

# **“Trends in Energy Pricing”**

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## **Advanced Energy Management for Maryland Schools Workshop**

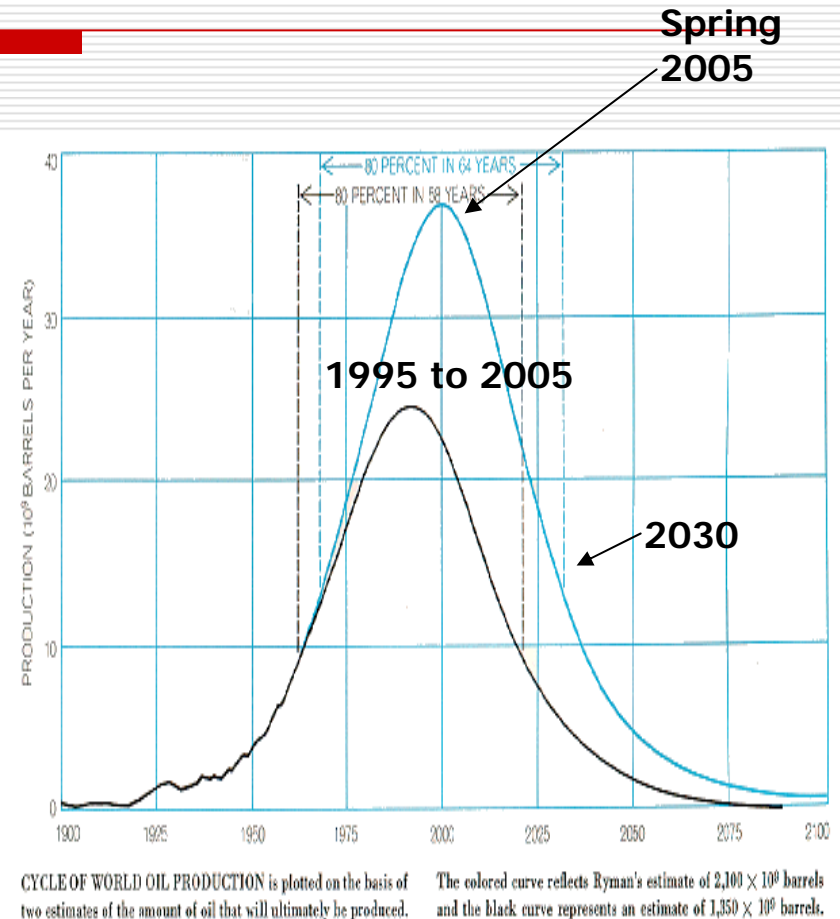
# Fact

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- ❑ World wide production of fossil fuels is decreasing at a rate of 1.3% per year
- ❑ The percentage of world production consumed by the United States and Europe is 75%
- ❑ The average growth in consumption per year of the developing nations is 2%
- ❑ China is increasing at a rate of 4.3%

# Decline of Oil – Next 50 Years

- The late **Dr. M. King Hubbert**, geophysicist, is well known as a world authority on the estimation of energy resources and on the prediction of patterns of discovery and depletion.
- Effectively apply principles of geology, physics, and mathematics to project **future oil production from the U.S. reserve base**.
- Prediction **in 1956** that U.S. oil production would **peak in about 1990 to 2005** and decline thereafter was scoffed at then but his analysis has since proved to be remarkably accurate.
- Author of *Energy and Power – A Scientific American Book*



