

The purpose of this presentation is to guide programs benefiting the copper industry and to provide attendees with information to make independent business decisions.



HVAC TRENDS

Hakan Yilmaz

SVP, Chief Technology & Sustainability Officer

HVAC Demand Meets Increasing Urgency

Secular Trends



**Climate
Change**

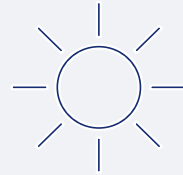


**A Growing
Middle Class**



Digitalization

Societal Needs



8%

of the 2.8 billion people
living in the hottest parts of
the world have A/C



3X

Increased energy demand
for space cooling by 2050

Environmental Impact



~15%

Global greenhouse gas emissions
originate from HVAC Industry

Smart & Connected HVAC Systems

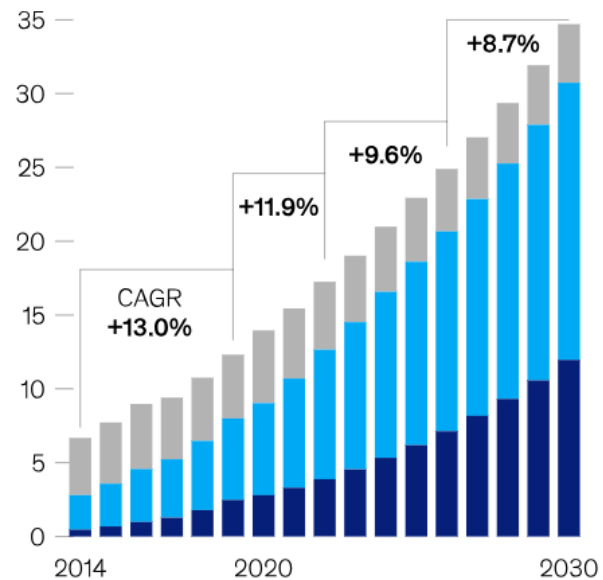
- ✓ Predictive Maintenance
- ✓ Monitor Indoor Air Quality
- ✓ Optimize Energy Use



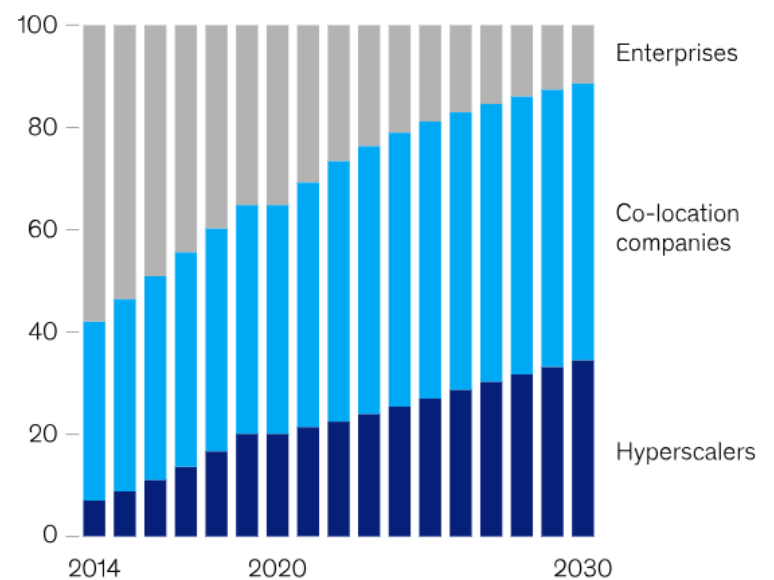
Growing Data Center Market

US data center demand is forecast to grow by some 10 percent a year until 2030.

