

MINUTES OF THE SENATE UTILITIES COMMITTEE

The meeting was called to order by Chairman Jay Scott Emler at 9:30 A.M. on February 1, 2005 in Room 526-S of the Capitol.

Committee members absent:

Committee staff present: Athena Andaya, Kansas Legislative Research Department  
Raney Gilliland, Kansas Legislative Research Department  
Bruce Kinzie, Revisor of Statutes' Office  
Diana Lee, Revisor of Statutes' Office  
Ann McMorris, Committee Secretary

Conferees appearing before the committee:

John Olsen, Executive Director, Power Marketing, Westar Energy

Others in attendance: See attached sheet

Presentation on Long Term Power Supply by Westar

John Olsen, Executive Director, Power Marketing, Westar Energy, provided insight into Westar Utility Operations on long term power supply. Westar is Kansas' largest electric provider with generating capacity by coal, nuclear, gas/oil and wind in 14 locations. He explained their competitive low-cost generation portfolio, their load and capability forecast for 2004-2013, their weekly peak obligation, typical winter day obligation, typical summer day obligation and peak day obligation. Data on new plant characteristics was provided. He explained the monthly wind energy profile and wind resource correlation with summer load. Typical construction timelines were detailed. (Attachment 1)

There were questions from the committee regarding cost to build future nuclear plants, capacity factors, current building being conducted, wind energy potential, and conservation programs. Committee requested further information on conservation studies. Doug Sterbenz, executive vice president, power marketing, in response to question regarding coal reserves, said the supply was estimated to last for another 250 years. Cost of coal is determined a great deal by the transportation cost from mine to plant site.

Approval of Minutes

Moved by Senate Taddiken, seconded by Senator Pine, to approve the minutes of the January 31, 2005 meeting of the Senate Utilities Committee. Motion carried.

Adjournment.

Respectfully submitted,

Ann McMorris, Secretary

Attachments - 1





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# Long-Term Power Supply

Presentation to the Kansas  
Senate Utilities Committee

By

John Olsen

Executive Director, Power Marketing

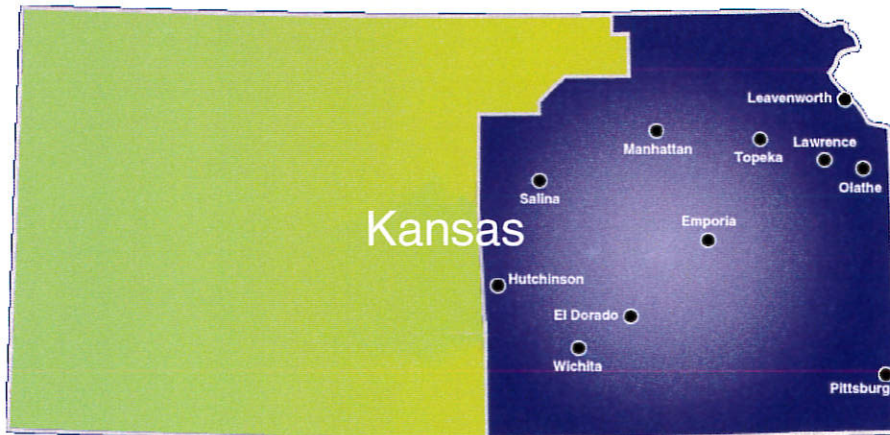
February 1, 2005

# Westar Utility Operations

1-2

Kansas' largest electric provider

## Service Territory



### Key Operational Facts:

644,000 customers

6,000 MW of generation

20% Planning Reserve  
Margin for 2004 (SPP  
Requirement)

11,000 sq mile service territory

34,500 miles of T & D

2,000 employees



# Westar Energy's Generating Capacity

Coal Nuclear Gas / Oil Wind

1-3

**Abilene Energy Center**  
Capacity: 72 MW  
Fuel: Gas



**Jeffrey Energy Center**  
Capacity Share: 1,857 MW  
Fuel: Coal



**Tecumseh Energy Center**  
Capacity: 242 MW  
Fuel: Coal/Gas



**Hutchinson Energy Center**  
Capacity: 479 MW  
Fuel: Gas, No. 2 Fuel Oil  
and No. 6 Fuel Oil



**Lawrence Energy Center**  
Capacity: 539 MW  
Fuel: Coal



**Gordon Evans Energy Center**  
Capacity: 834 MW  
Fuel: Gas, No. 2 Fuel Oil  
and No. 6 Fuel Oil

**LaCygne Energy Center**  
Capacity Share: 681 MW  
Fuel: Coal



**Murray Gill Energy Center**  
Capacity: 317 MW  
Fuel: Gas/No. 6 Fuel Oil



**Wolf Creek Generating Station**  
Capacity Share: 548 MW  
Fuel: Uranium



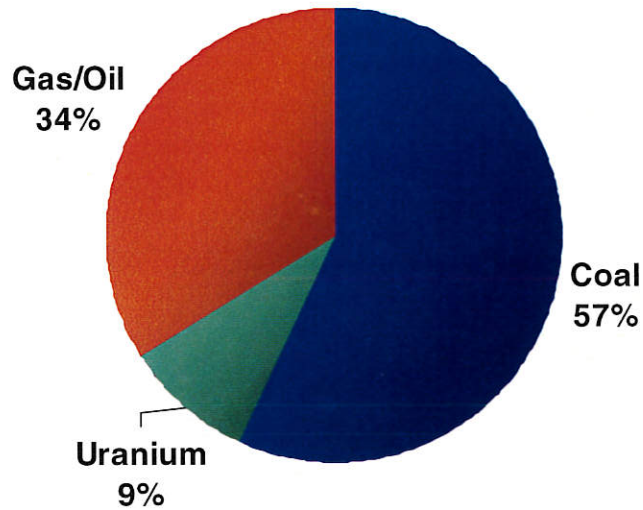
**Neosho Energy Center**  
Capacity: 63 MW  
Fuel: Gas/No. 6 Fuel Oil

