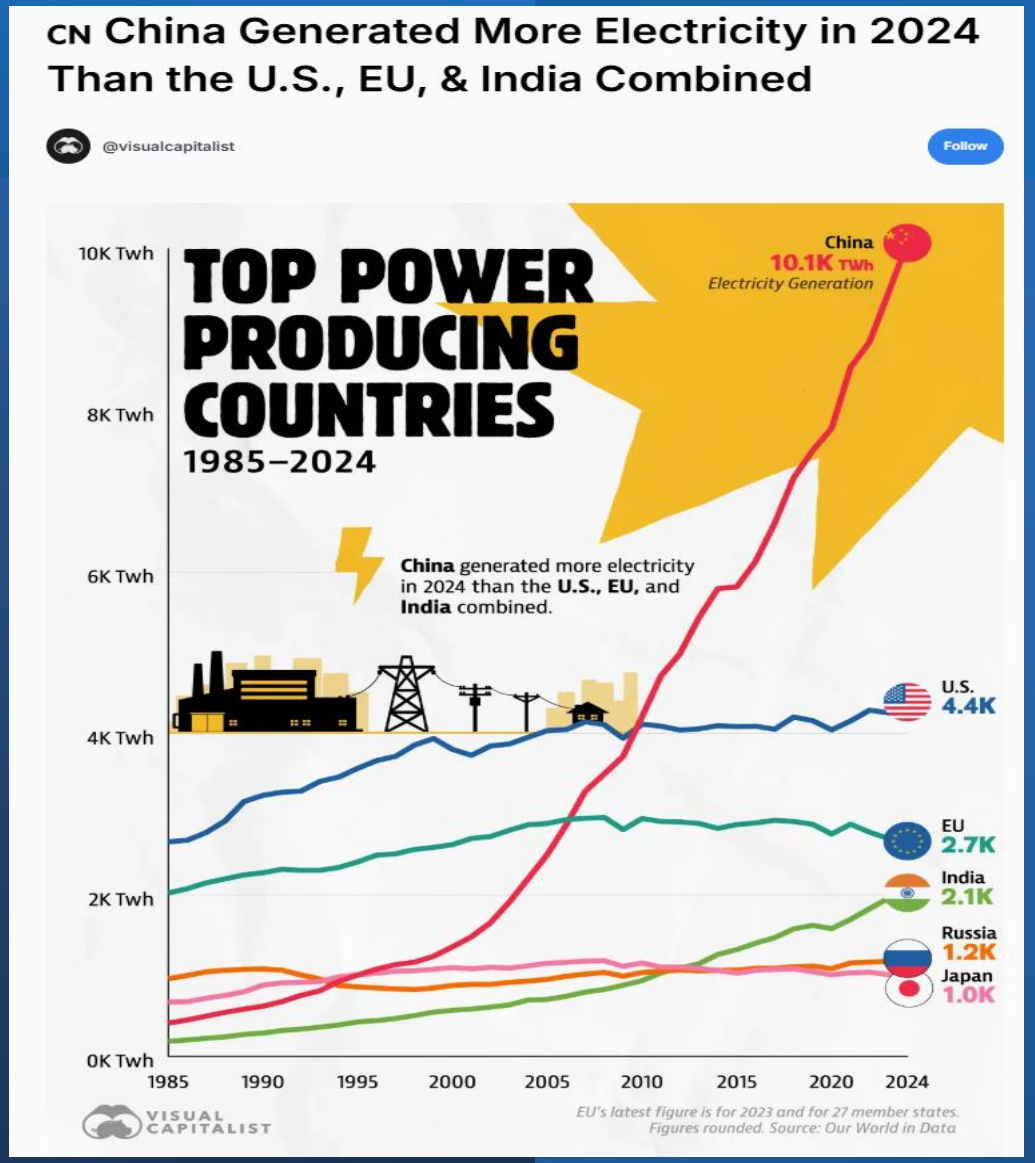




The Electricity Gap is a National Security Issue

Mexico could become data center hub, but clean power lags behind

Mexico is attracting US data centers seeking faster power connections, but these facilities will initially rely on firm gas generation from the Comisión Federal de Electricidad (CFE), with renewables as a potential future option, Mexican energy expert Santiago Barcón told pv magazine.

FEBRUARY 19, 2026 EMILIANO BELLINI

From pv magazine Global

Mexico is increasingly attracting industrial energy investments, particularly from data centers relocating from the United States, according to Santiago Barcón, CEO of PQBarcon.

