



December 10, 2009

Wyoming Pipeline Authority Happy Jack Wind Farm

Improving life with energy

Cheyenne Light
Fuel & Power

Black Hills Corporation

An integrated and diversified energy company

Utilities

Gas Utilities

Colorado Natural Gas

Iowa Natural Gas

Kansas Natural Gas

Nebraska Natural Gas

Electric Utilities

Black Hills Power

Cheyenne Light, Fuel & Power *

Colorado Electric

Non-Regulated Energy

Coal

Wyodak Resources

Oil & Gas

Black Hills Exploration & Production

Power Generation

Black Hills Electric Generation

Energy Marketing

Enserco Energy

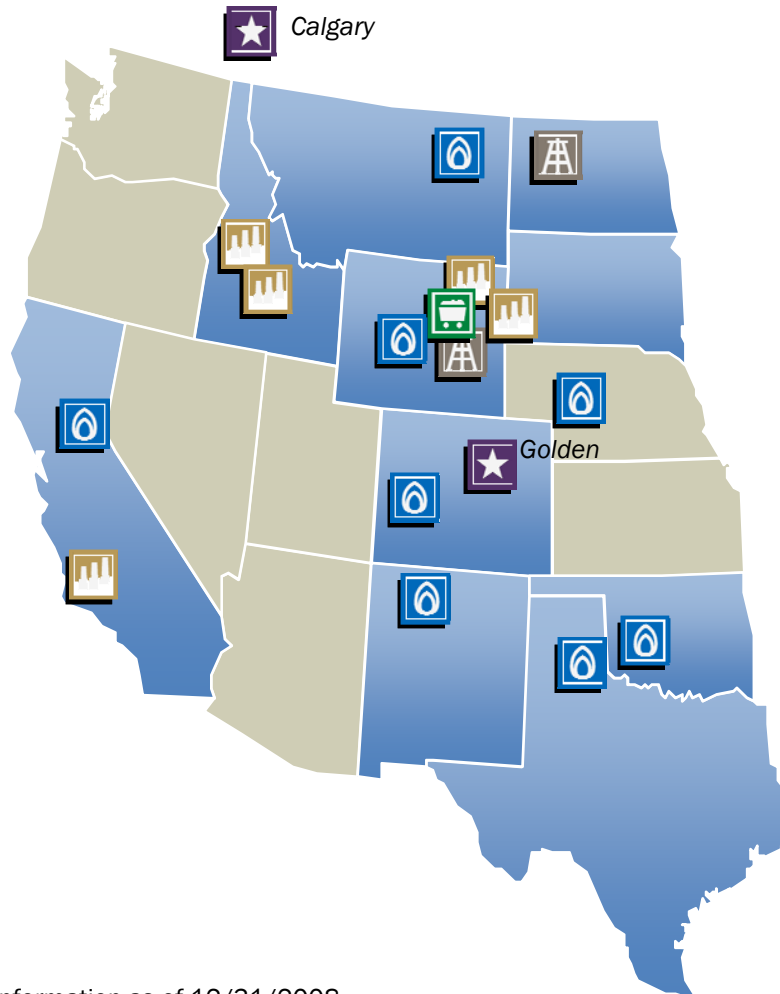
Fuel, Generation, and Utilities

* Supplies electric and gas utility service to Cheyenne, Wyoming and parts of Laramie County

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Cheyenne Light
Fuel & Power

BHC Non-Regulated



Operation Summary *

- Doing business in 10 states and Calgary, Alberta, Canada
- Oil and gas wells in Powder River Basin, Piceance Basin and San Juan Basin
- 186 Bcfe reserves – 83% natural gas & 17% oil
- 141 MW IPP capacity
- Approximately 274 million tons of low-sulfur Powder River Basin coal for low-cost, mine-mouth electricity generation
- Energy marketing has been a profitable business every year since inception

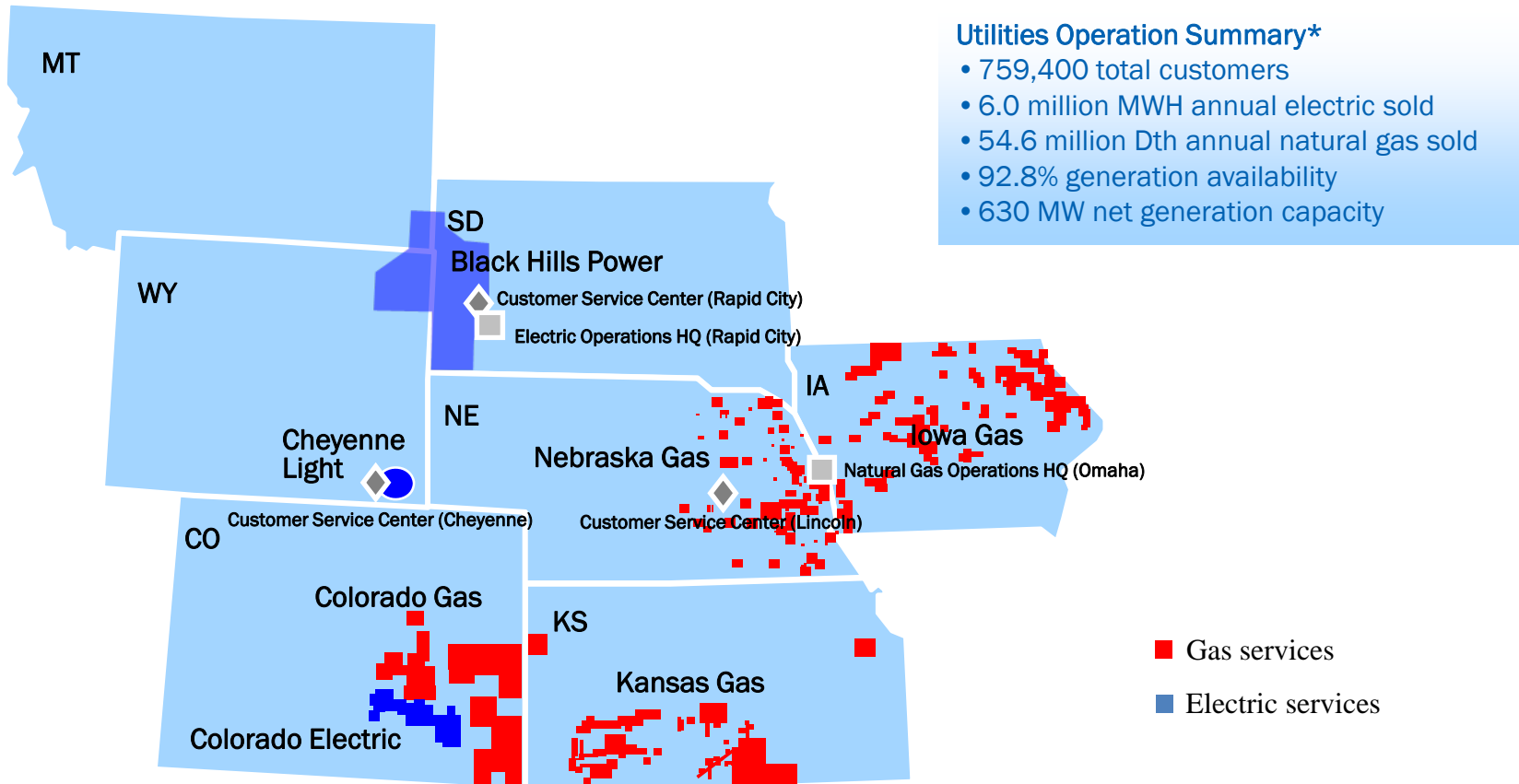
-  Power generation
-  Gas production
-  Oil production
-  Coal mine
-  Energy marketing