**Stateline Combined Cycle**  
Capacity Share: 200 MW  
Fuel: Gas/Waste Heat

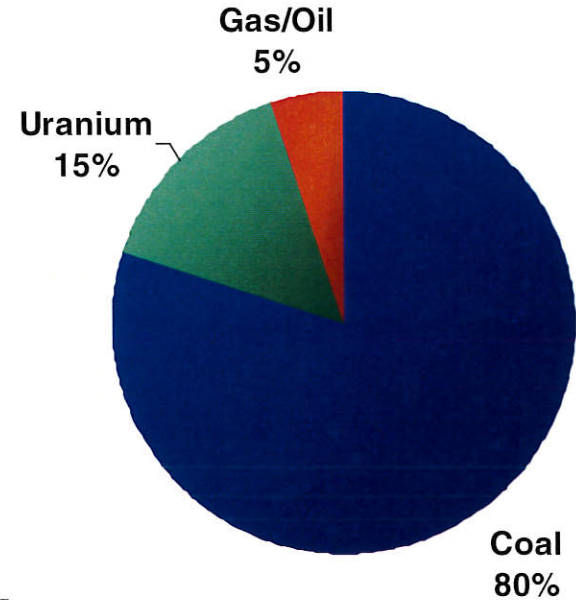
# Competitive Low-Cost Generation Portfolio