There are bottlenecks in US electricity infrastructure, especially in states like Texas, where projects needing around 150 MW face connection timelines of up to seven years. This has made Mexico an attractive alternative, where power supply can typically be secured in about two years.

Missouri Department of Natural Resources seeks contractor to develop state energy plan

Proposals due Oct. 28

JEFFERSON CITY, MO, OCT. 15, 2025 – The Missouri Department of Natural Resources' Division of Energy is partnering with the Environmental Improvement and Energy Resources Authority to secure a contractor to develop a new Comprehensive State Energy Plan.

Today, the energy landscape is a diverse mix of fossil fuels, nuclear and renewable energy sources, with a significant shift to natural gas related to rapidly escalating energy demand. Federal executive orders have shifted the nation's energy policy focus to a reliable, diversified and affordable energy supply to drive manufacturing, transportation, agriculture and defense industries, and to sustain the basics of modern life and military preparedness. The department intends to develop a new energy plan to serve as the roadmap for state energy policy that positions Missouri to support economic growth and address emerging challenges, such as the rising demand from data centers.

NEWS: Missouri Department of Natural Resources seeks contractor to develop state energy plan

HISTORICAL SHIFTS IN INDUSTRIAL ELECTRICITY BILLING

Shift to Demand Charges

Demand charges have evolved from minor fees to major cost drivers in industrial electricity billing.

Billing Based on Peak Usage

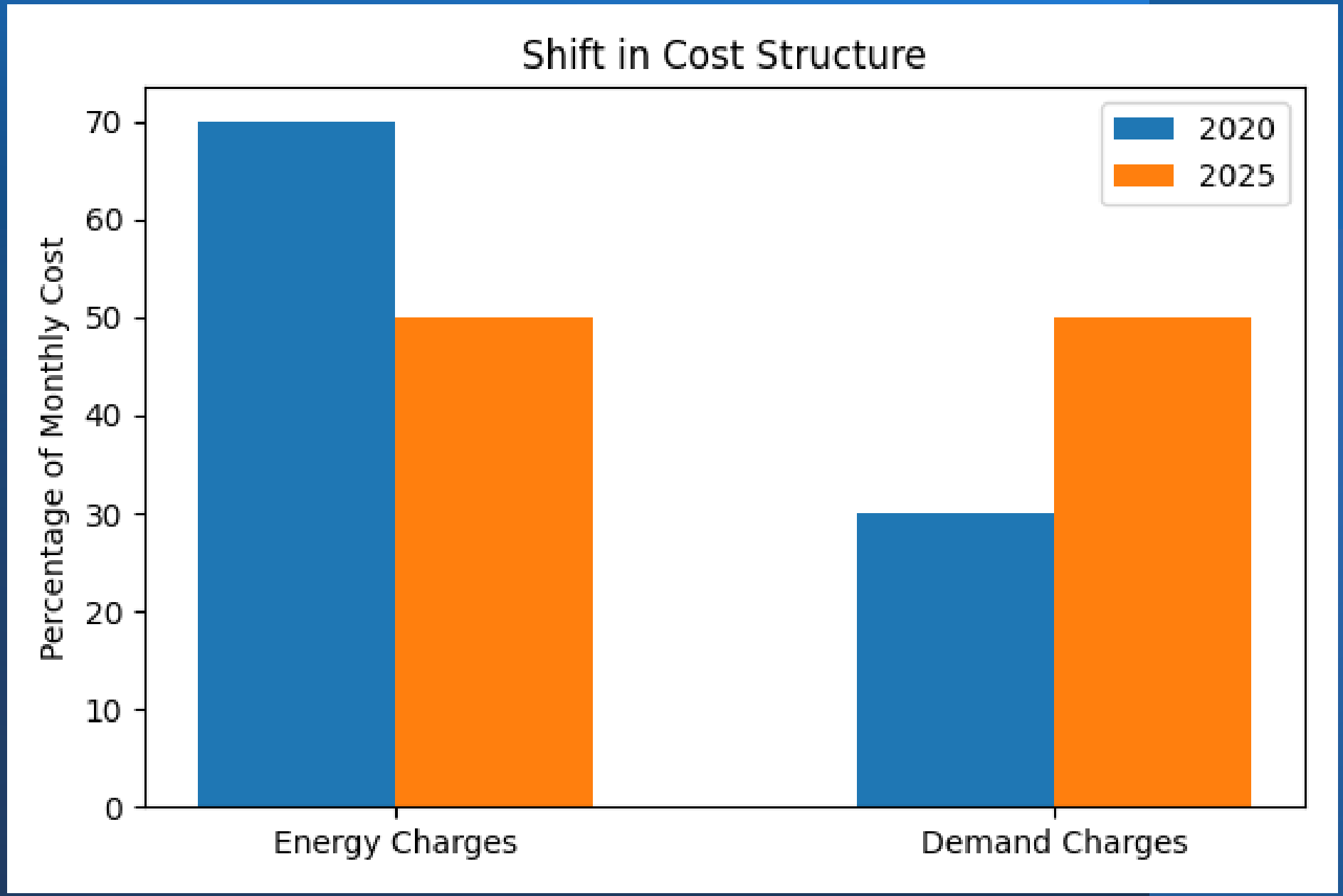
Utilities now emphasize short-term peak usage intervals to determine costs, not just total consumption.