* Information as of 12/31/2008

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BHC Utilities



* Information as of 12/31/2008

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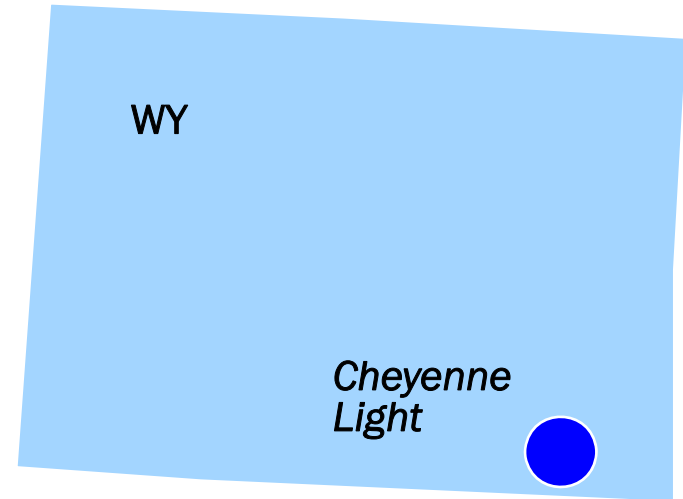
Cheyenne Light Fuel & Power



Operation Summary:

- 1882 Brush Swan Electric Co.
- 38,000 Electric Customers
- 34,000 Natural Gas Customers
- 1,200 sq mi service territory
- 1 million MWH Annual Electric
- 4.5 BCF Annual Core NG Sales (transport gas add't'l 8.8 BCF)
- New peak load of 176 MW set on Dec 14, 2008

** Plants owned by our non-regulated power generation subsidiary*



Generation assets:

- Coal: 95 MW (Wygen II)
- Coal: 60 MW (Wygen I* PPA)
- Gas: 40 MW (Gillette CT #2* PPA)
- Wind: 25 MW (Happy Jack & Silver Sage Wind Farms * PPA)

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Happy Jack Wind Farm

- Owned and operated by Duke Energy
- Cheyenne Light, Fuel & Power & Black Hills Power have a 20 year purchase power agreement
- 14 wind turbines (2.1 MW)
- Happy Jack Wind Farm capacity
 - $14 \times 2.1 = 29.4$ MW
- Can produce 100 million kWh each year



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Silver Sage Wind Farm

- Owned and operated by Duke Energy. Commercial Operation Date -Oct. 1, 2009
- Cheyenne Light, Fuel & Power and Black Hills Power have 20 year purchase power agreement for 30 MW
- 20 wind turbines
- Each turbine is rated at 2.1 MW
- Silver Sage Wind Farm capacity
 - $20 \times 2.1 = 42 \text{ MW}$



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Happy Jack/Silver Sage Wind Farms

- Wind turbine dimensions
 - Tower: 260 ft
 - 3 Blades Horizontal Axis
 - Blade: 145 ft
 - Diameter: 290 ft
 - Rotational speed- 15rpm
 - Blade tip speed- 159 mph
 - Making tip of blade over 400 ft



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Happy Jack/Silver Sage Wind Farms

- Cheyenne Wind Data
 - Average annual wind speeds of 15-18 mph
 - 37-40 % capacity factor
- Wind speed specifications
 - Cut in wind speed: 9 mph
 - Rated wind speed: 31 mph
 - Cut out wind speed: 55 mph