# What Impact Prices?

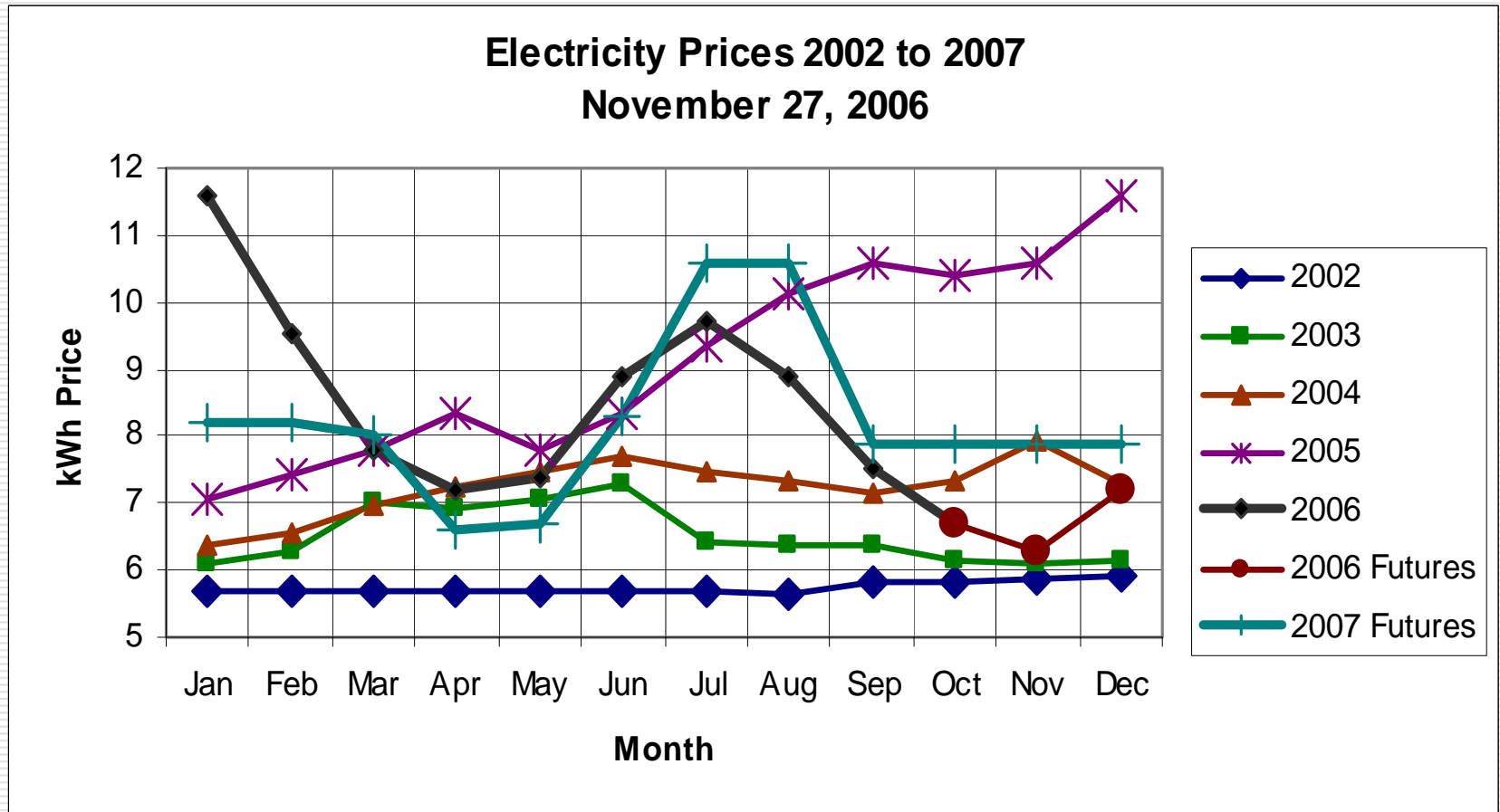
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# What impacts the price?

