

# Introduction to ENtrust

- Developer of end-user CHP projects
- Experience:
  - from a few hundred Kw to 1,000 MW
- Scope of Services:
  - Conceptual design
  - Environmental assessment & siting
  - Detail design
  - Financing
  - Construction
  - O&M





# Project Characteristics

- Niagara Mohawk electric service
- NYSEG gas transportation service
- Dual fuel boiler system
- Existing natural gas CHP system (grandfathered)
- Emergency back-up diesel generators





# Project Requirements

- Grid Isolation (1<sup>st</sup> Hospital in NYS)
- Reliability
- Redundancy
  - Generation system
  - Distribution system
  - Fuel system
- Economics

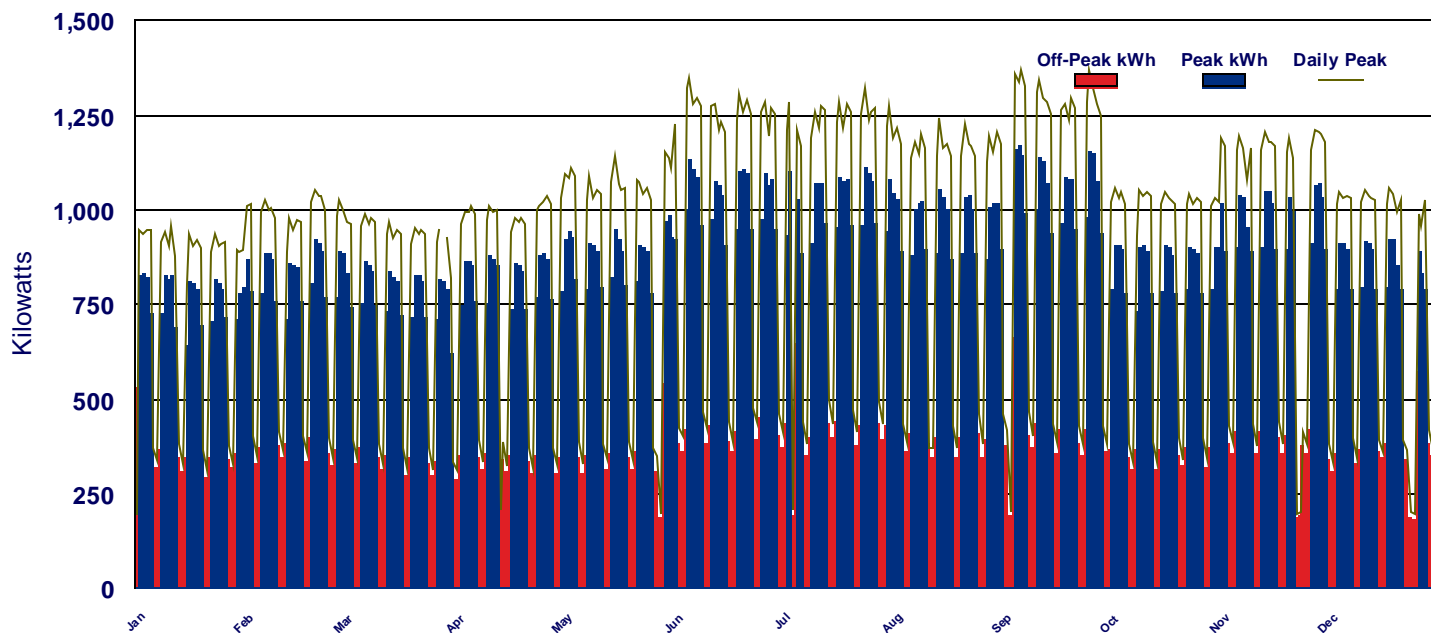




# Project Requirements

- 1.25 MW Peak Electric Load

Seasonal Load Profile



Energy Savings Through  
Intelligent Alternatives

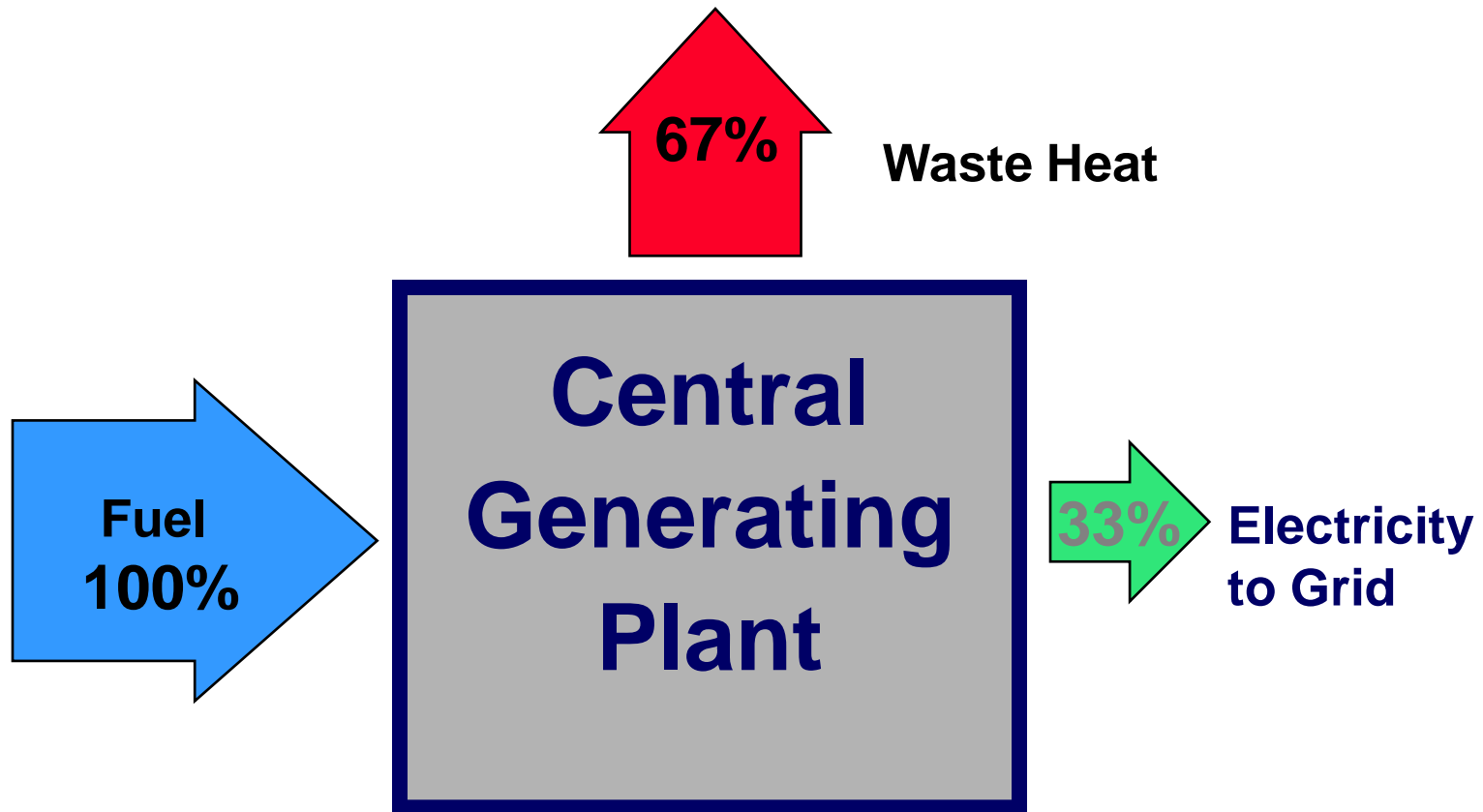


# Project Configuration

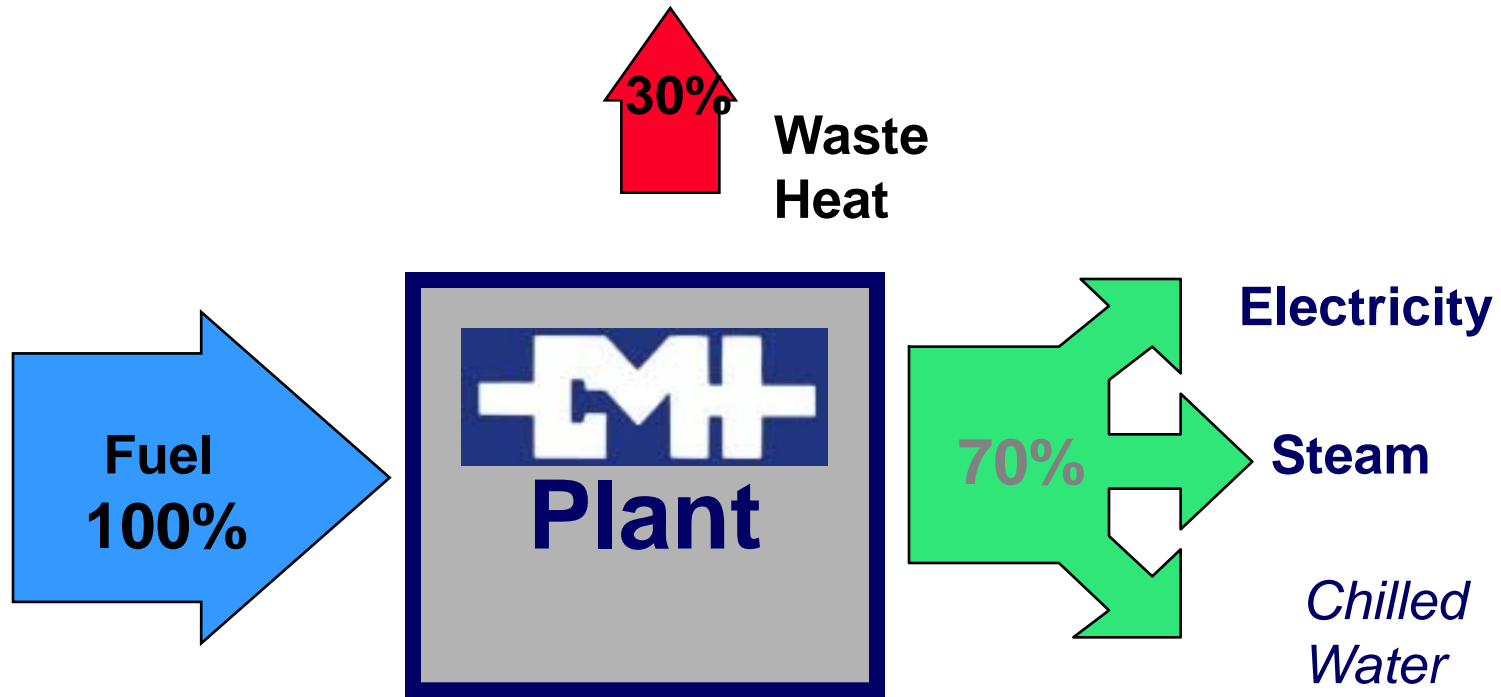
- Primary System
  - 3 - 540 kWe Waukesha Natural Gas Fueled Prime Movers
  - 2 - 878,000 Btu/hr. VaporPhase Heat Recovery Steam Generators
  - 1 - 1,121,000 Btu/hr. VaporPhase Heat Recovery Steam Generator
- Secondary System
  - 3 - 500 kWe SDMO Diesel Fueled Prime Movers
- Parallel Feed Distribution System



# Why CHP Works - Economically



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# System Efficiency

	kWh	mmBtu	Thermal Efficiency
Electric	7,000,000	23,900	29.8%
Exhaust & Jacket Water		33,800	29.1%
Total Efficiency			71.9%



