

CAE STUDIES  
FOR  
IMPLEMENTATION  
OF  
ENERGY DRIVEN  
PROJECTS  
IN  
NEW JERSEY

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# CASE STUDIES

Common Themes to Financial justification and implementation of Energy Projects.

**Energy Projects** are;

- Building Efficiency- HVAC, Lighting, Water conservation
- Combined Cooling Heat & Power (CCHP)
- Solar, Wind, Biomass
- Demand Response



# CASE STUDIES

1. Montclair State University infrastructure and building upgrades.
2. Trump Casinos building efficiency upgrades
3. Hamilton Twp. Apartment Complex geothermal and electric sub meter



# Common Themes for passing financial hurdles

1. Energy costs increase to a significant percentage of revenue or state aid/tuition/tax revenue
2. Aggressive Energy Policy
3. High Debt to Earnings or Equity ratios
4. Limited Bond capacity or low ratings
5. Public opinion is strong



# **CASE STUDY - Montclair State University Infrastructure upgrades**

MSU initiated a 10 year **Infrastructure Master Plan** the recommendations were:

- New CCHP plant

- New campus distribution piping

- New building efficiency upgrades

Project will be financed through a private third party thermal contract over 15 yrs.

Deciding factors:

- MSU can utilize available funds to finance educational projects.

- ITC's can be monetized



# CASE STUDY - Trump Properties Guaranteed Energy Savings Projects

**TRUMP**  
MARINA



**TRUMP**  
TAJ MAHAL

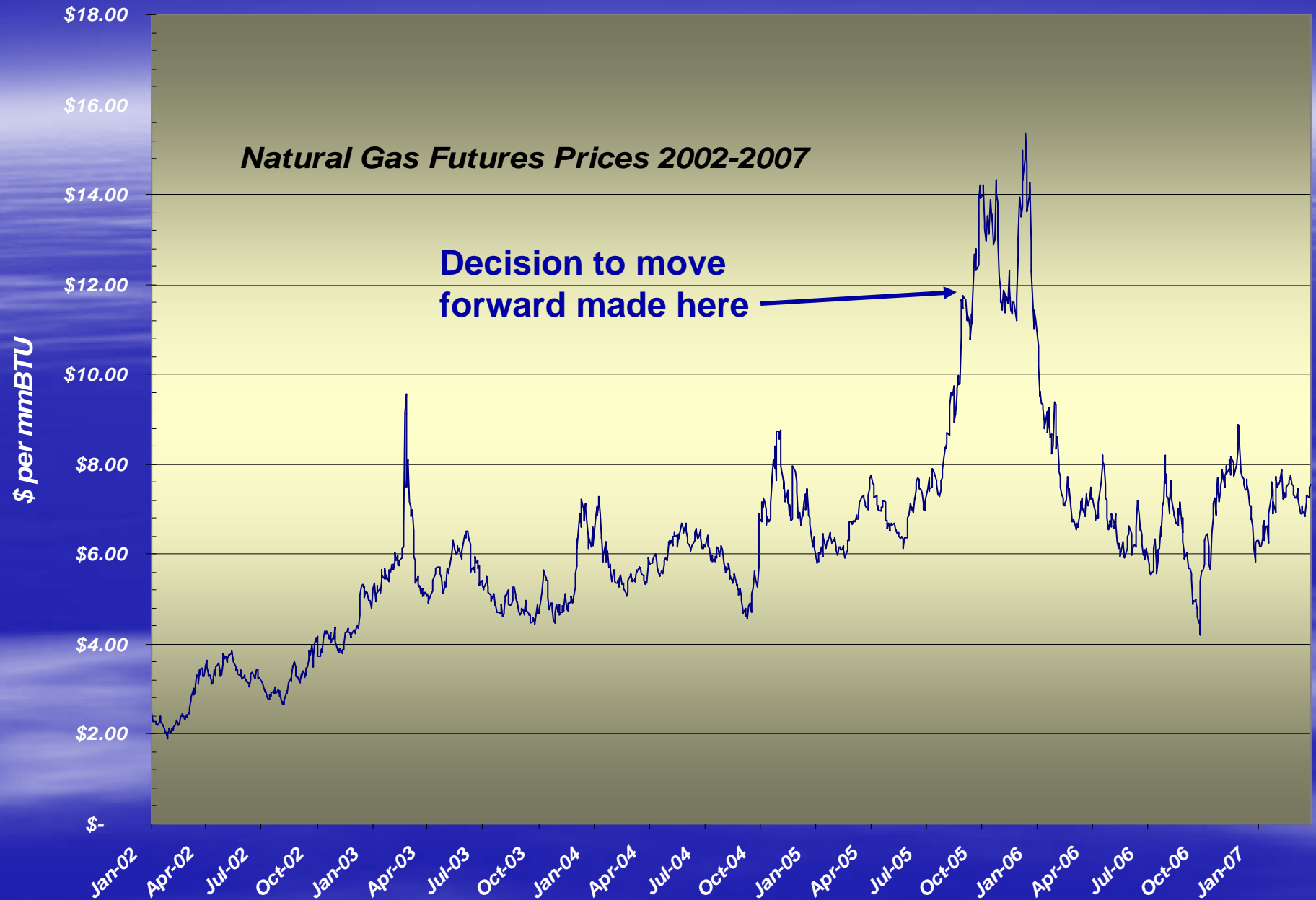
<b>Project Cost</b>	<b>\$6.2M</b>	<b>Project Cost</b>	<b>\$5.9M</b>	<b>Project Cost</b>	<b>\$12M</b>
<b>Project Savings</b>	<b>\$2.35M</b>	<b>Project Savings</b>	<b>\$2.8M</b>	<b>Project Savings</b>	<b>\$6.2M</b>
<b>Payback</b>	<b>2.63 Yrs</b>	<b>Payback</b>	<b>2.1 Yrs</b>	<b>Payback</b>	<b>1.93 Yrs</b>
<b>Status</b>	<b>Complete</b>	<b>Status</b>	<b>Complete</b>	<b>Status</b>	<b>30% Cmpl</b>

All Projects to date self funded by Trump Properties.

Risk Premium was paid to guarantee energy savings and construction costs



### Natural Gas Futures Prices 2002-2007



# CASE STUDY – Green Apartment Complex

## Develop LEED energy efficient apartments

1. Green Development will expedite permitting and benefit occupancy rates.
2. Geothermal Heating and Cooling owned by third party sub metered to tenants is 30% lower in energy cost
3. High voltage electrical service at complex entrance sub metered to tenants by third party lower electric rate to tenants.
4. Reduced Building loan amount by third party financing electric and heating/cooling equipment.



# Decision makers focus

1. **Combination Energy Price and Energy Policy.**
2. **Off Balance Sheet Financing is more attractive today for Public and Private entities.**
  1. Focus is on Core Business or Charter
  2. Federal Investment Tax Credits
3. **Complex rates in a deregulated industry**
  1. Larger central electric service rates (hourly) allows customer minimize costs
  2. Technologies such as CHP, Fuel switching, Demand Response, Thermal Storage, Load Dispatch Software