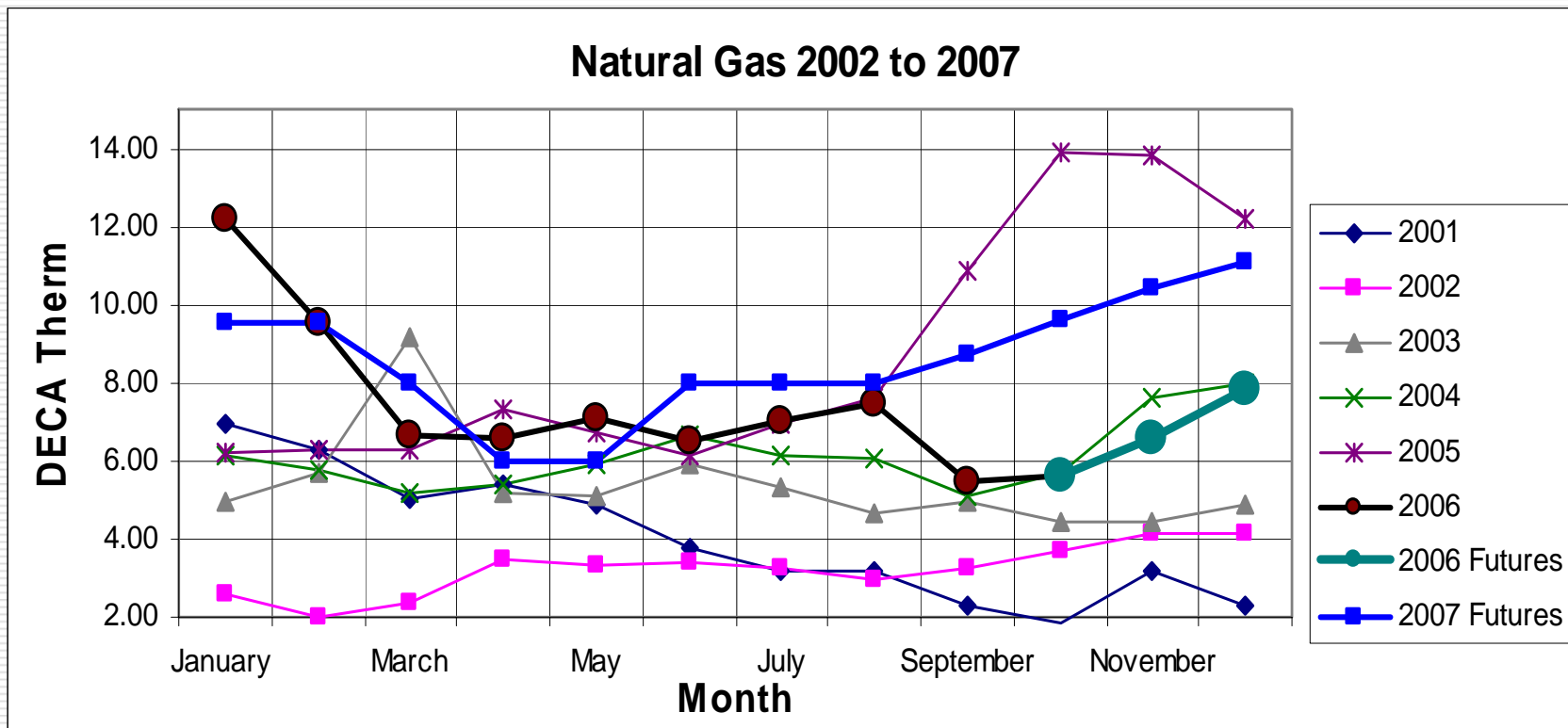
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- Weather
- Geo-Political
- Production Disruptions
- Fear
- Greed
- Demand
- Supply