1-4

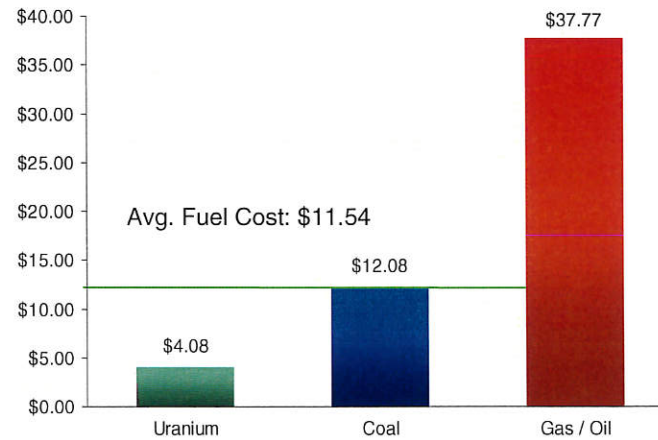
**Installed Capacity**



**As Optimized**



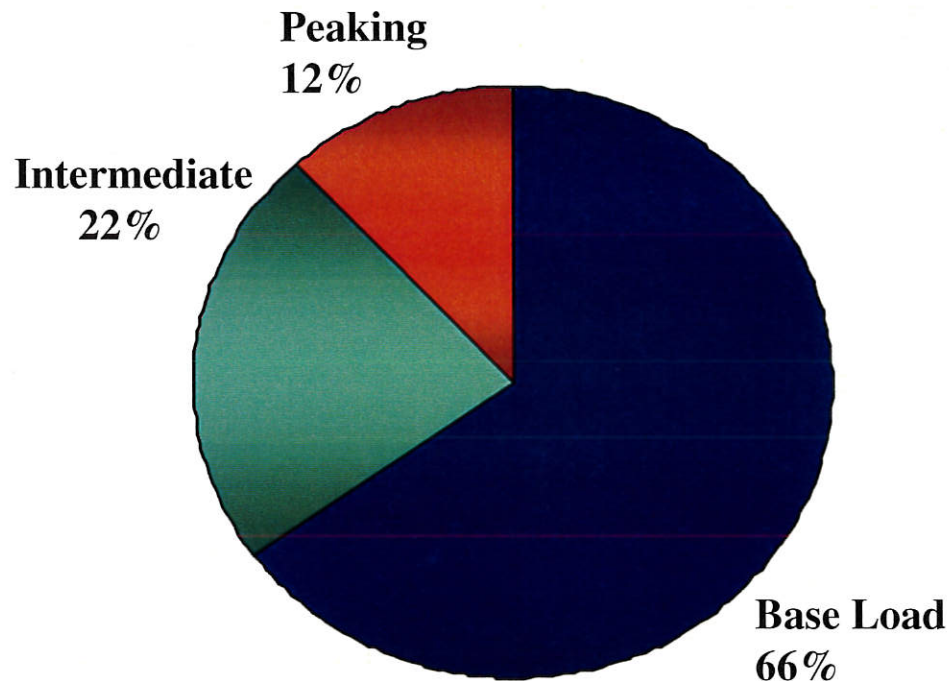
**Fuel Cost by Source  
\$/MWh**



# Westar Energy's Capacity Profile

5-1

## Capacity (Nameplate)

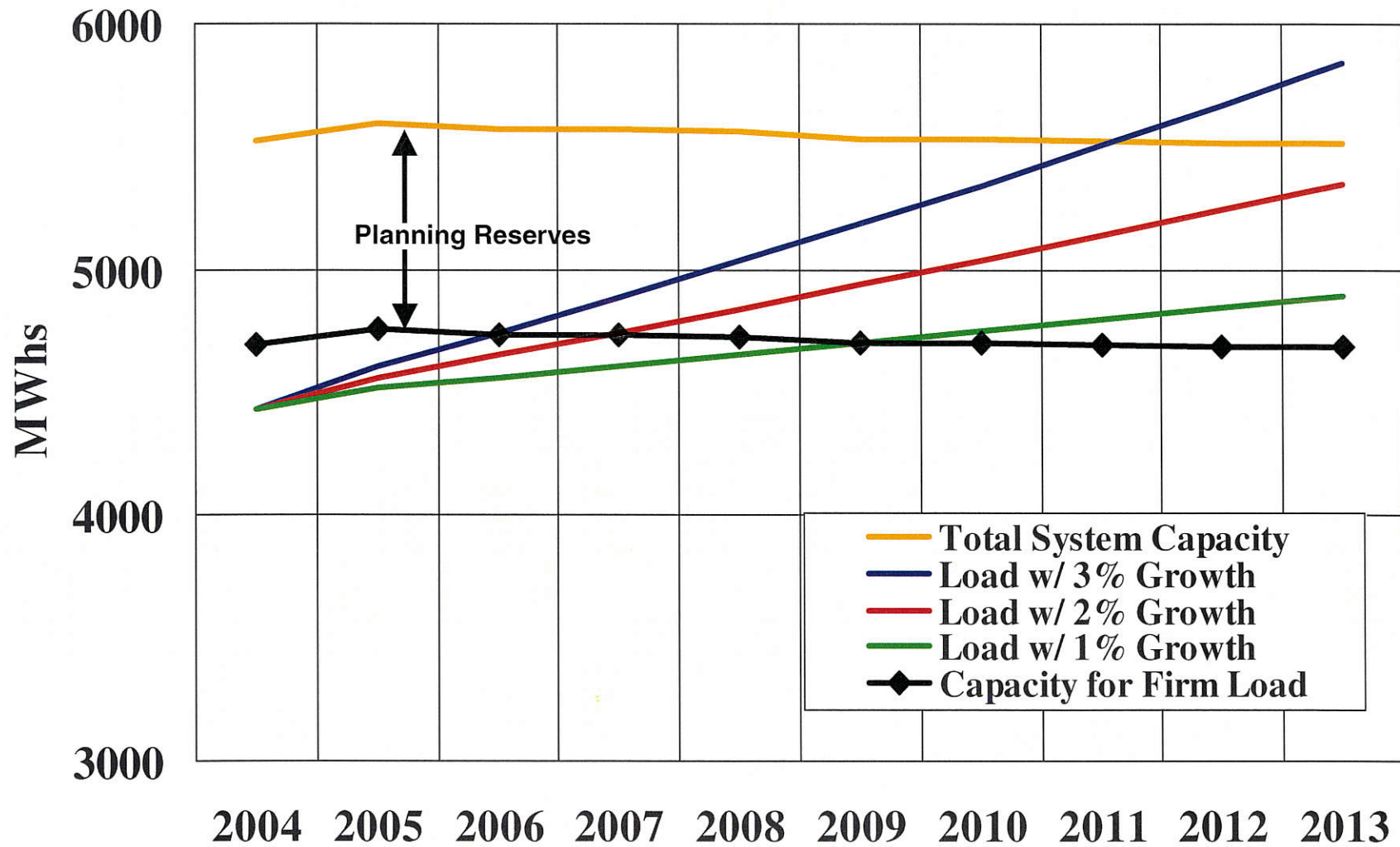


- Base Load – Operates at a constant rate over a long period of time.
- Intermediate – Operates occasionally to bridge the energy needs between Base Load and Peaking resources.
- Peaking – Operates briefly during peak load times to meet the energy needs above the Intermediate resource and during emergency system conditions.