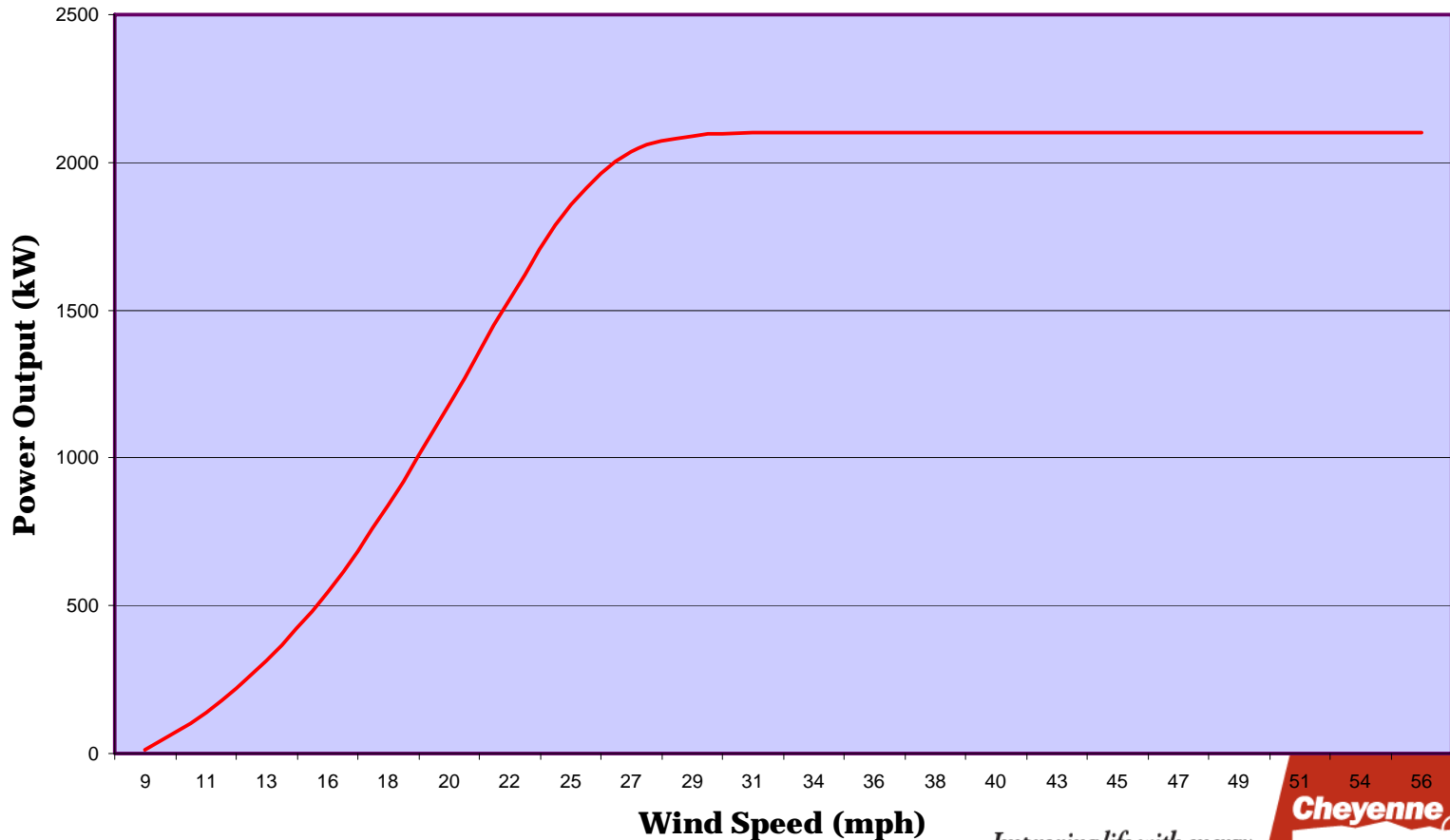


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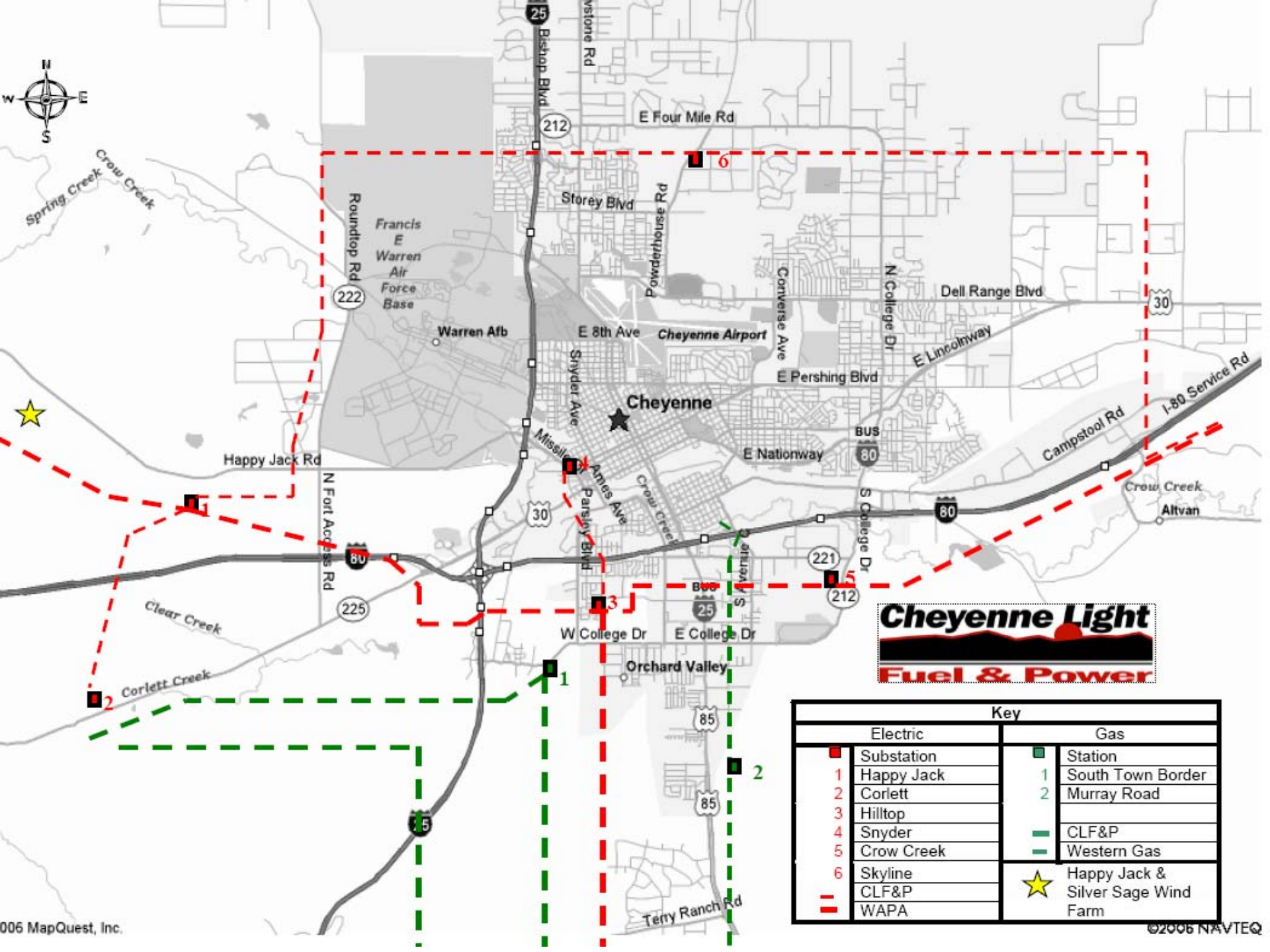
Wind Turbine Information