# Energy Pricing – Electricity



# Energy Pricing – Natural Gas



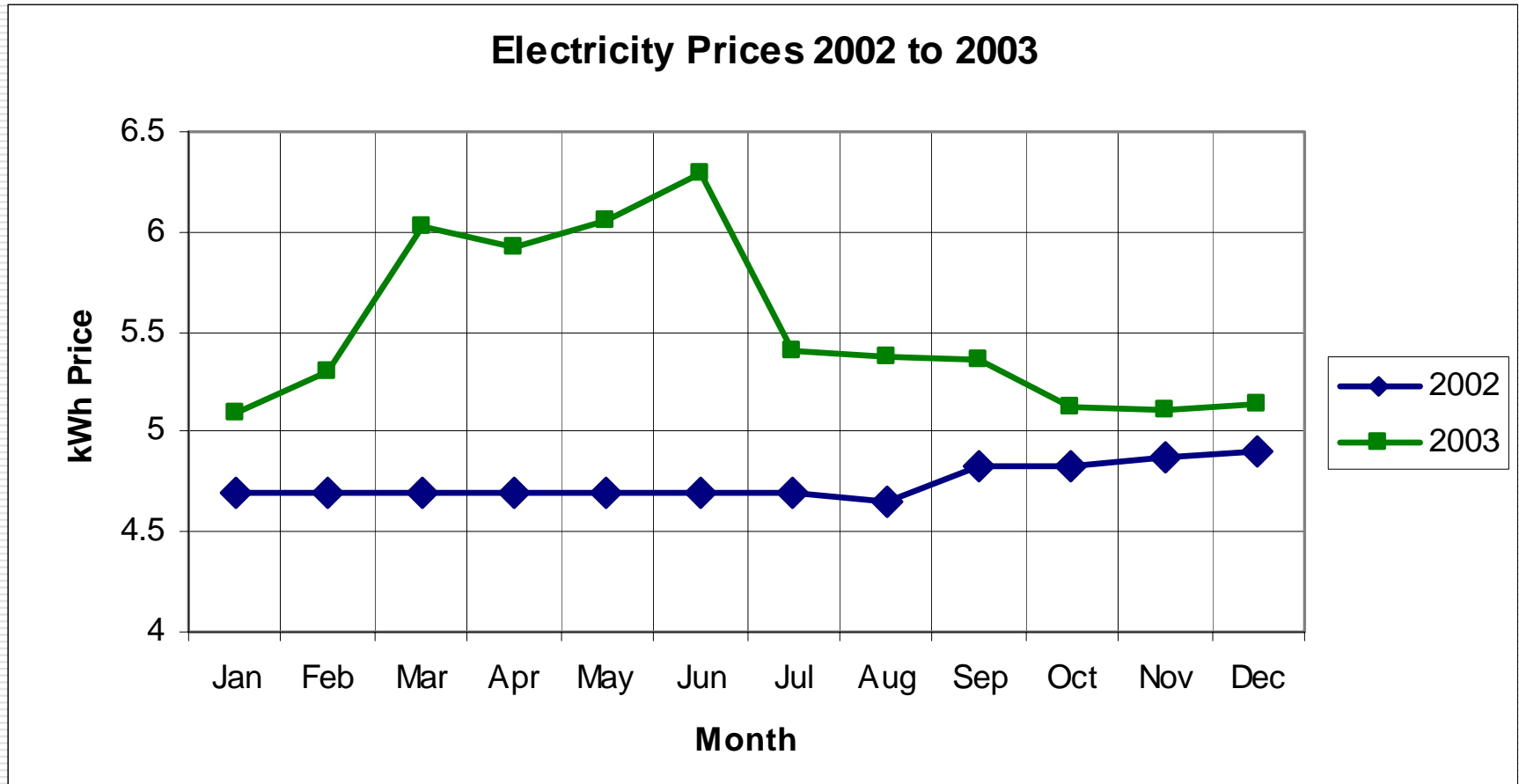
