



On-Site Power Solutions

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UTC Power

A United Technologies Company



United Technologies Corporation

\$52 Billion Sales
DOW 30
Industry Leaders



UTC Fire & Security



Pratt & Whitney



Carrier



Otis



Sikorsky



Hamilton Sundstrand



Research Center



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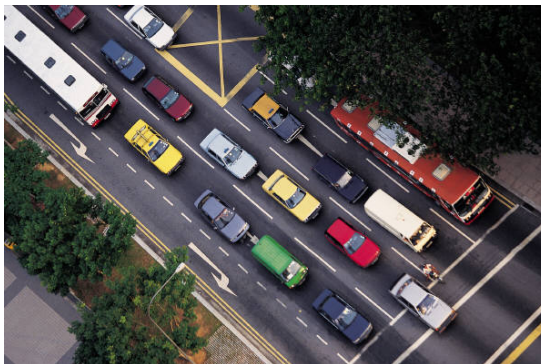
UTC Power

Markets

On-site power solutions



Transportation fuel cells



Space & defense fuel cells



Global sales



5 continents
19 countries



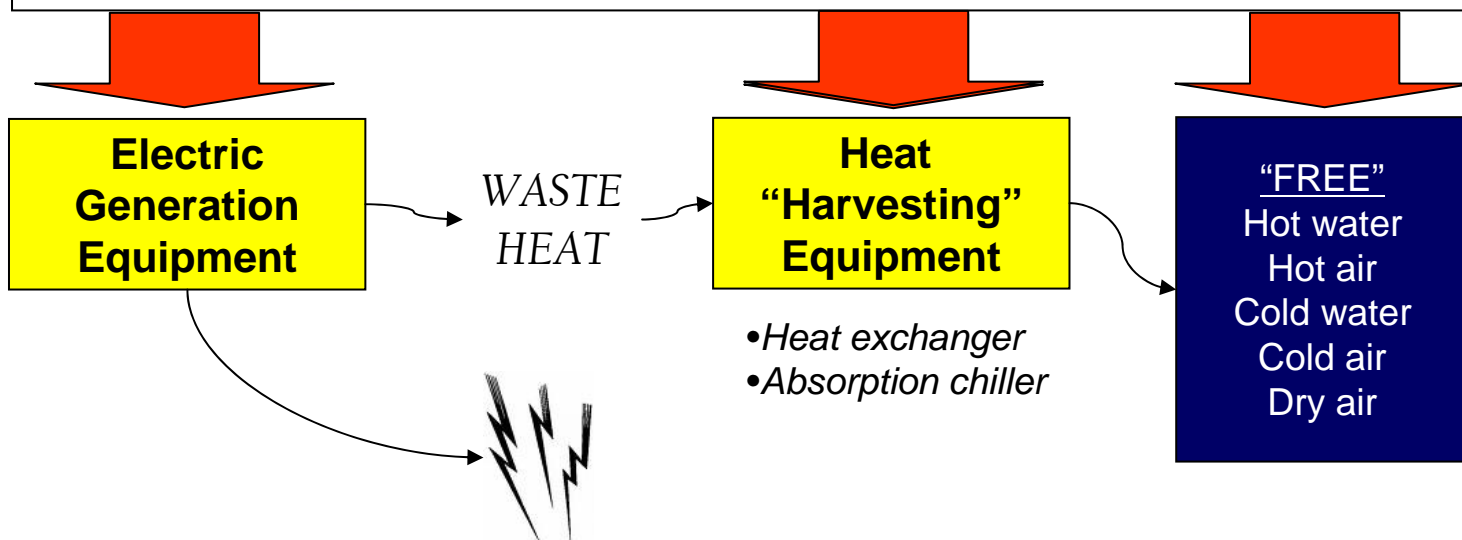
What is Combined Heat and Power (CHP)?