# Load and Capability Forecast 2004 - 2013

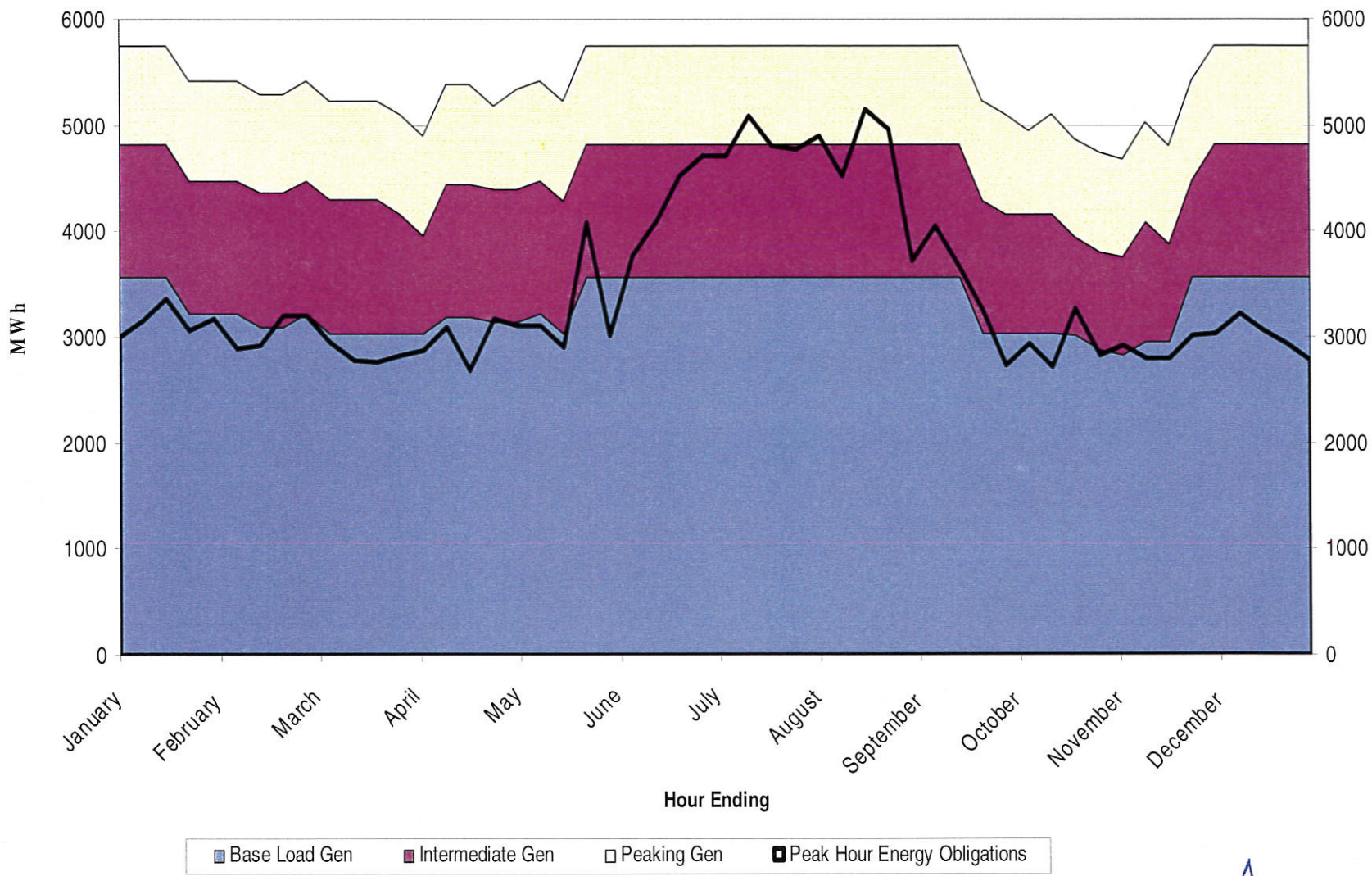
1-6





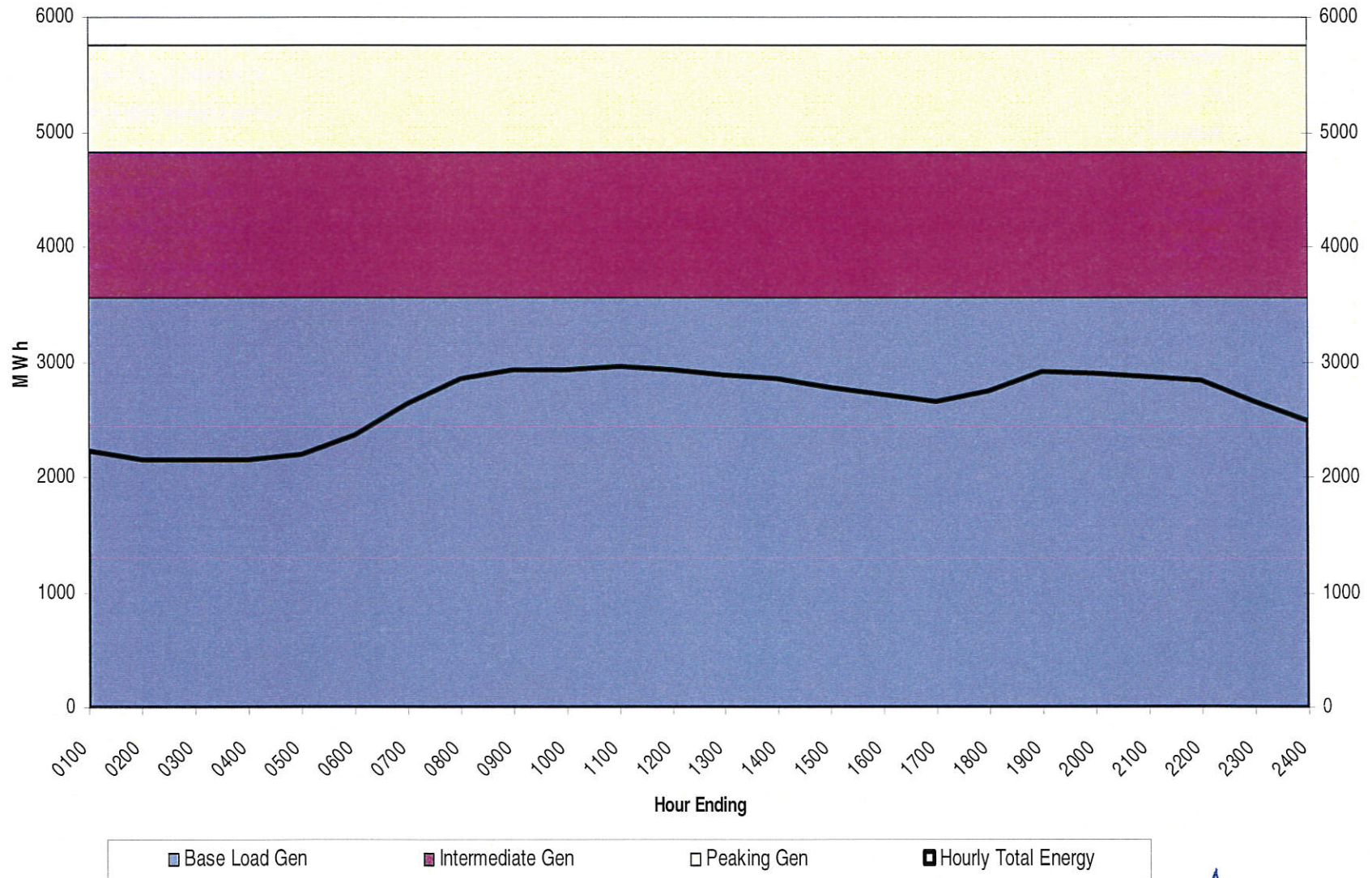
# Weekly Peak Obligation

1-7



# Typical Winter Day Obligation

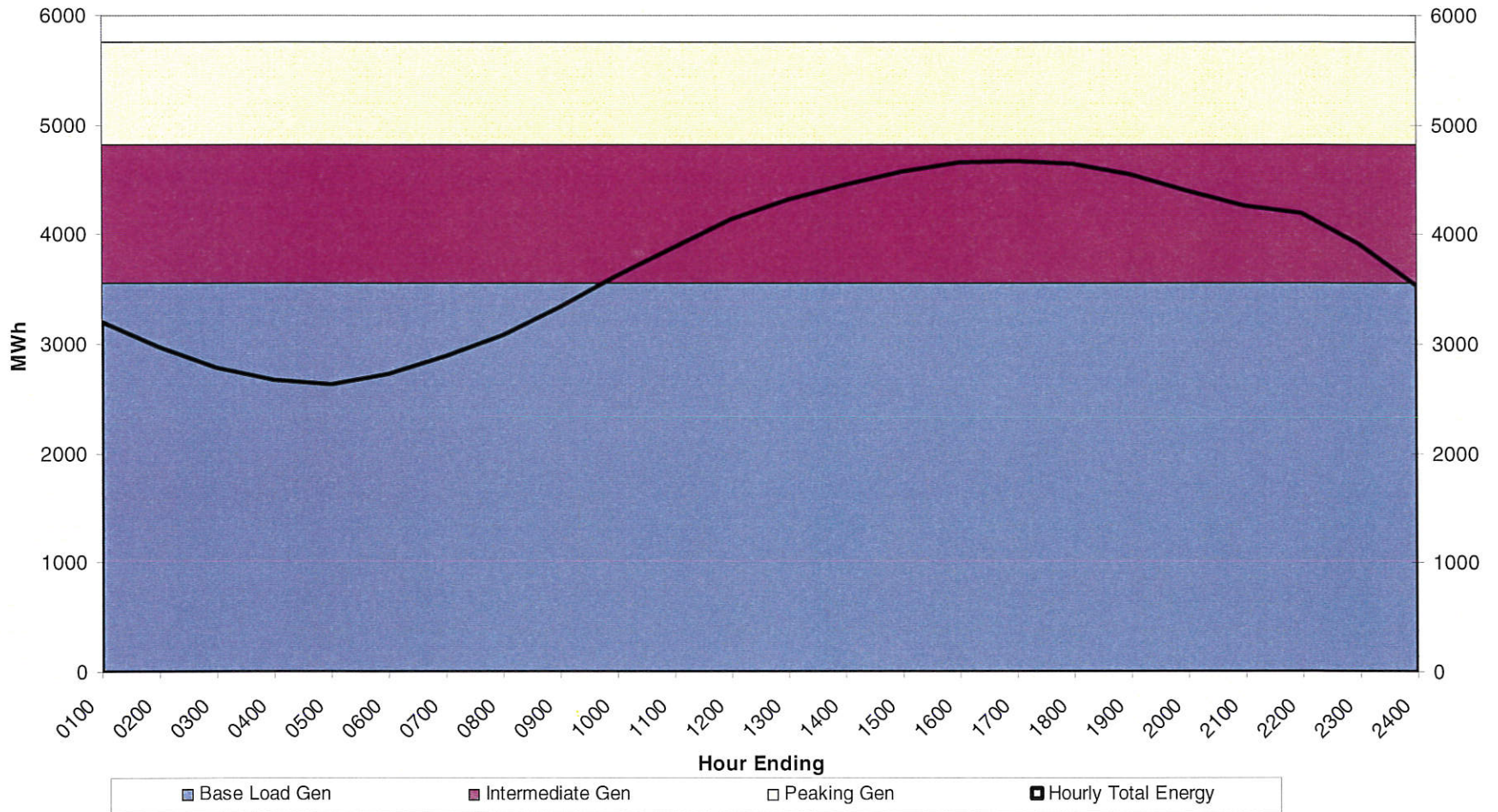
8-1





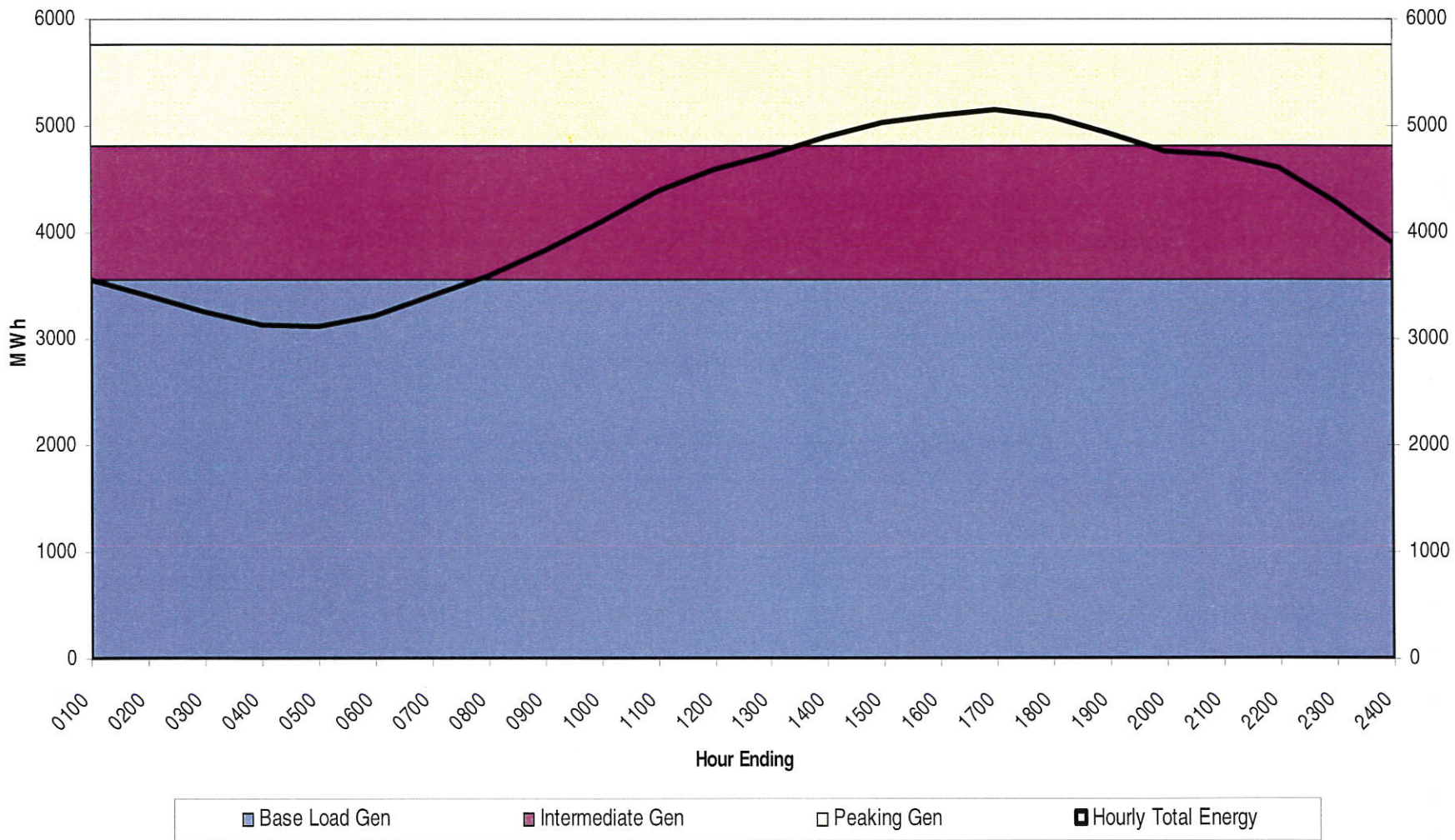
# Typical Summer Day Obligation

1-9



# Peak Day Obligation

1-10





# New Plant Characteristics

11-1

	55 MW Aero-CT (Peaking)	150 MW Combustion CT (Peaking)	500 MW CC (Intermediate)	600 MW Coal (Base Load)	Wind (????)
Capital Cost (\$/KW)	\$450	\$360	\$510	\$1,400	\$1,300
Heat Rate (Btu/kWh)	10,400	10,800	7,120	9,700	N/A
Variable O&M (\$/MWh)	\$2.75	\$2.00	\$2.00	\$1.40	\$5.00
Fixed O&M (\$/KW-year)	\$6.00	\$6.00	\$13.00	\$40.00	\$25.00
Capacity Factor	10%	10%	25%	80%	40%
Total Cost (\$/MWh)*	\$157.50	\$138.20	\$84.20	\$46.50	\$30.00