**Every Year is marked by**

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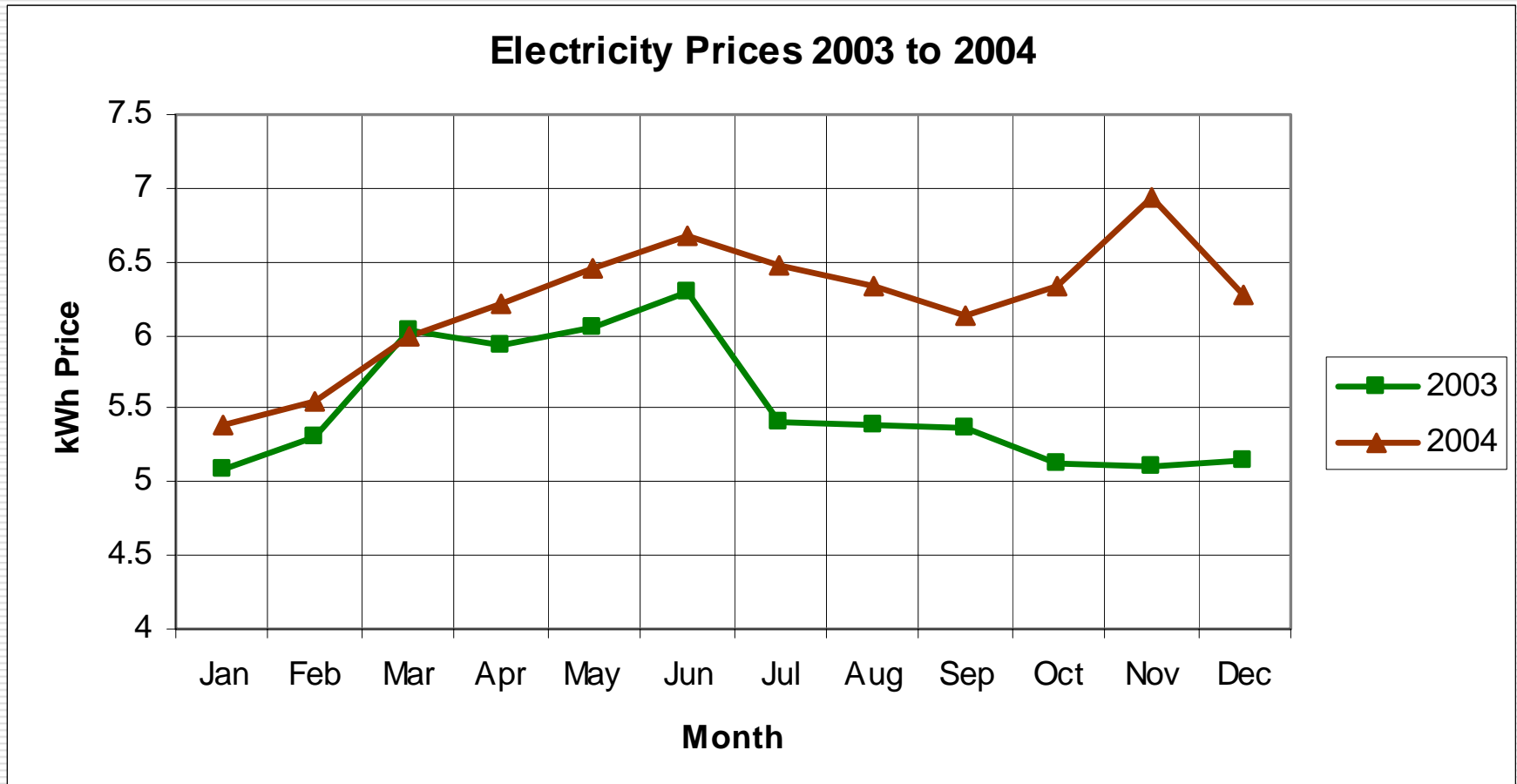
**a defining event**