Impact on Manufacturing Costs

Manufacturing facilities face higher costs due to heavy machinery and simultaneous equipment start-ups increasing peak loads.

Regional Variations in Rates

States with higher industrial electricity rates tend to have more aggressive demand-charge structures affecting costs.


Shift in Cost Structure
Percentage of Monthly Cost
0
10
20
30
40
50
60
70
2020
2025
Energy Charges
Demand Charges

Year	Avg. Industrial Demand Charge (U.S.)	Share of Total Electricity Cost	Source
2020	~$15/kW (typical)	~30–40%	NREL, Energy Initiative
2025	~$20–30/kW (common among major utilities)	~50–70%	NREL, Clean Energy Group

Sources:

Demand-Charge-Fact-Sheet.pdf

- NREL Utility Rate Database nrel
- Clean Energy Group Demand Charge Fact Sheet cleanegroup
- Energy Initiatives (2025) energyinitiatives

EXPANDED ADOPTION OF DEMAND-BASED TARIFFS

Growth of Demand-Based Tariffs

Utilities increasingly adopt demand charges reflecting real-time system stresses and capital costs.

Complex Tariff Designs

Tariffs now include seasonal peaks, coincident peaks, time-of-use blocks, and multi-tiered capacity charges.

Impact on Industrial Consumers

Manufacturers face higher electricity costs as demand charges become a major expense driver.

Financial Significance of Peak Management

Managing peak demand events is crucial due to increased demand charge rates during critical periods.

Benefits of Combining Solar and Wind Energy

Complementary Power Generation

- Solar works best during the day wind can generate power at night and in various weather conditions.

Increased Energy Reliability

- More consistent power supply by utilizing both solar and wind resources.