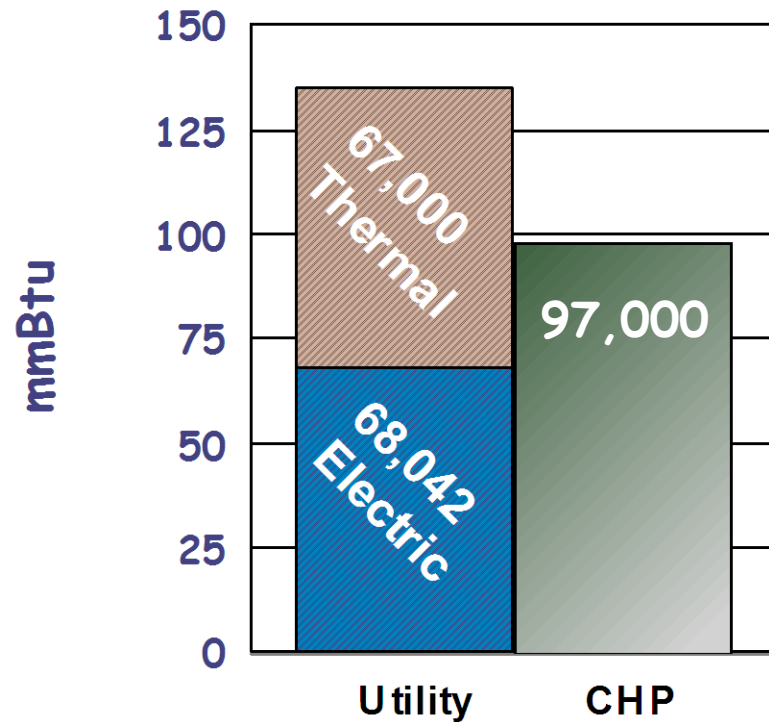
Energy Savings Through  
Intelligent Alternatives