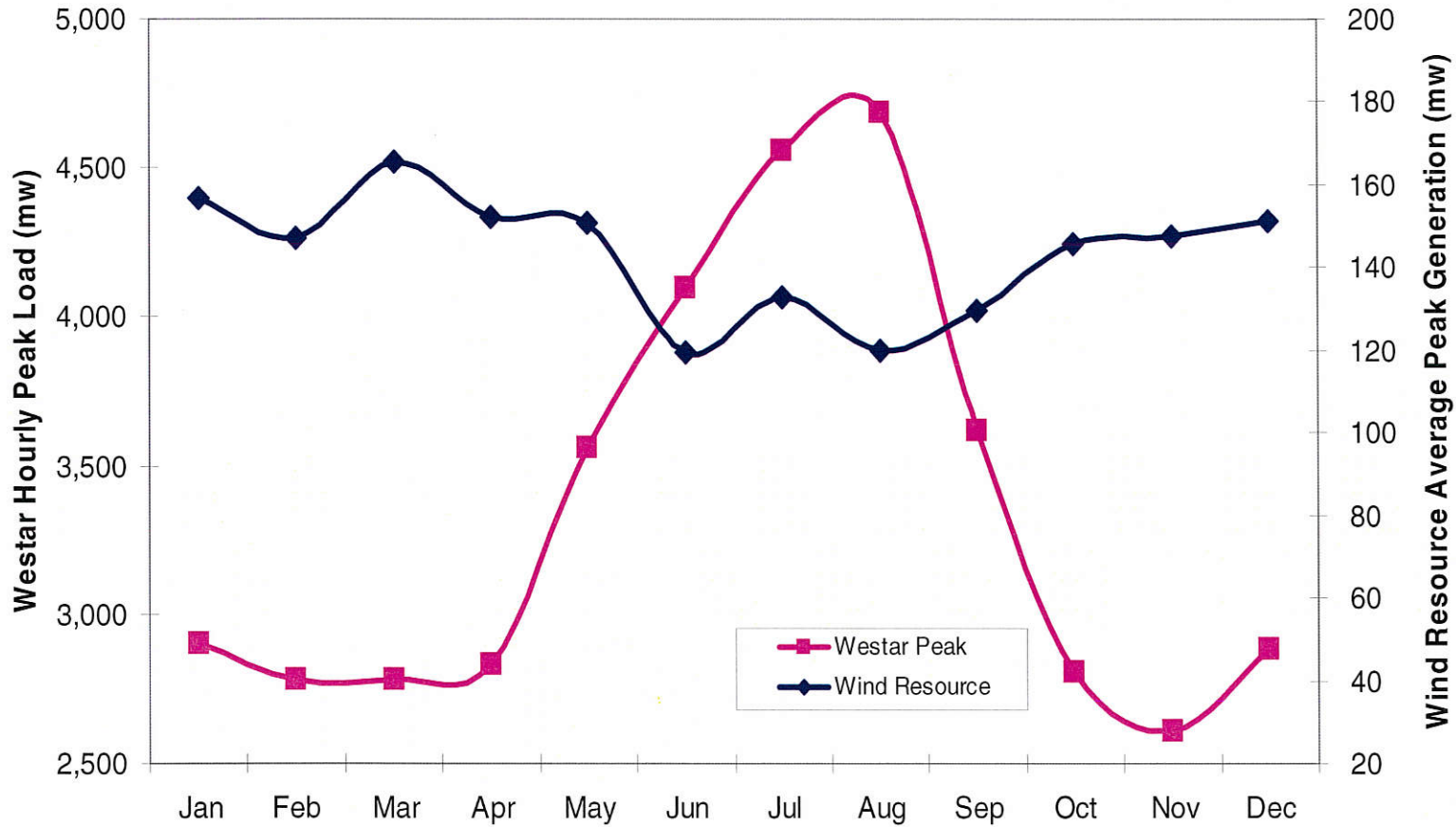
CT = Combustion Turbine    CC – Combined Cycle