Power Curve



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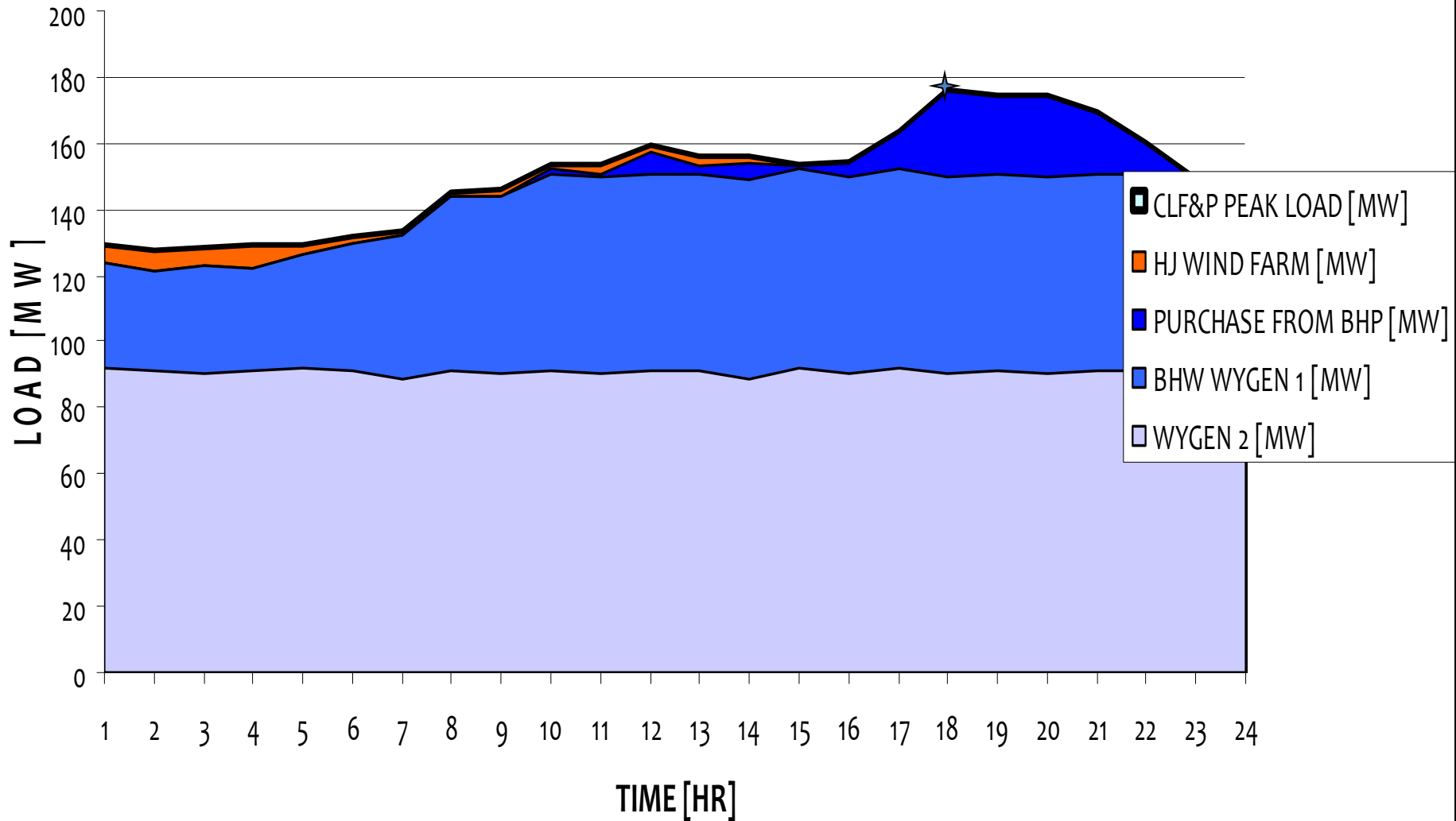
Key	
Electric	Gas
Substation	Station
1 Happy Jack	1 South Town Border
2 Corlett	2 Murray Road
3 Hilltop	CLF&P
4 Snyder	Western Gas
5 Crow Creek	Happy Jack & Silver Sage Wind Farm
6 Skyline	
CLF&P	
WAPA	

Challenges Facing Renewables

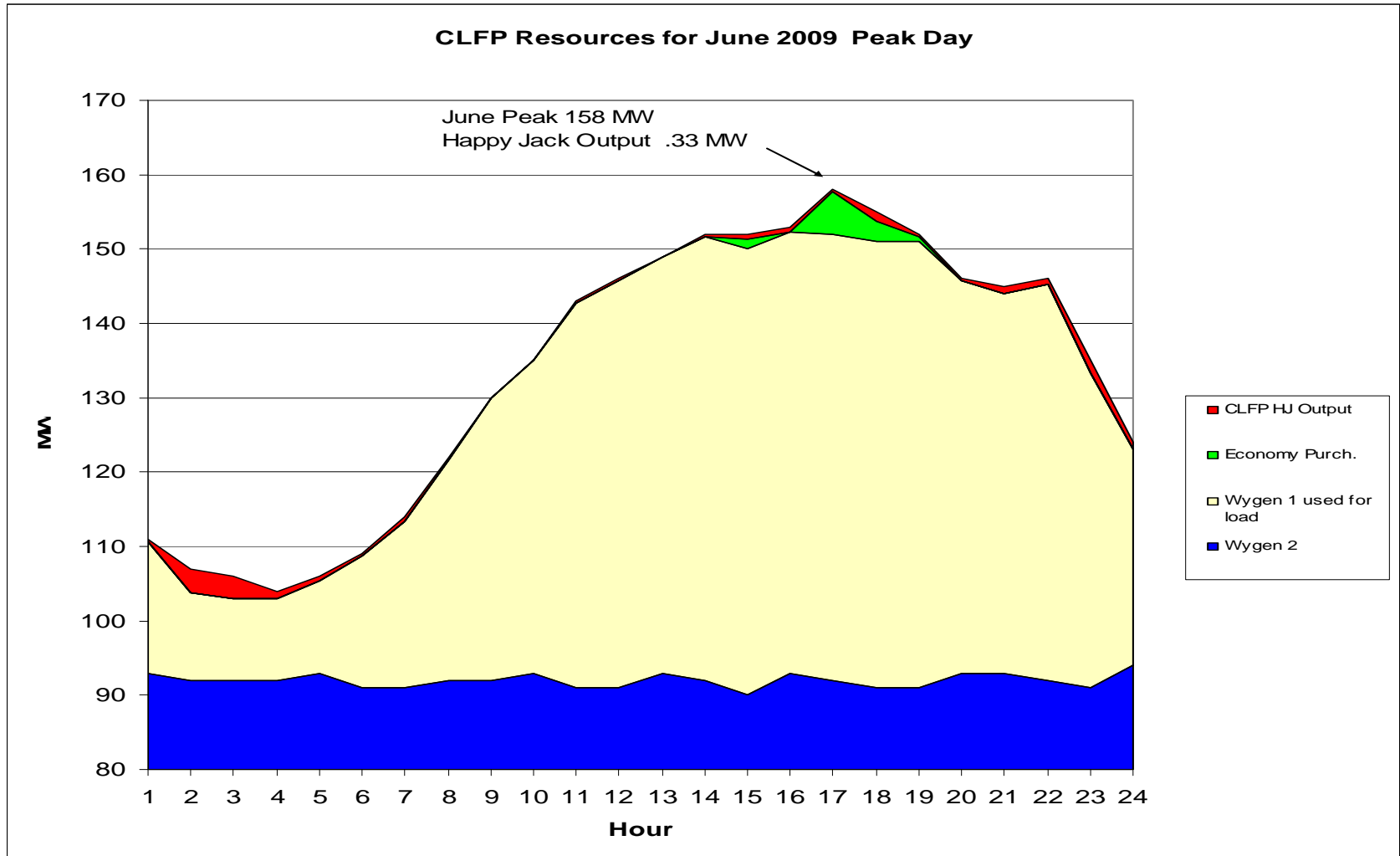
- High initial capital costs
- Geographic limitations
- Intermittent / Variable nature
- Transmission availability and cost
- Environmental and aesthetic challenges (NIMBY)