# July 2002 – Change in Legislation

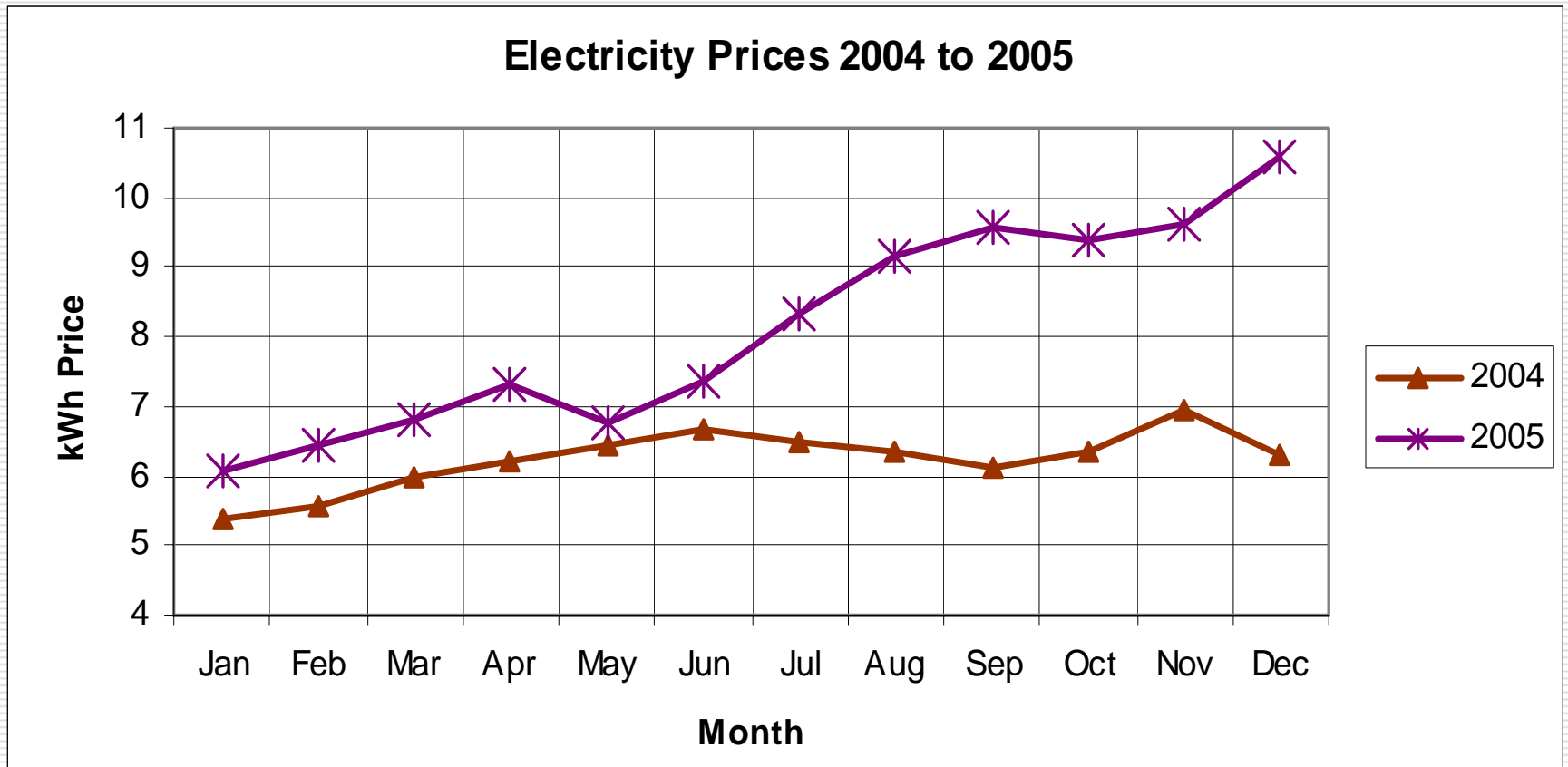
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# 2003 – Mid East War