\* Based on \$5.00/MMBtu Natural Gas Prices; \$0.75/MMBtu Coal Price

# Monthly Wind Energy Profile

1-12

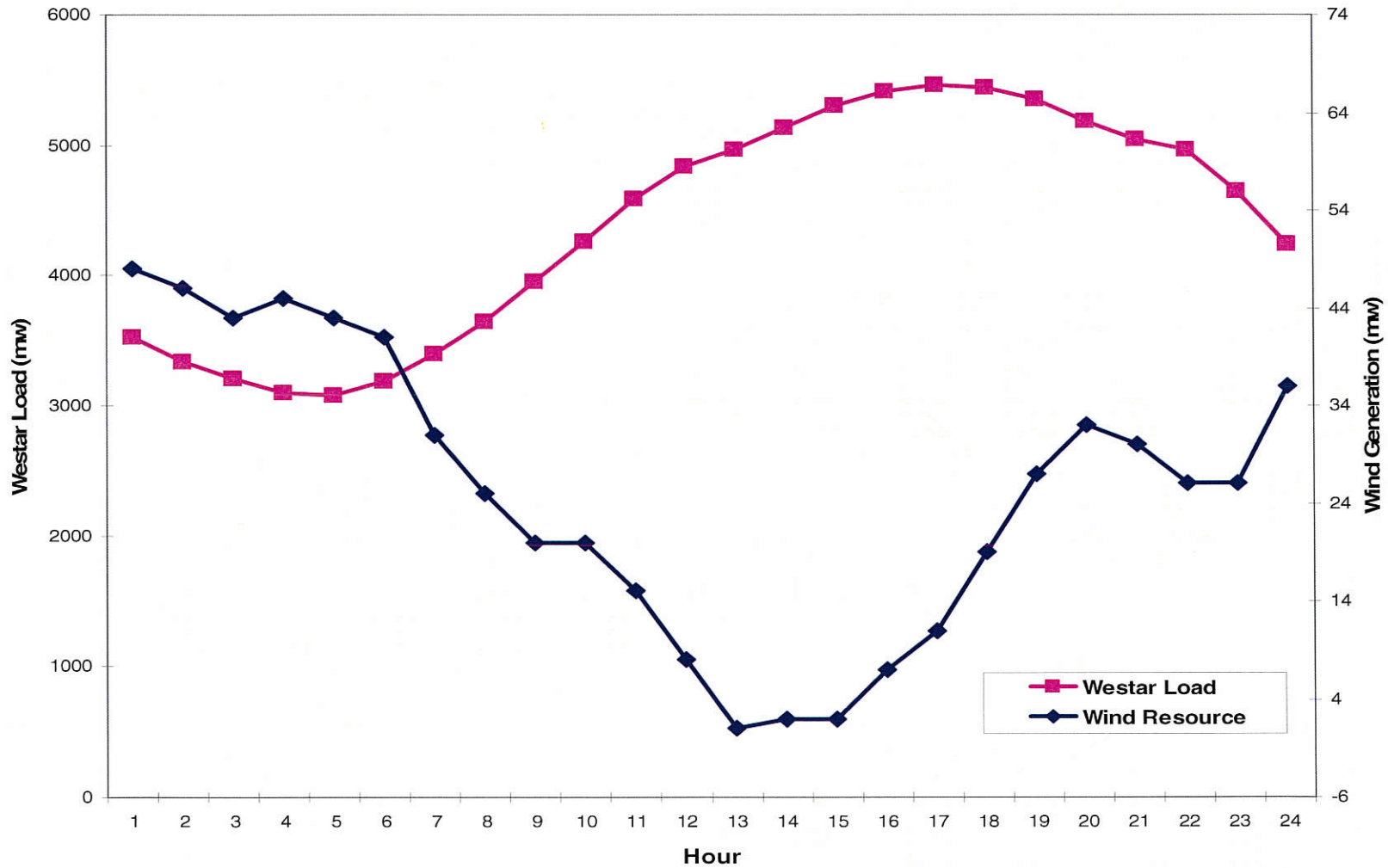
Westar Control Area Load vs. Expected Peak Generation from 200-MW Wind Resource



# Wind Resource Correlation with Summer Load

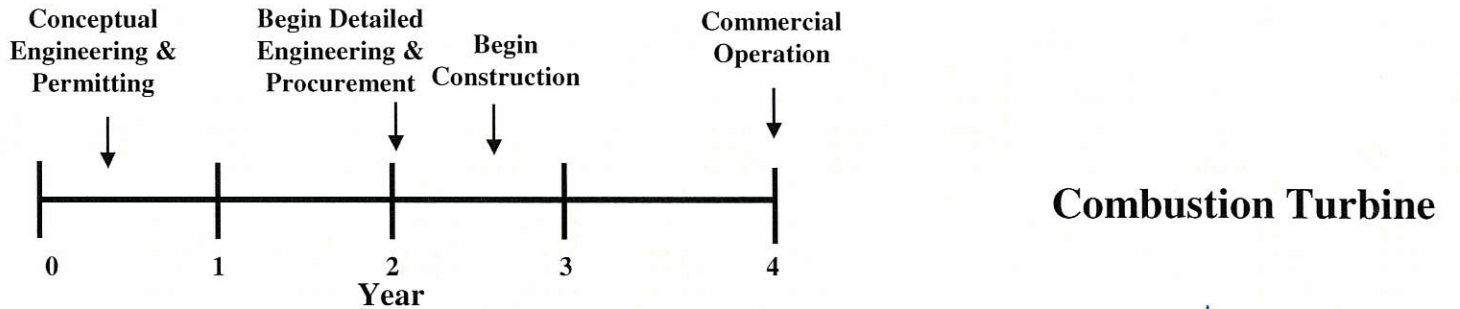
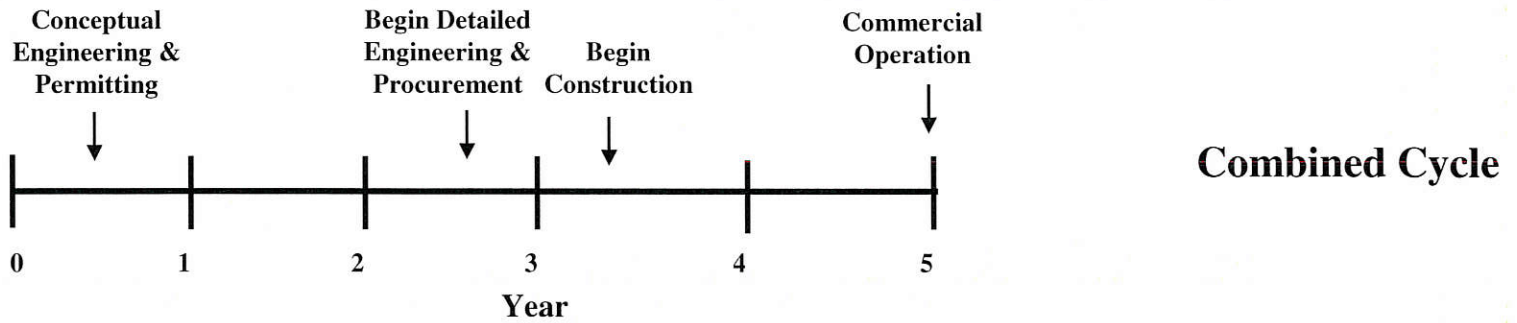
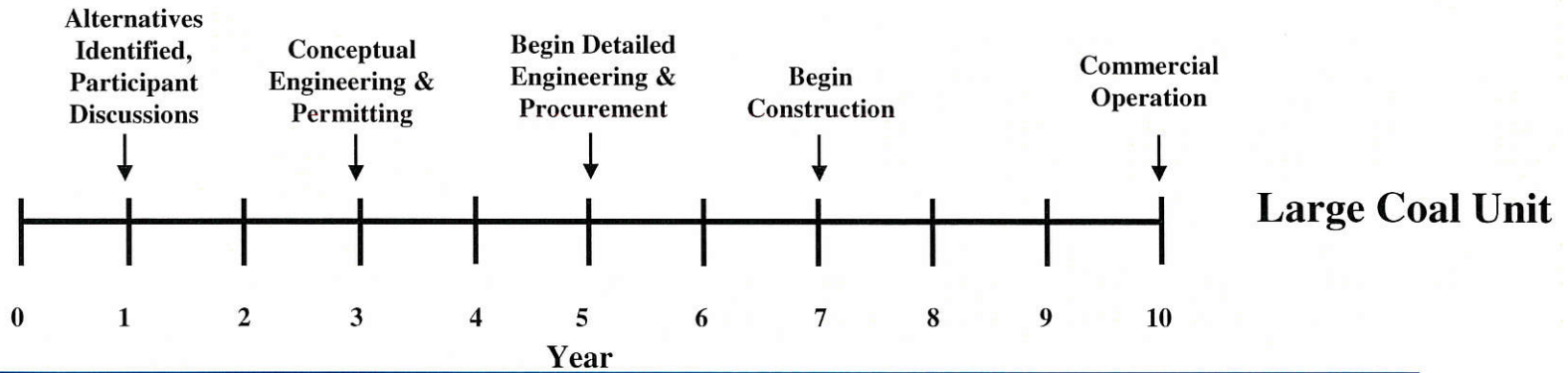
1-13