PureCell™ fuel cell system

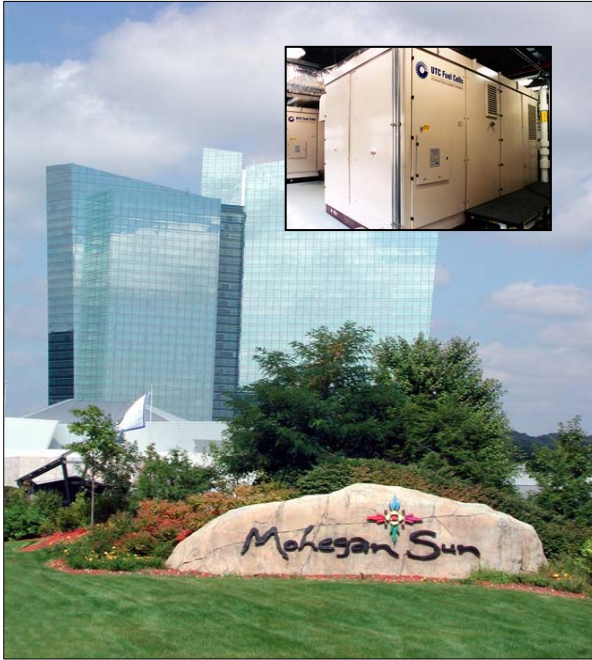


PureComfort® microturbine system





CHP is Distributed Power Generation that . . .



Uncasville, CT

- Operates around the clock
- Provides at least a portion of the building's electrical load
- Captures thermal energy for use in:
 - cooling
 - dehumidification
 - water and space heating
 - process heat



Centralized vs. Distributed

1977 Worldview

“There is no reason anyone would want a computer in their home.”

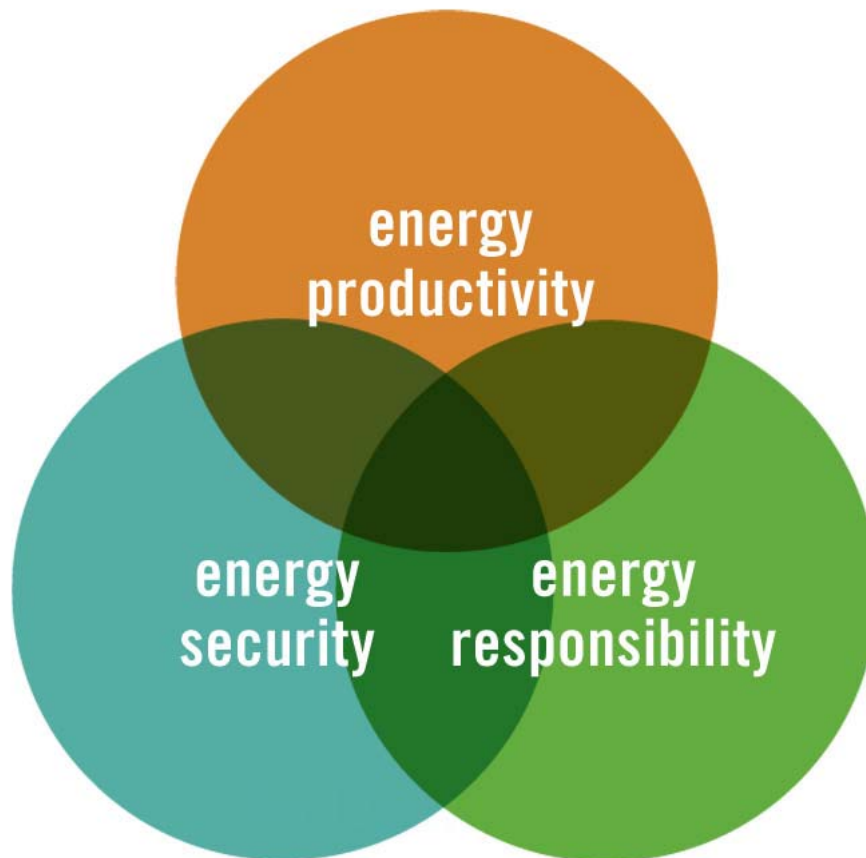
Ken Olsen

CEO and Co-founder of Digital Equipment Corp.



Why Use CHP?