Data center power consumption, by providers/enterprises,¹ gigawatts



Data center power consumption, by providers/enterprises,¹ % share

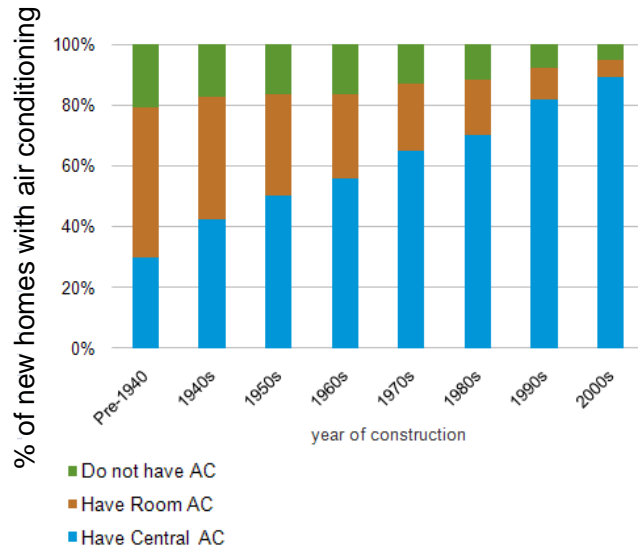


¹Demand is measured by power consumption to reflect the number of servers a data center can house. Demand includes megawatts for storage, servers, and networks.

McKinsey & Company

Evolution of U.S. HVAC Industry

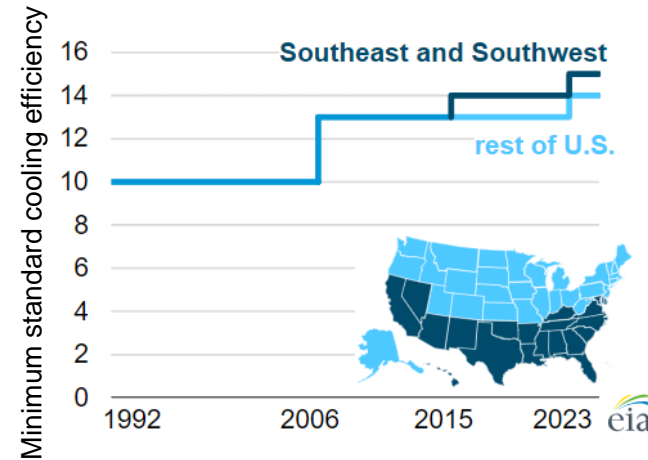
Increase in Central HVAC



COMFORTABLE

1902 to Present

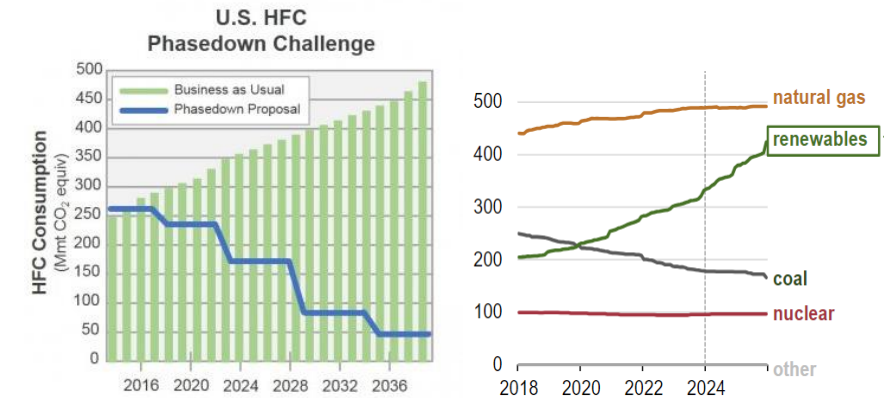
Performance Standards



EFFICIENT

1975 to Present

Low GWP Refrigerants & Renewable Energy



SUSTAINABLE GRID

Future

What's Next with HVAC Regulations?