Westar Load vs. WFEC's Blue Canyon Windfarm (Oklahoma) generation for 8/02/2004



1-14

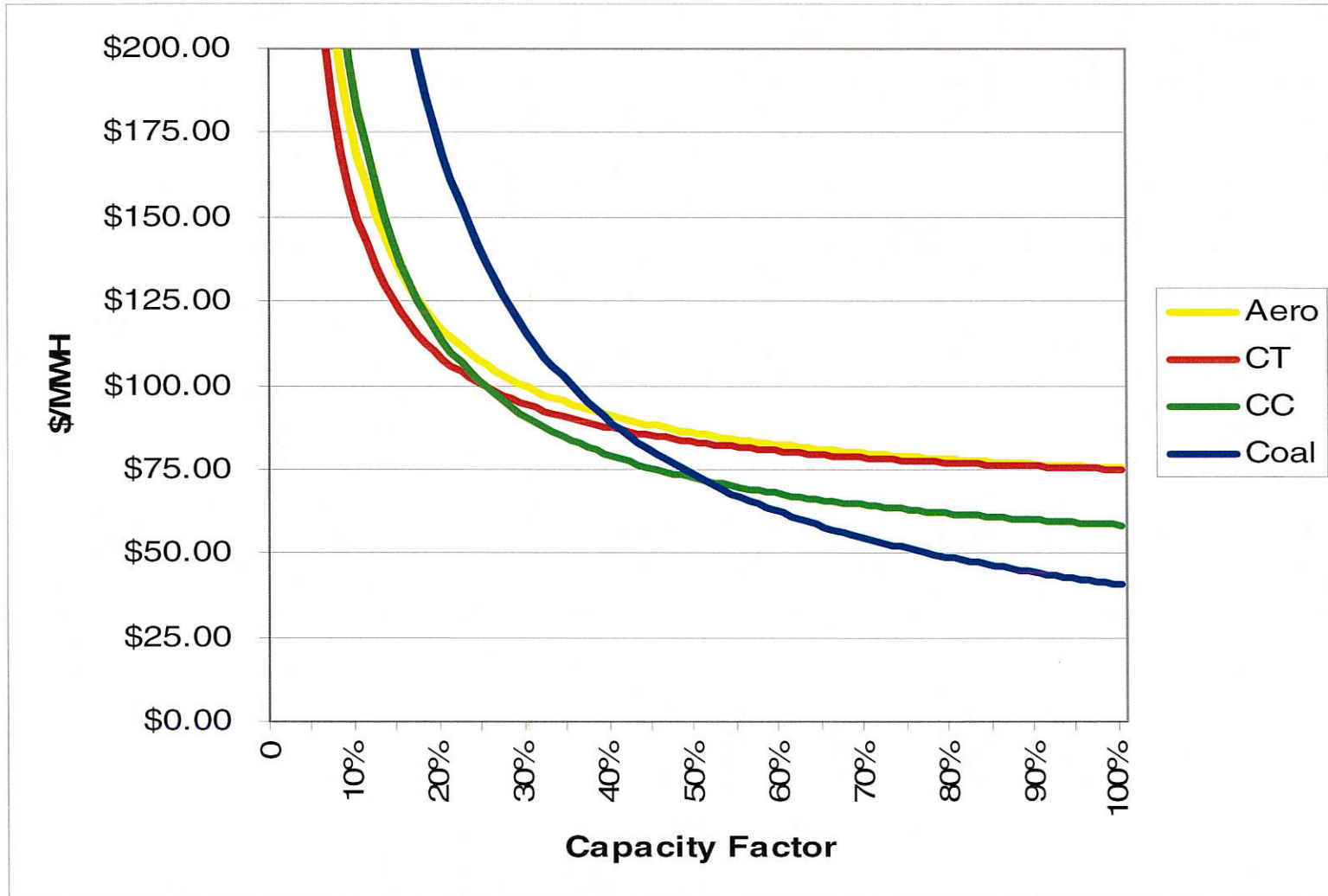
# Typical Construction Timelines





# Unit Cost Comparisons – Gas @ \$6.00

1-15



# Unit Cost Comparisons – Gas @ \$5.00

1-16