CLF&P Peak Load Profile

14 December 2008



CLF&P June Peak Load Profile

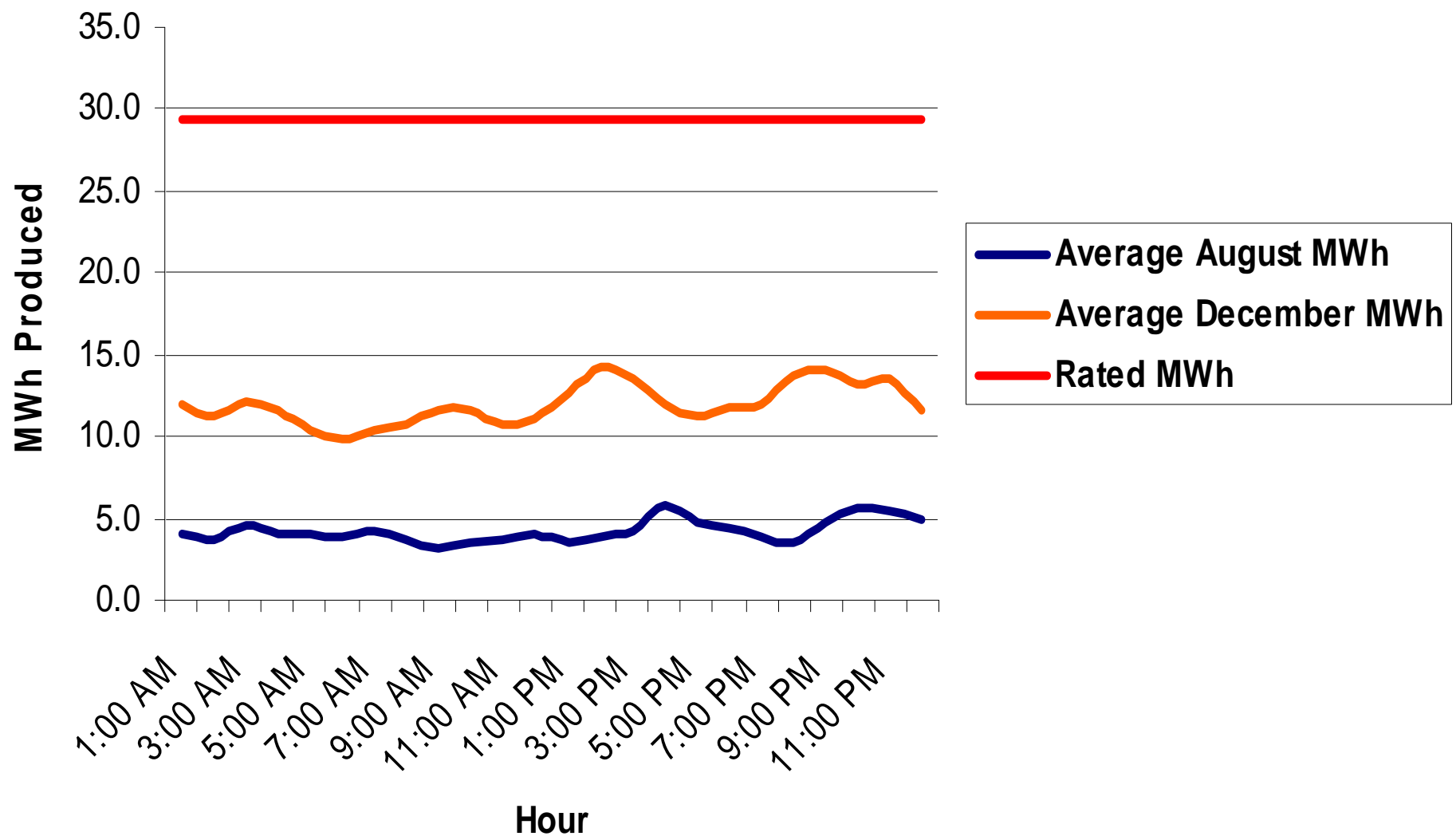


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Fuel & Power

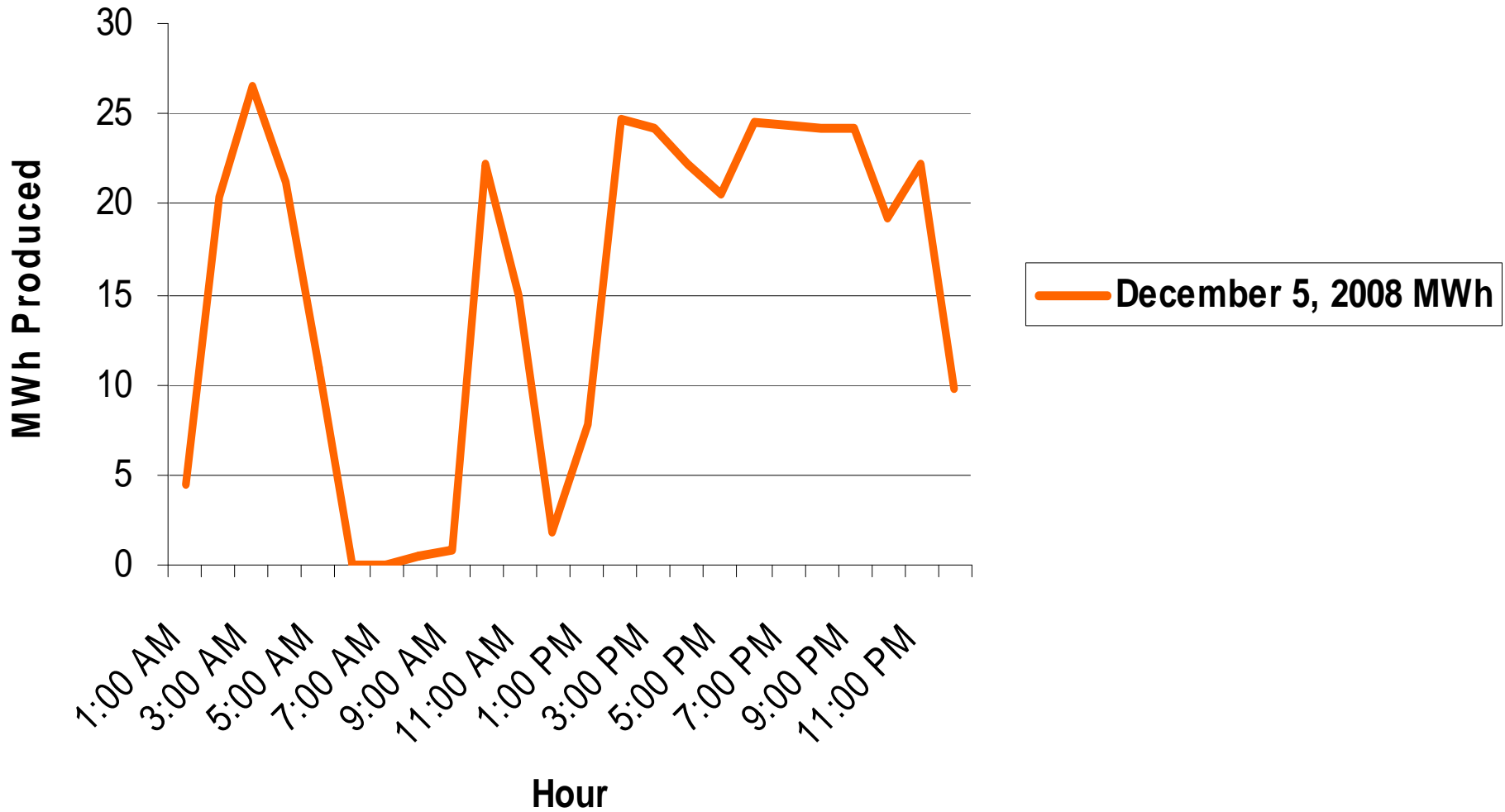