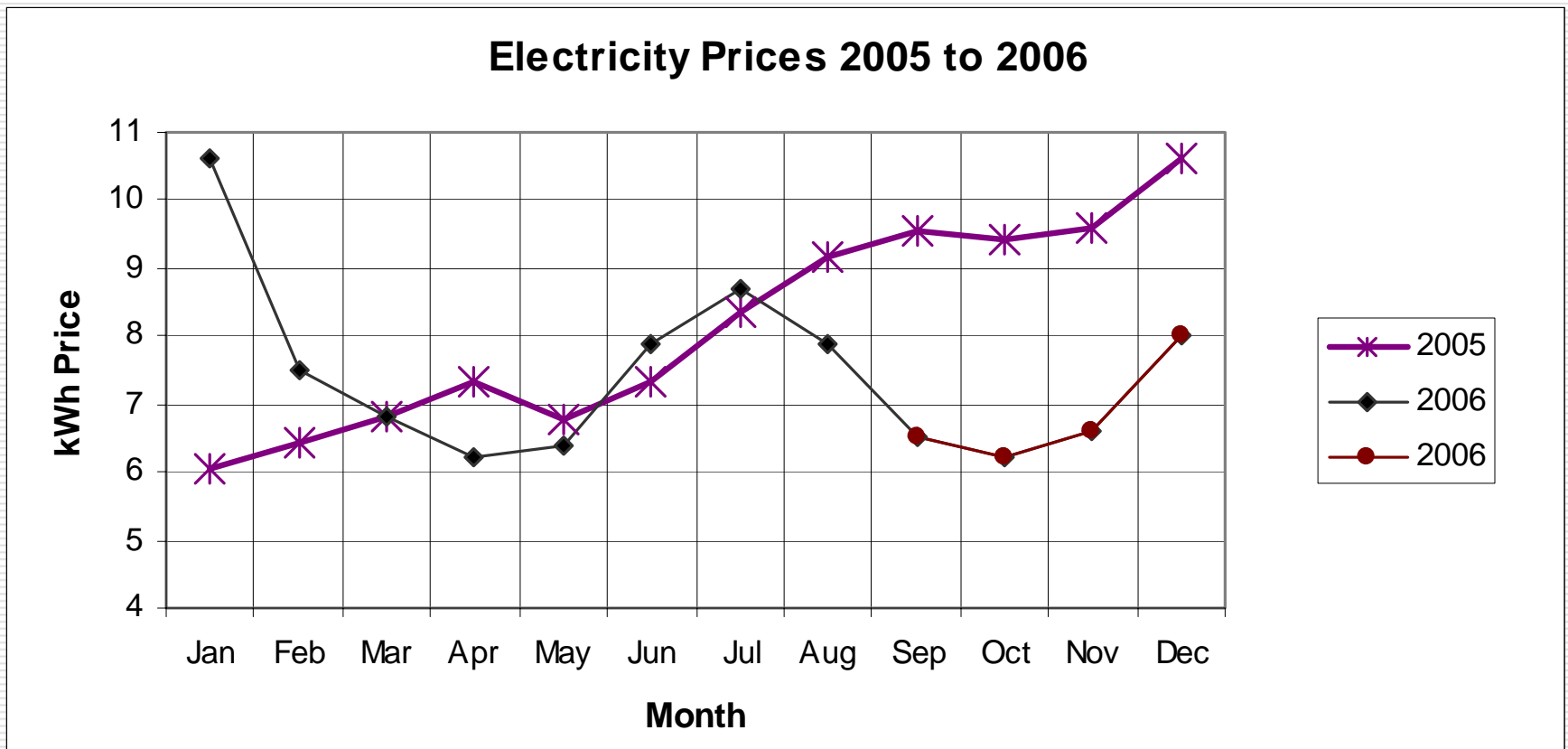


# 2004 – London/Spain Bombings & National