The UTC Power Advantage



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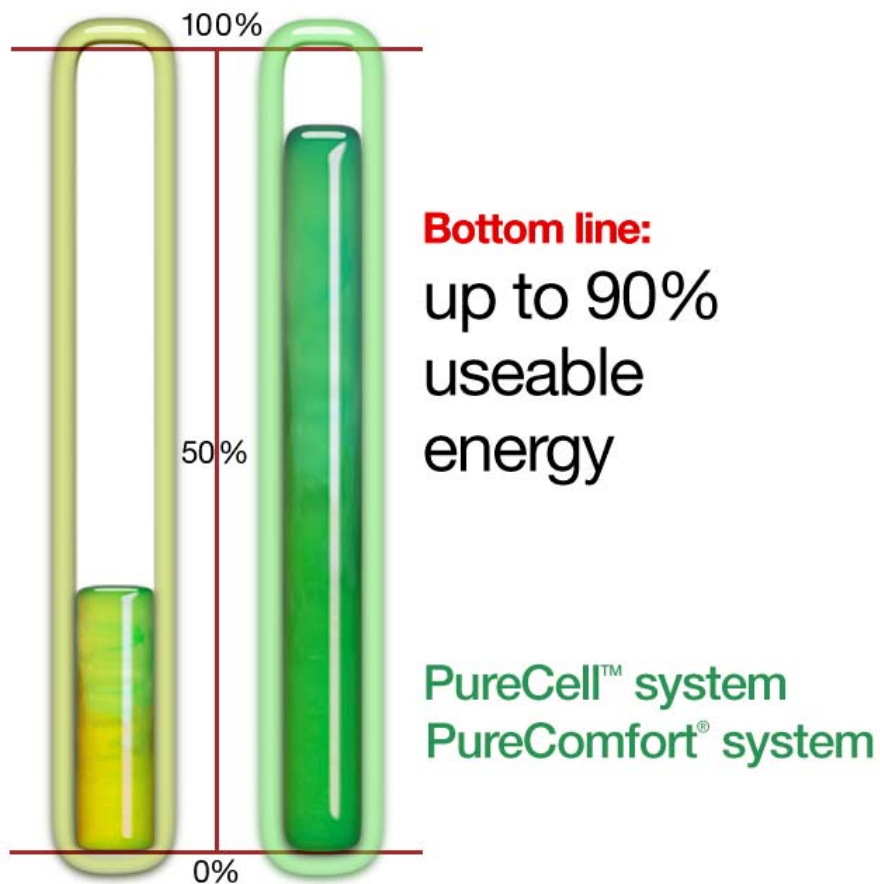
Energy Productivity



The Grid

Bottom line:
only 33%
useable
energy

Energy Productivity Report

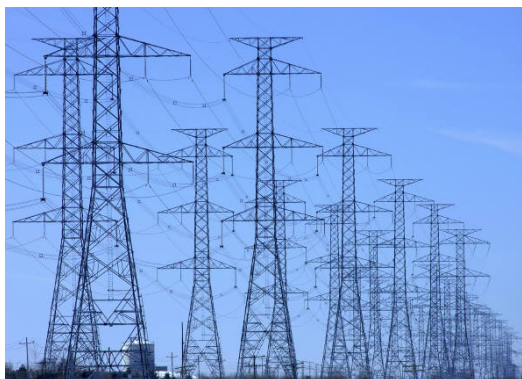




Energy Security



- Grid independence
- Critical load backup
- Power quality/security



Infrastructure issues



Disasters and disruptions



Energy Responsibility



CO₂

NO_x

Annual air emission reductions

100
PureCell™ 200
systems



100
PureComfort® 360M
systems

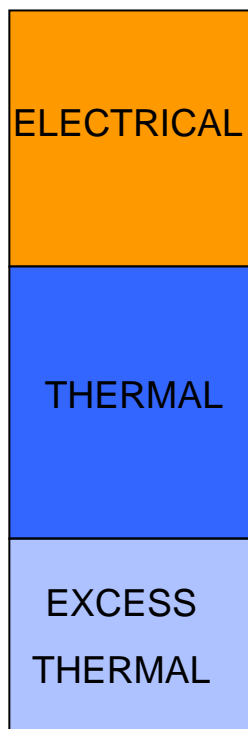


Additional emissions reductions with respect to sulfur dioxide, mercury, and other air pollutants