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Average August vs December MWh Production by Hour



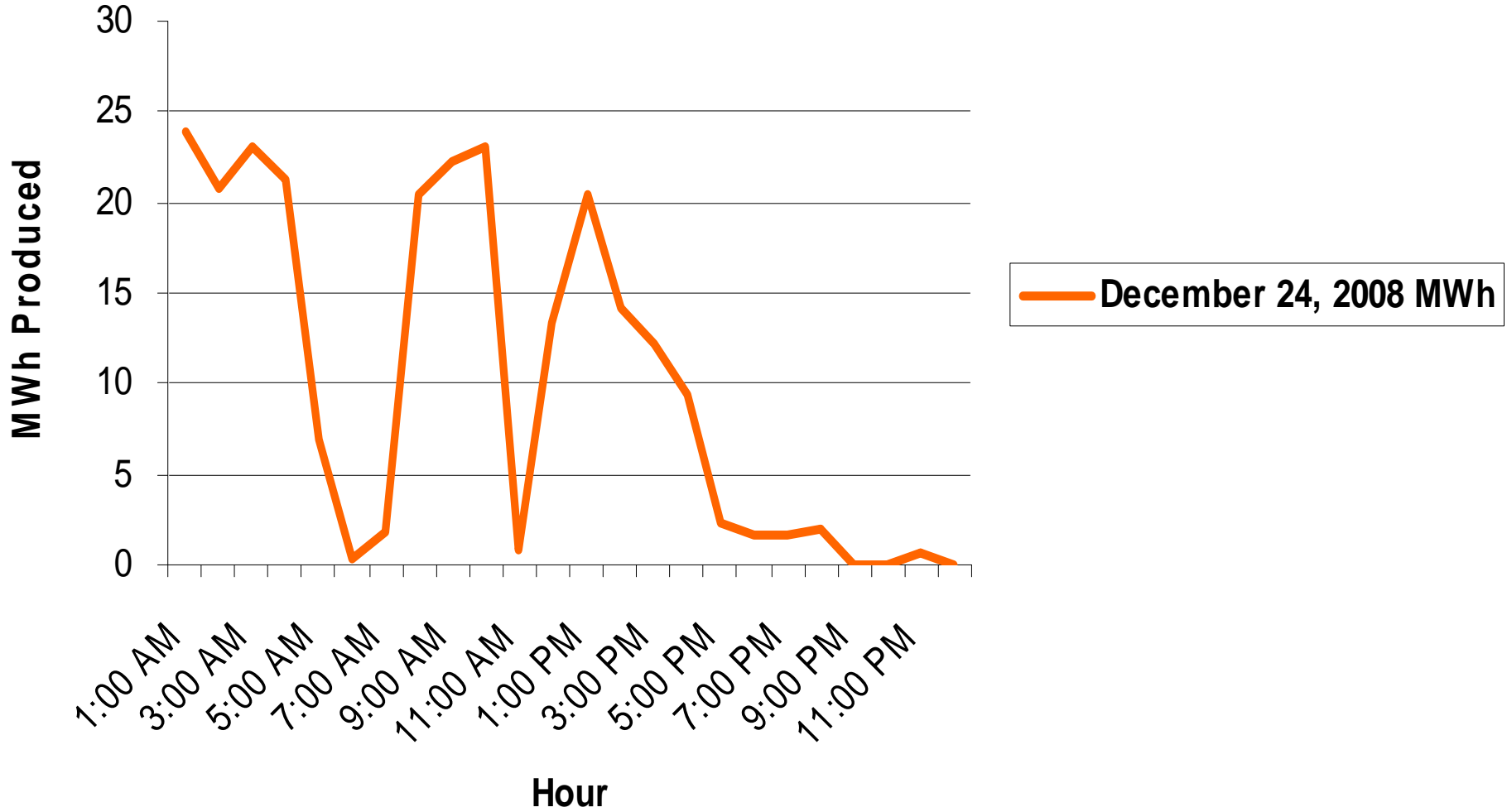
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December 5, 2008 MWh Production by Hour