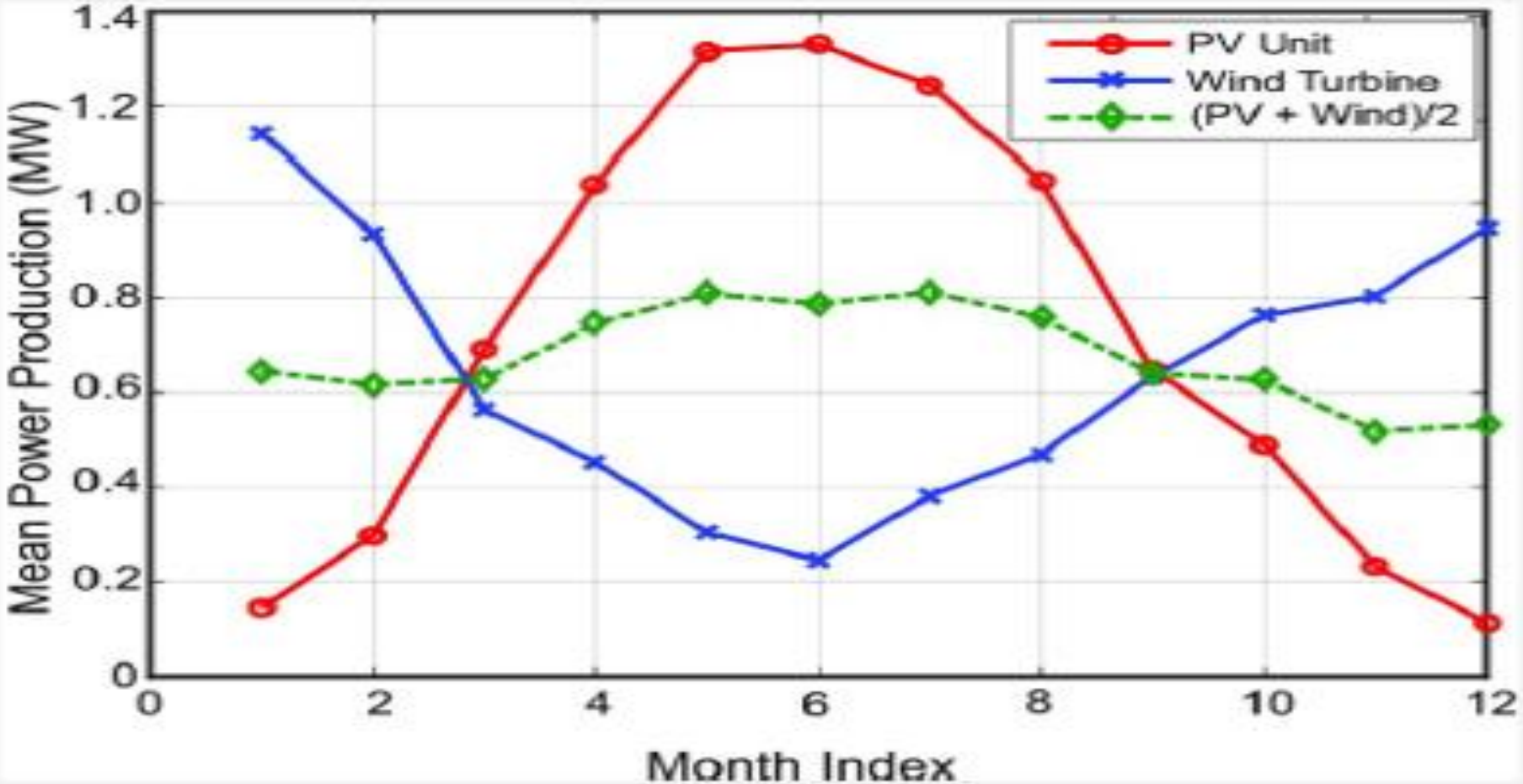
Optimized Land Use

- Maximizes energy output from the a single system reducing overall land footprint

Cost Savings & Sustainability

- Lower energy costs and reduce-rarbon emssions with collaborative renewable generation resources:

Solar and wind are complementary:



Wind Vs. Solar PV: different but complementary

Wind is extremely space-efficient

- Only need about ¼ acre
  - 40 times less land than equivalent solar
- Farms: allows ag practices to continue unabated

Wind can outperform Solar PV where there is good wind

- In terms of $ / kWh

But… **Wind and Solar PV are complementary !**

Energy density of wind > solar:

1 MW Wind	2 MW Solar PV
	
<1/4 acre	10 acres
2,800 MWh / year	2,600 MWh / year
Day & Night	Day only

Wind Flow : Turbulent Urban Aerodynamics

Urban Wind Flow Dynamics

Buildings cause complex airflow with turbulence, updrafts, shear layers, and vortices around rooftops.

VAWT Advantages in Turbulence

Vertical axis wind turbines use omnidirectional design to capture variable urban winds better than traditional turbines.

Optimized Turbine Placement

Wind accelerates at upwind building edges creating zones ideal for turbine placement to maximize energy harvest.

Rooftop Integration Considerations

Design must consider noise, vibration, and structural loading when deploying turbines on commercial rooftops.

"Rooftop solar will play a critical role in combating climate change, and small wind turbines or wind-solar hybrid systems can be just as cost effective—or better—than rooftop solar alone while expanding energy generation diversity. Competitiveness Improvement Project funding has been critical in facilitating testing and system optimization for continued development of the Sonsight 3.5-kW prototype wind turbine."

Devon Rocky McIntosh, president and CEO, Sonsight Wind

WHY ARE WE HERE ?
We Believe

Energy is one of the fastest Growing Service Industries

Renewable Energy is financially viable – **The Future is Sustainable**

Resilence against unexpected brown-outs and black-outs will become more important as grid outages and grid instability occurs more frequently.

Self-reliant electrical infrastructure is increasingly important and a necessity to businesses that need electricity to function.

Bottom Line: It's ALWAYS ABOUT THE #$$$ (ROI, IRR and Payback)

Combining Solar, Wind, or Hydro with Battery Energy Storage optimizes the performance from on-site energy solutions to reduce exposure to rising costs for electricity from the grid (including demand and time-of use rate tariffs).

Don't limit your challenges. Challenge your limits.

Collaborative Technologies - Reasons for Optimism

"**Collaboration is the key to our success**."

"To stand apart from the competition we must first stand together as a team."