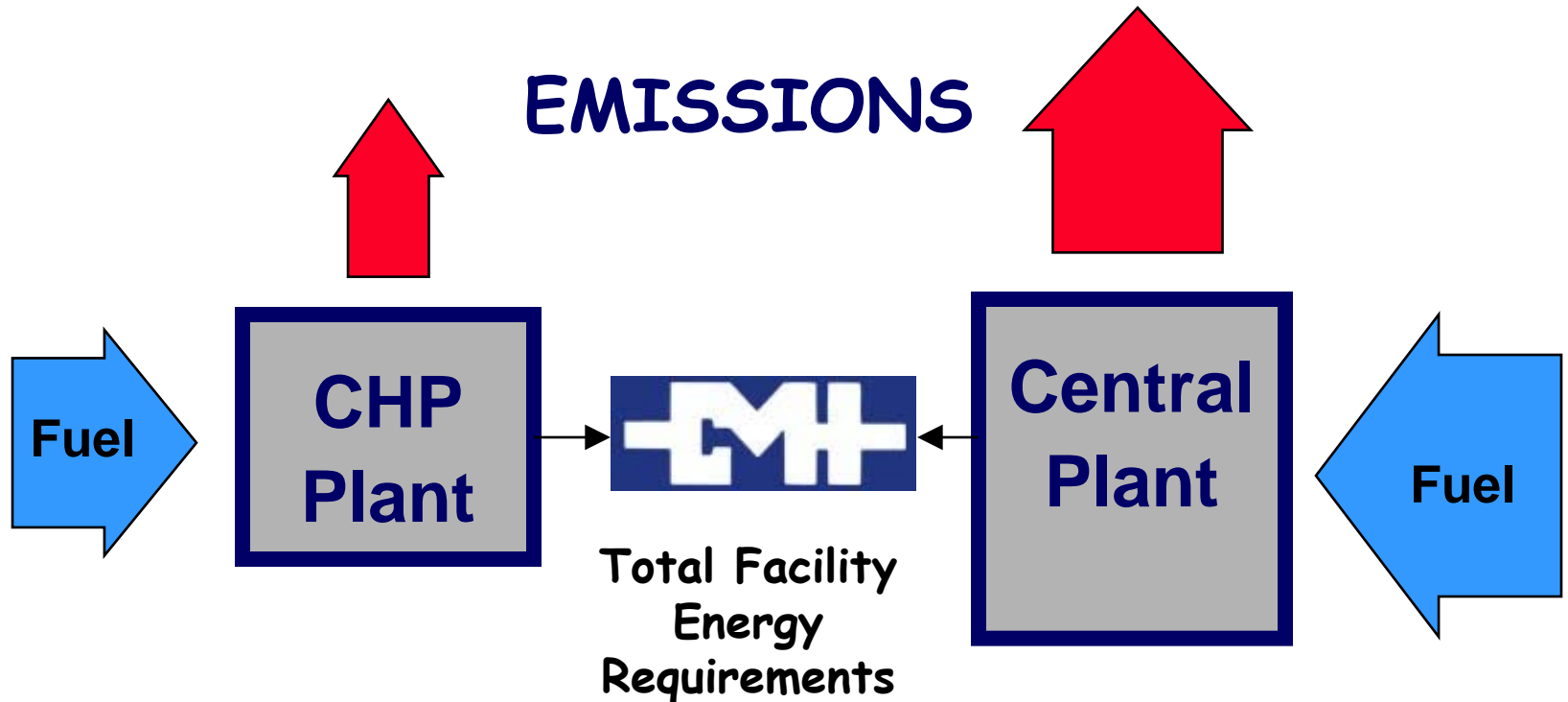


# Energy Conservation

## CMH Total Energy



# Why CHP Works - Environmentally





# Project Schedule

**Project Finance & Admin.**

**CMH Tasks**

**Environmental**

**ENtrust Tasks**

**Distribution System**

**Prelim Design**

**Electric Installation -Distribution**

**CHP System - COGEN**

**Detail Design & As Built**

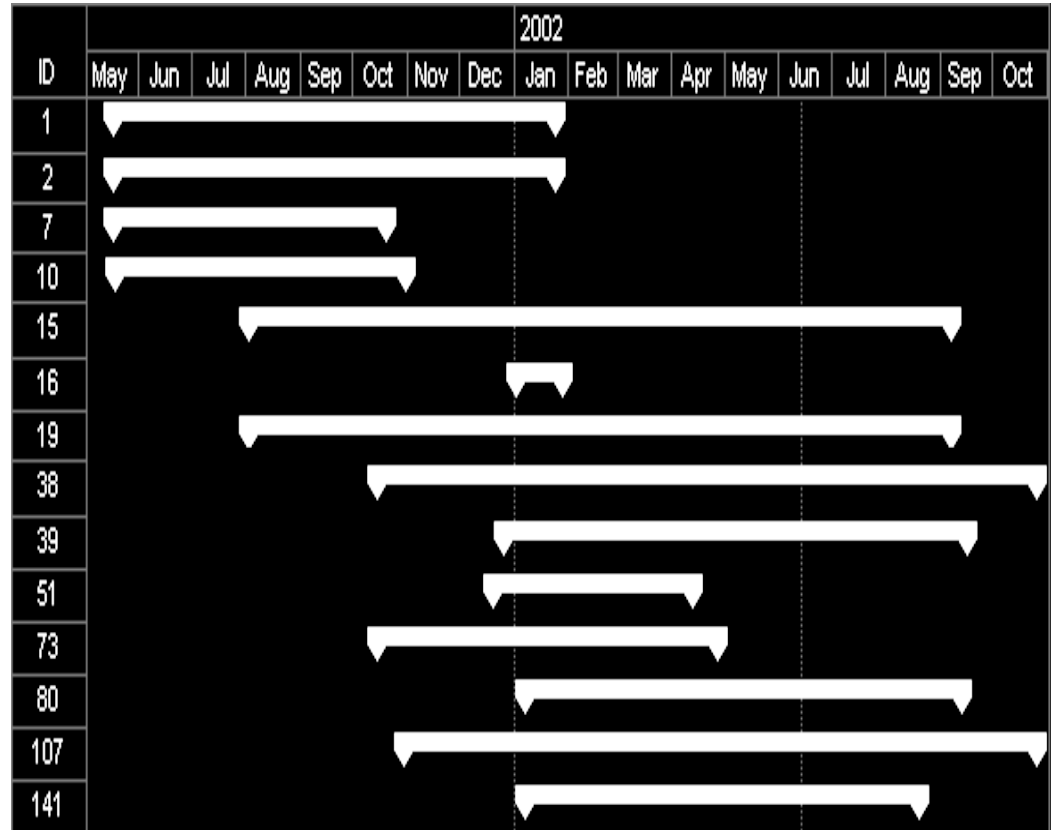
**Building construction**

**CHP Site Prep**

**MERIT - Electric Installation**

**KRAFT - Equipment Delivery & Test**

**Installation & Commissioning**





Energy Savings Through  
Intelligent Alternatives

# When CHP Works Best

- Year round use for thermal energy
- High electric Load Factor
- No large demand spikes
- Utility as standby or supplemental service
- Top management committed to energy cost management



# Benefits of CHP

## To CMH

- Lower Energy Cost
- Energy Price Stability
- Improved Reliability
- Improved Power Quality

## To NYS

- Energy Conservation
- Reduced Emissions
- Reduced need for  
New Generation  
New Transmission

