



WHITE PAPER

# LOOKING TO LEAD

## A CASE STUDY OF HEALTHCARE AND ENVIRONMENTAL SUSTAINABILITY

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*How a National Healthcare Organization is Using Renewable Energy to Reduce Costs and Emissions*

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BRANHAM GROUP

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## INTRODUCTION

U.S. healthcare systems are among the nation’s most energy-intensive organizations, accounting for approximately 9% of total domestic carbon emissions. Globally, the U.S. healthcare sector represents 27% of the total healthcare carbon footprint - ranking it as the 13th largest carbon emitter in the world if it were a country.

To address these impacts, a leading energy infrastructure solutions provider partnered with a nationally recognized healthcare organization to deploy on-site solar photovoltaic (PV) generation. This project serves as a cornerstone for broader grid modernization reducing Scope 1 and Scope 2 emissions while improving operational resiliency for critical medical services.

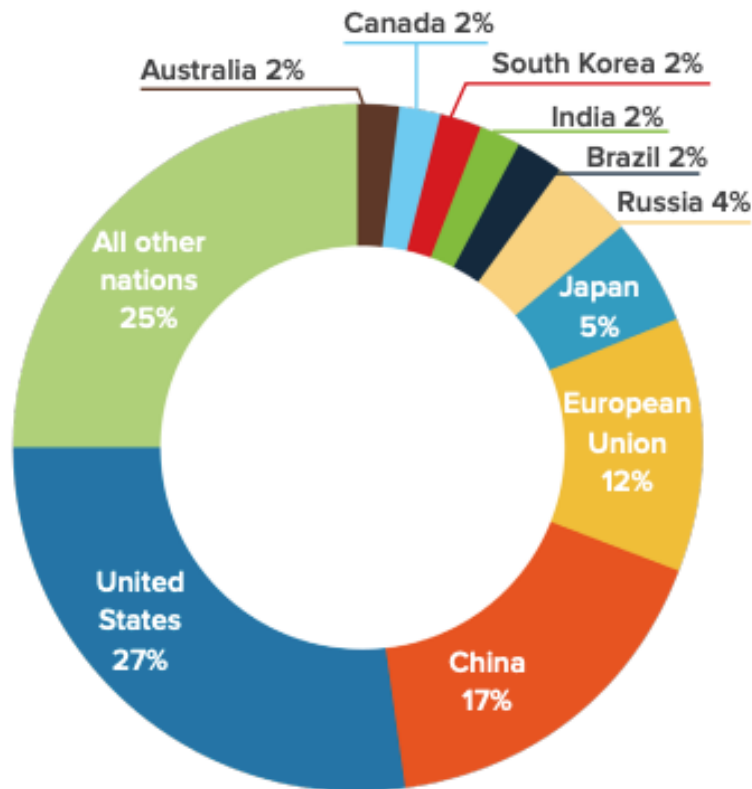


Figure 8: Top ten emitters as percentage of global health care footprint.



## BACKGROUND

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The client approached Branham Group with aggressive sustainability targets:

- **50% reduction** in Scope 1 and Scope 2 emissions by 2030
- **Carbon neutrality** by 2030
- **Net-zero emissions** by 2050

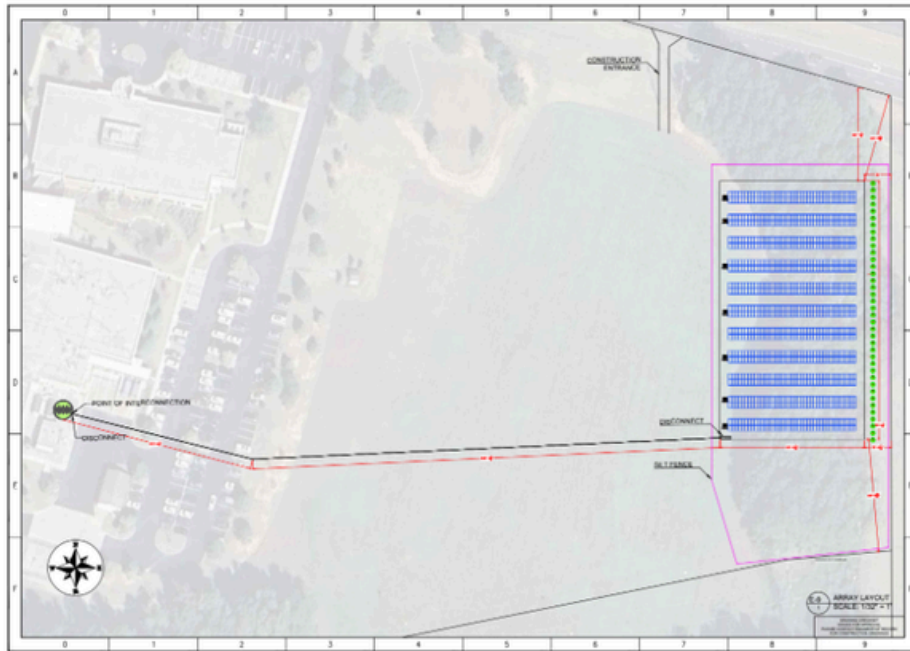
Hospitals operate 24/7 and require absolute energy reliability. Branham Group was engaged to design and install an on-site solar PV system at a major hospital campus to meet these decarbonization goals without compromising critical care operations.