Inflection Point Coming for Energy Grid

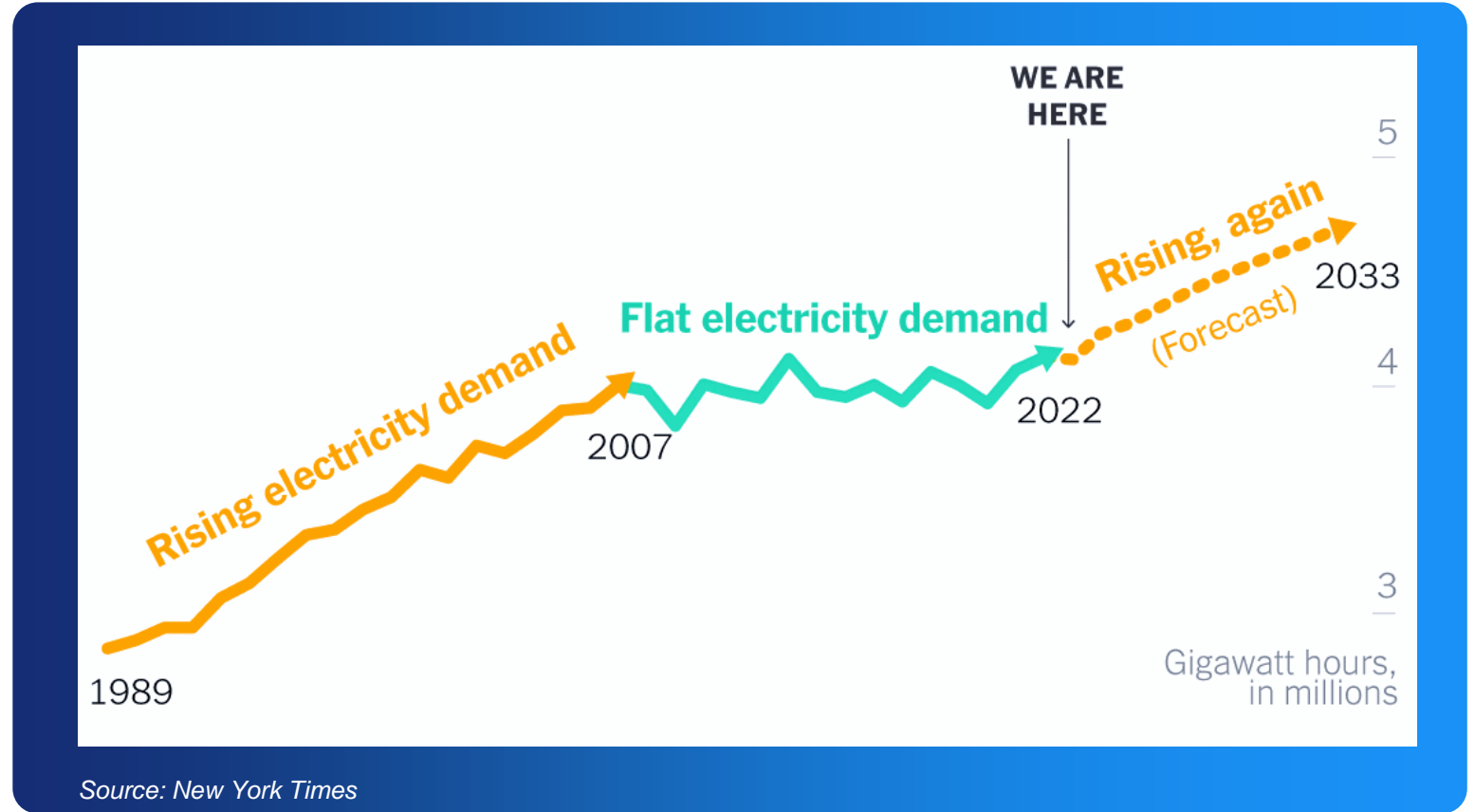
WSJ | OPINION

The Coming Electricity Crisis

Artificial-intelligence data centers and climate rules are pushing the power grid to what could become a breaking point.