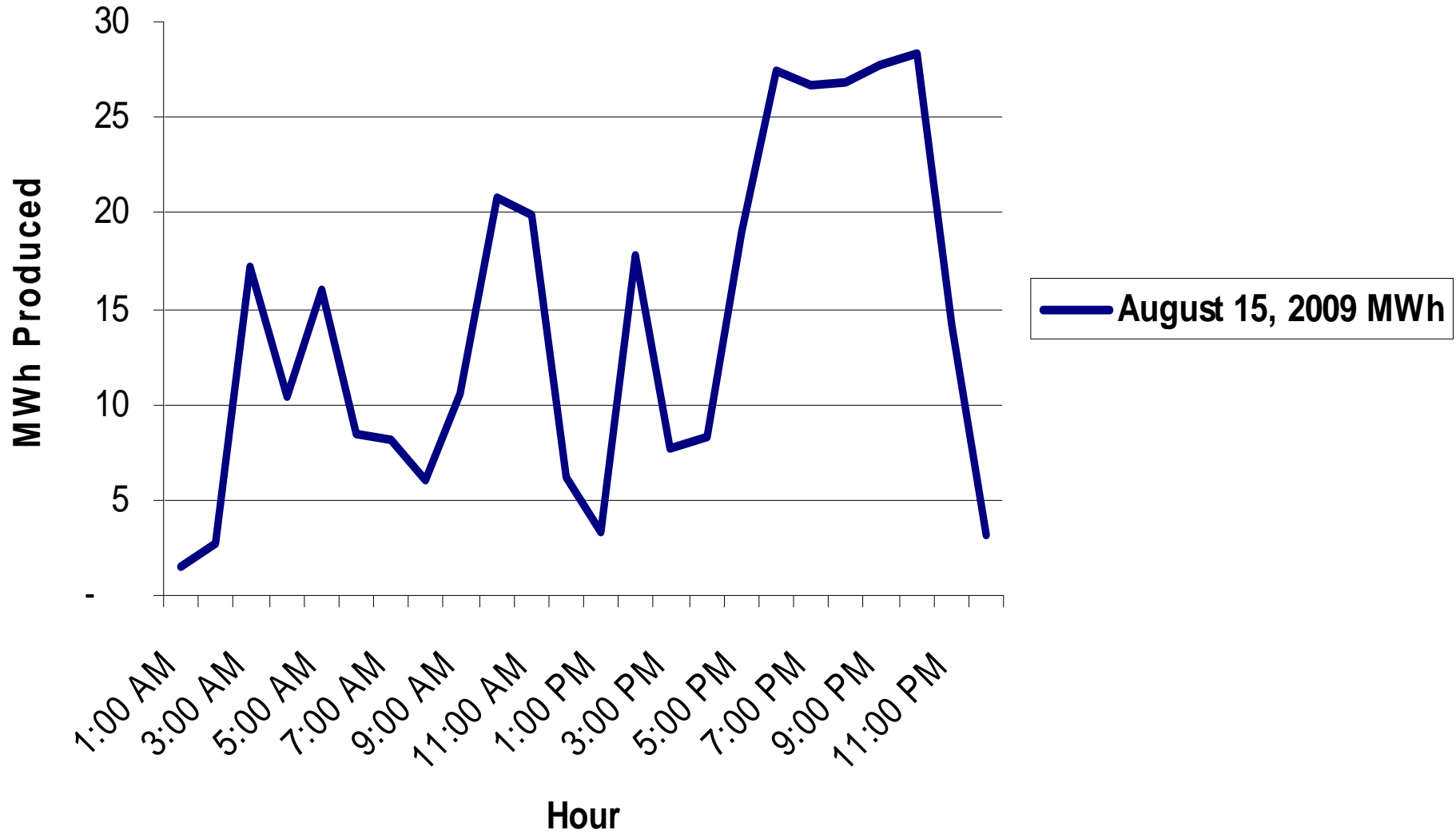
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December 24, 2008 MWh Production by Hour



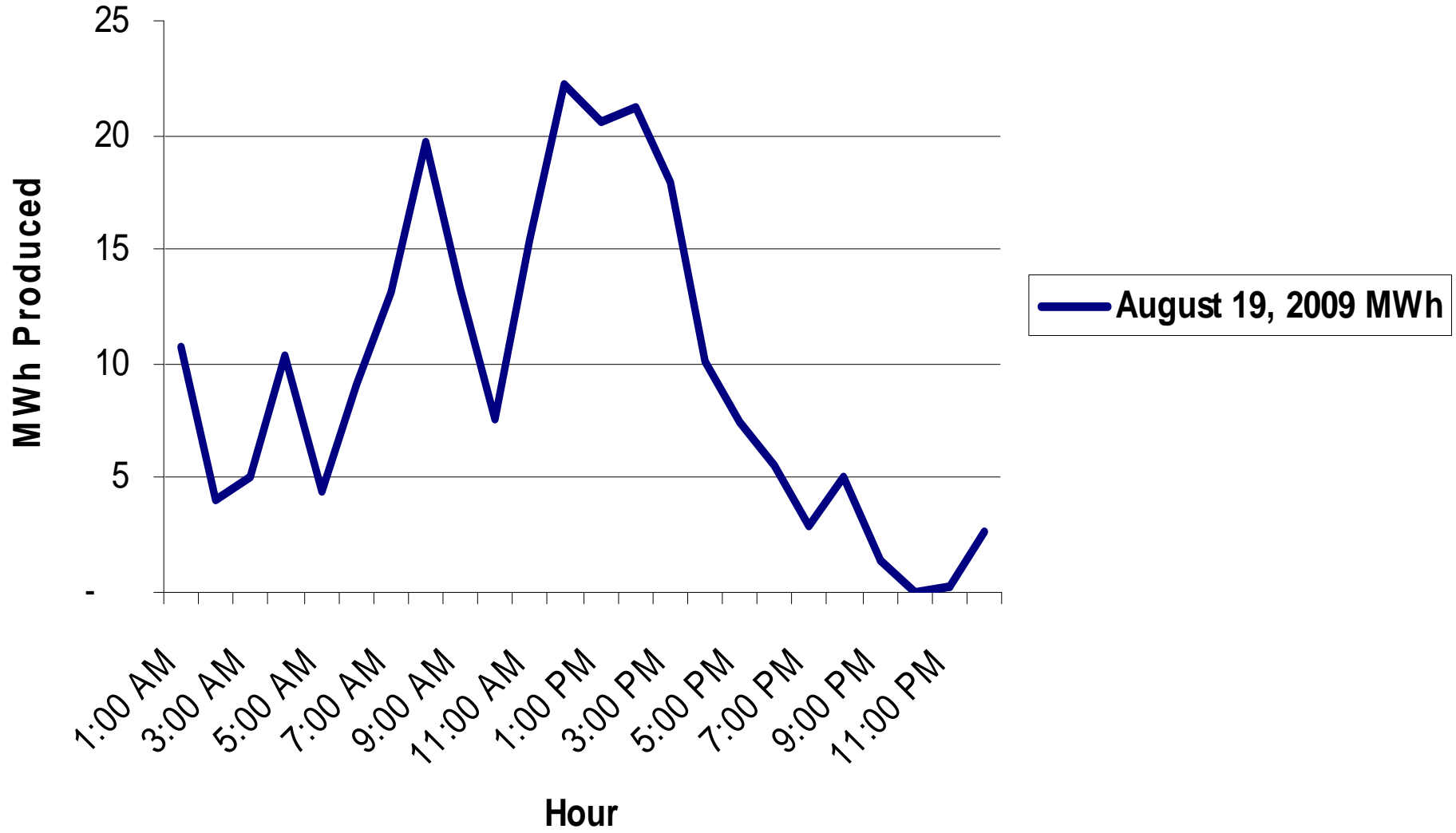
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August 15, 2009 MWh Production by Hour