## CHALLENGES

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The healthcare industry faces a “triple threat” regarding energy and environmental impact:

- **Emission Intensity:** Approximately 40% of global healthcare emissions stem from the generation and distribution of electricity, gas, heating, and cooling.
- **Grid Dependency:** Hospitals rely on centralized grids that are increasingly stressed by extreme weather and rising demand.
- **Financial Pressure:** Escalating energy costs and “peak demand” charges place additional financial pressure on healthcare providers.



## SOLUTION

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Branham Group implemented a facility-based solar energy system supported by modernized electrical infrastructure. The system utilizes a **zero-export approach**, ensuring 100% of the clean energy produced is consumed directly by the hospital facility to offset high-cost utility power.

### Key Technical & Economic Elements:

- **Capacity:** Over 692,000 kWh of annual power production
- **Annual Savings:** Based on average commercial healthcare rates, this system is projected to save the facility approximately **\$85,000 to \$110,000 in Year 1** energy costs
- **Lifetime Value:** Over a 25-year system life, the project is estimated to provide over **\$2.5 million in cumulative savings**, factoring in conservative utility price inflation
- **Integration:** Seamless connection with existing infrastructure to ensure uninterrupted power for the facility's critical requirements
- **Future-Proofing:** A modular design that allows for future expansion and improved grid modernization



## ADVANTAGES & SUPPORTING DATA

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Industry research and project modeling demonstrate that on-site solar delivers measurable value across environmental, operational, and financial dimensions:

- **Emissions Reduction:** Offsets approximately **490 metric tons of CO<sub>2</sub> annually** - equivalent to the carbon sequestered by 580 acres of U.S. forests in a single year
- **Cost Stability:** Provides predictable, long-term energy expenditures that serve as a permanent hedge against volatile utility market spikes
- **ROI & Incentives:** With federal incentives like the Investment Tax Credit (ITC), similar healthcare installations typically achieve full ROI within **5 to 7 years**, providing nearly two decades of essentially free energy thereafter
- **Operational Resiliency:** Enhanced reliability for mission-critical medical services during grid disruptions, ensuring patient safety remains uncompromised



## ADVANTAGES

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The proposed solution delivers measurable value across environmental, operational, and financial dimensions:

- **Emissions Reduction:** Lower Scope 1 and Scope 2 emissions aligned with climate goals
- **Cost Savings:** Reduced long-term energy expenditures and hedge against utility price volatility
- **Resiliency:** Enhanced reliability for mission-critical healthcare operations
- **Sustainability Leadership:** Demonstrates commitment to environmental stewardship and public health

Compared to continued reliance on grid electricity, on-site solar offers a lower-carbon, more resilient, and increasingly cost-effective alternative.



## CONCLUSION

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Healthcare organizations play a critical role in addressing climate change. By investing in on-site renewable energy and grid modernization, providers can significantly reduce emissions while strengthening operational resiliency.

Branham Group recommends:

- **Expanding** on-site renewable generation across facility portfolios where feasible
- **Integrating** energy planning into long-term capital strategies to stabilize operational budgets
- **Leveraging** clean energy projects to meet both aggressive sustainability targets and bottom-line financial objectives

These actions position healthcare organizations to lead in environmental sustainability while protecting both patient health and operational continuity.





## SOURCES

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- *Health Care Without Harm and Arup. "Health Care's ClimateFootprint: How the Health Sector Contributes to the Global Climate Crisis and Opportunities for Action." September 2019.*
- *U.S. Environmental Protection Agency. "Greenhouse Gas Equivalencies Calculator." February 2026.*

## CONTACT INFORMATION

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