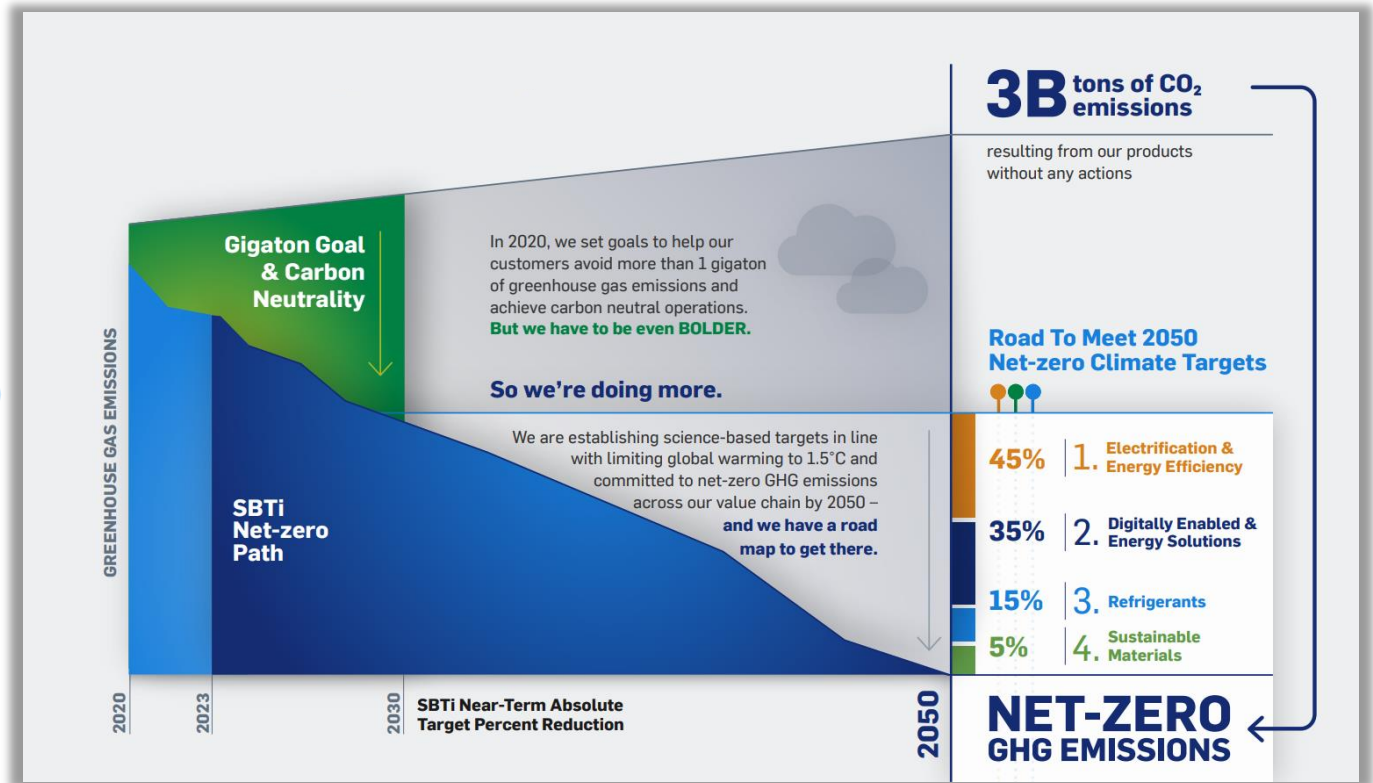
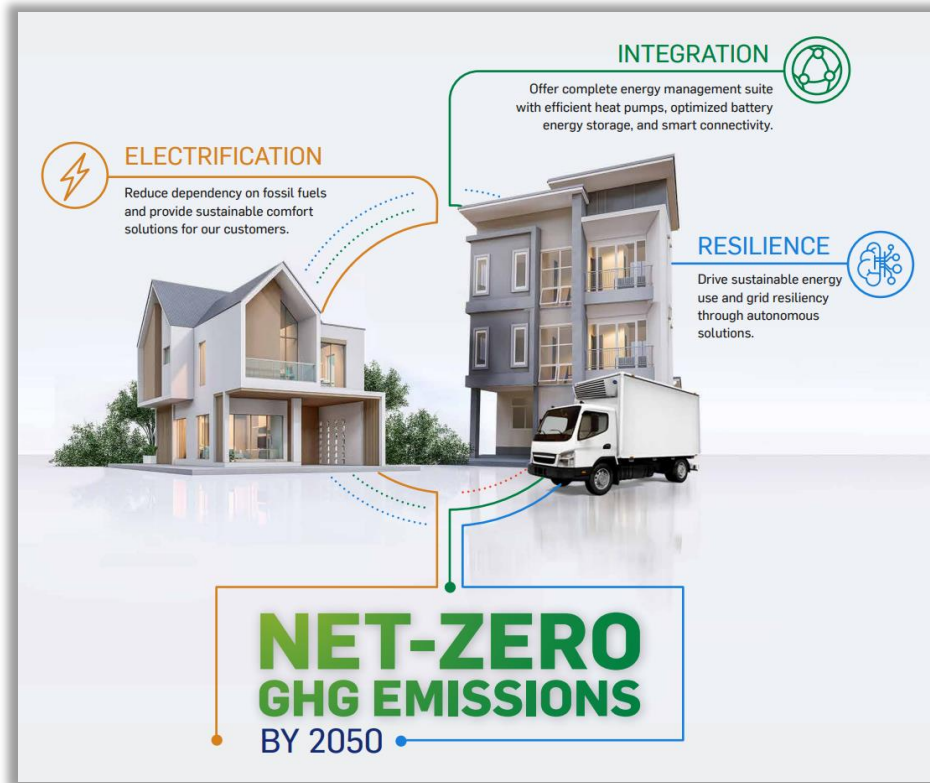
By 2030