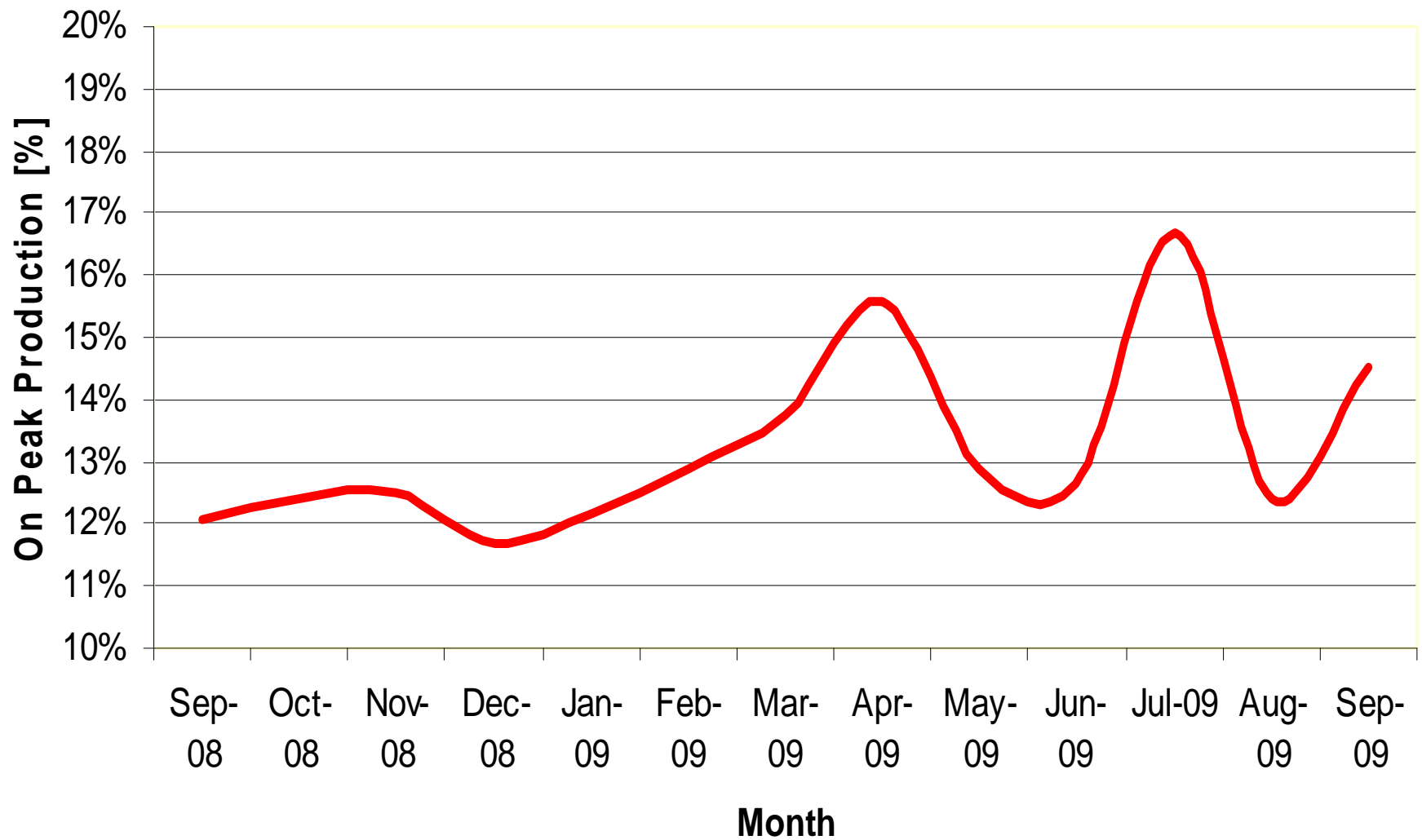


Happy Jack Wind Farm

August 19, 2009 MWh Production by Hour



Percentage of Generation during Peak Hours (4PM-7PM)



— On Peak Production (4PM-7PM)

Public Opposition

- NIMBY – Not In My Back Yard
- NIABY – Not In Anyone’s Back Yard
- BANANA – Build Absolutely Nothing Anywhere Near Anyone
- CAVE – Citizens Against Virtually Everything

Summary

- Contrary to public perception, the wind doesn't always blow in Wyoming:
 - Majority of Wind Farm generation is produced during off-peak times
 - Peak Period generation (4pm-7pm) – approximately 13%
 - Demonstrates continued need for base load generation
- We support a diverse energy portfolio that includes coal (the primary generation fuel for our company and for the U.S.) natural gas, wind, solar, biomass and hydro.

Questions?

Contact Information

Mark Stege

Vice President, Operations

Cheyenne Light Fuel and Power

108 W. 18th

Cheyenne, WY 82001

307-778-2101

www.blackhillscorp.com



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