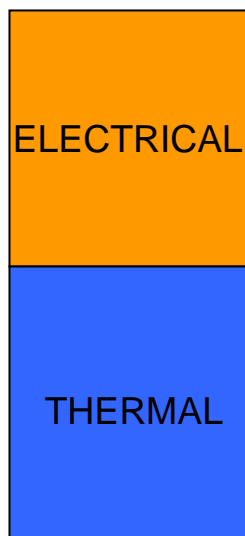
CHP System Design Options

HIGHEST
RELIABILITY
OPTION



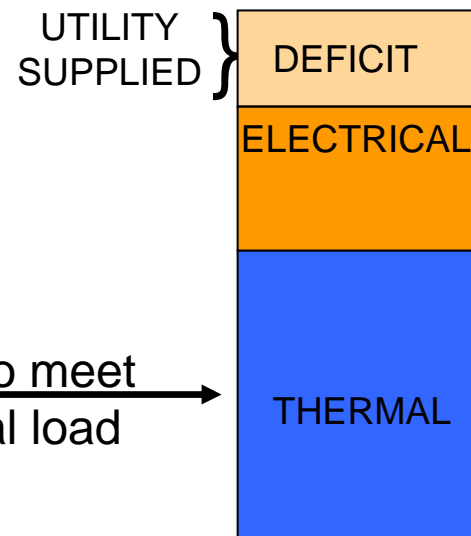
Sized to meet
electrical load

FACILITY
DEMAND



Sized to meet
thermal load

HIGHEST
EFFICIENCY
OPTION





Commercial CHP Candidates

- Hotels
- Prisons
- Airports
- Hospitals
- Universities
- Data Centers
- Grocery Stores
- Office/ Mixed Use
- Wastewater Treatment
- Refrigerated Warehouses
- Homeland Security & Shelter Locations
- Industrials (Refineries, Chemical plants, Manufacturers)



4 Times Square
*First Green Building
in U.S.*



PureComfort® Solutions

Combined cooling, heating & power

WAL*MART



Dimensions (L x W x H) = 28' x 21' x 16'

Each Package Provides

- Up to 390 kW electrical power
- Up to 200 RT cooling
- Up to 1,900 MBh heating
- Dual-mode capability

Benefits:

- Year-round savings
- Cooling efficiencies up to 93%
- Pre-engineered solution



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PureComfort® Solutions

Flexible installation



Mount Kisco, NY
240 kW, 120 RT¹
Roof-mounted skid



Mississauga, Ontario
240 kW, 120 RT¹
Indoor mechanical room



Simi Valley, CA
960 kW, 420 RT¹
Outdoor installation



San Francisco, CA
240 kW, 120 RT¹
Outdoor installation



Providence, RI
240 kW, 120 RT¹
80 kW Trigen
Indoor mechanical room



Aurora, CO
360 kW, 160 RT¹
Outdoor installation

¹ RT = refrigeration tons



PureCell™ Fuel Cell Solutions

Combined heating & power



SAINT FRANCIS Care

Responding to the scriptural call to heal

Hartford, CT



Fuel Cell/ Heat Exchanger

Each Unit Provides

- 200 kW electrical power
- Up to 850 MBh heating
- Grid connect/ grid independent capability
- Load following capability

Benefits:

- Year-round savings
- Systems efficiencies up to 90%
- Pre-engineered solution
- No water required to operate



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First National Bank of Omaha – Data Center

- Commissioned 1999
- High quality power
- Off-grid capable
- 99.999995 availability





Verizon – Telecommunications Center



- Commissioned 2006
- Cooling, heating and power
- Off-grid capable





But Wait, There's More...

- Remote monitoring 24/7 at central service center
- No capital outlay with full maintenance
- State/ Federal Incentives
- Potential for LEED® points



LEED Credits for Energy Efficiency

Environmental stewardship

- Leadership in
- Energy and
- Environmental
- Design



- On-site CHP, 4-6 LEED points in three areas:
 - Energy efficiency 2-4 pts (10 pts possible)
 - Non-ozone depleting refrigerants 1 pt (1 pt possible)
 - Innovative design 1 pt (3 pts possible)



Summary

UTC Power distributed energy solutions

- Reduce greenhouse gas emissions
- Utilize energy more efficiently
- Provide 24/7 premium power





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