- Demand will grow (EV, HP, Data Centers)
- ~115 GW Fossil Fuel Capacity will be retired
- Renewables grow from 30% to 46%
- Total U.S. energy gap at peak demand ~78B kwh (= ~10M cars annual charging)



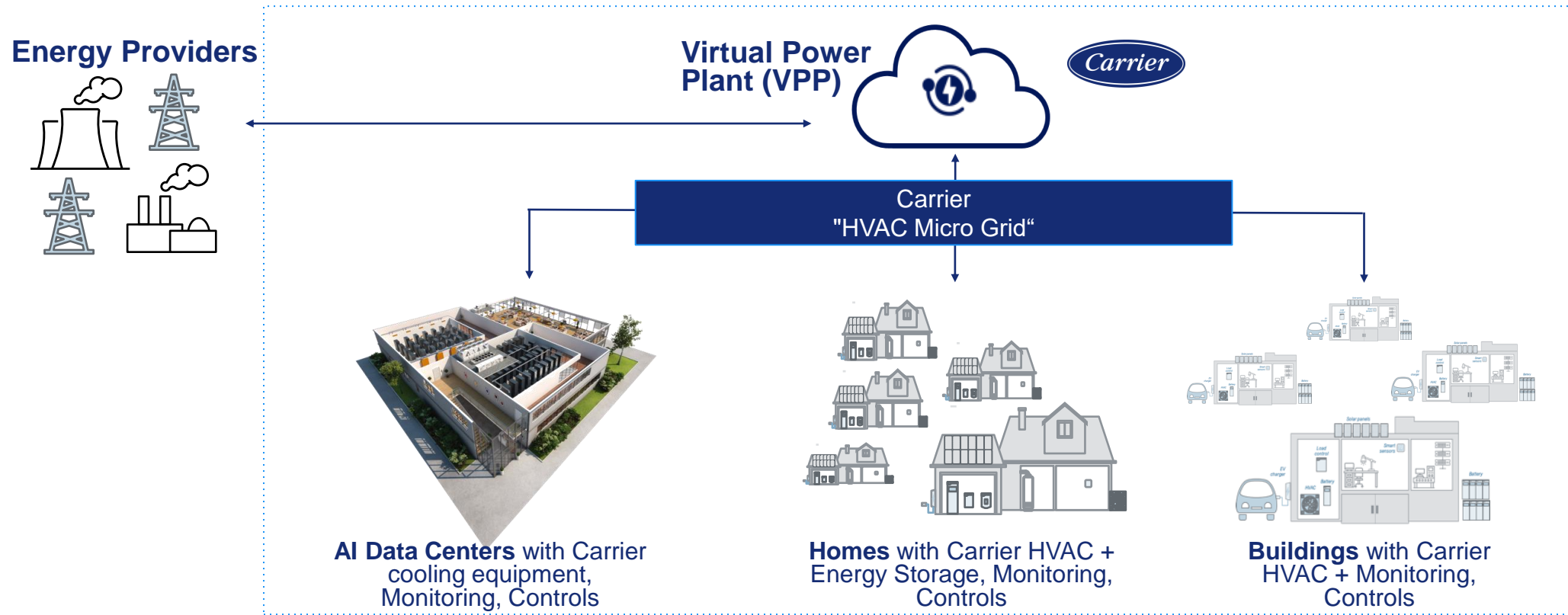
Electricity Demand & Sustainability Could Push the Power Grid to a Breaking Point

Strategies for a Sustainable Path Forward



Evolving our Business to Take on the Challenges of Climate Change

HVAC will Play a Key Role in Energy Balancing



Carrier Solution Supports Energy Balancing, integrating Data Centers, HVAC, Energy Storage



The global leader in intelligent
climate and energy solutions.

For people, our planet
and generations to come.