Elections

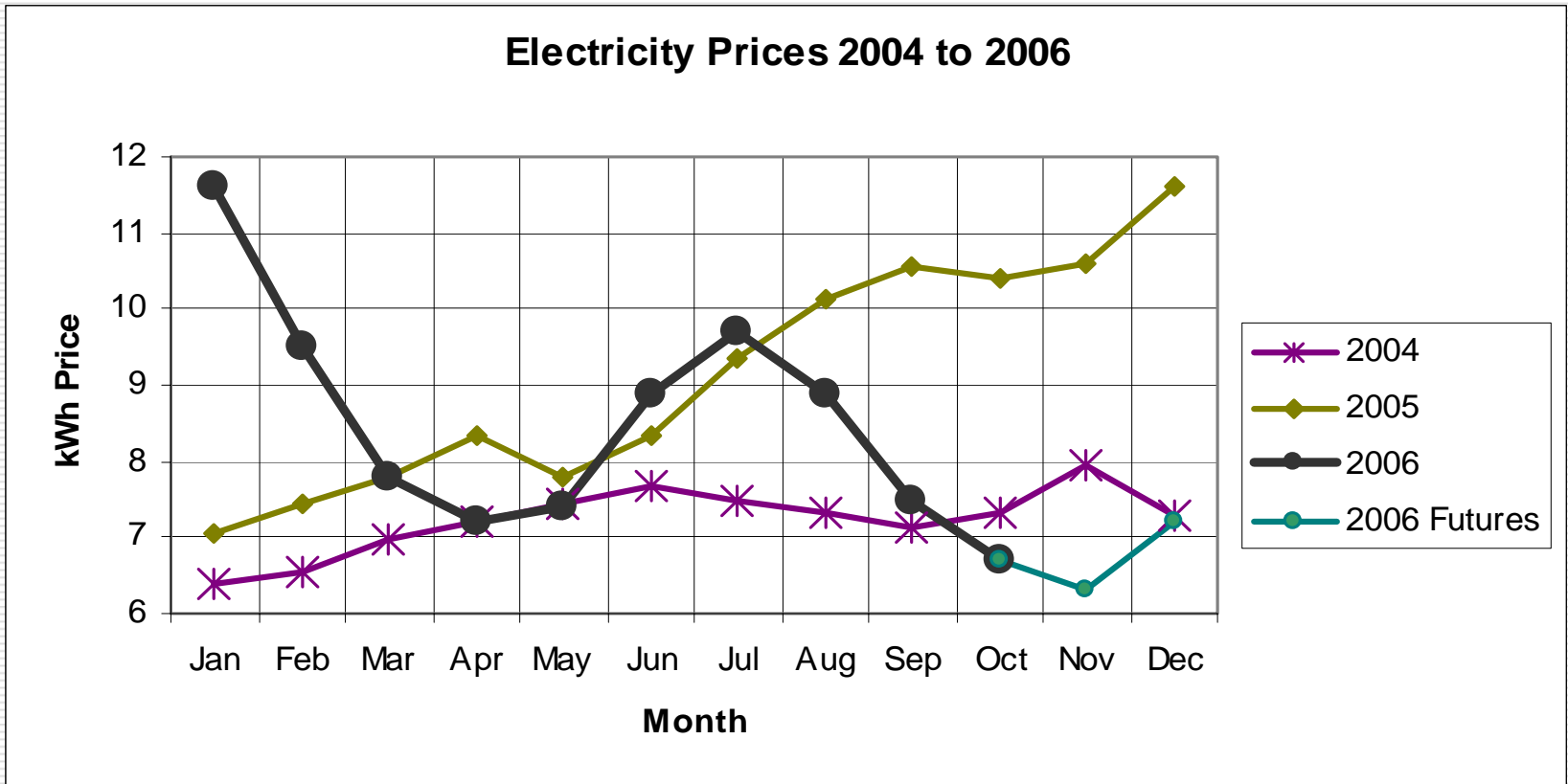


# 2005 – Hurricanes in the Gulf

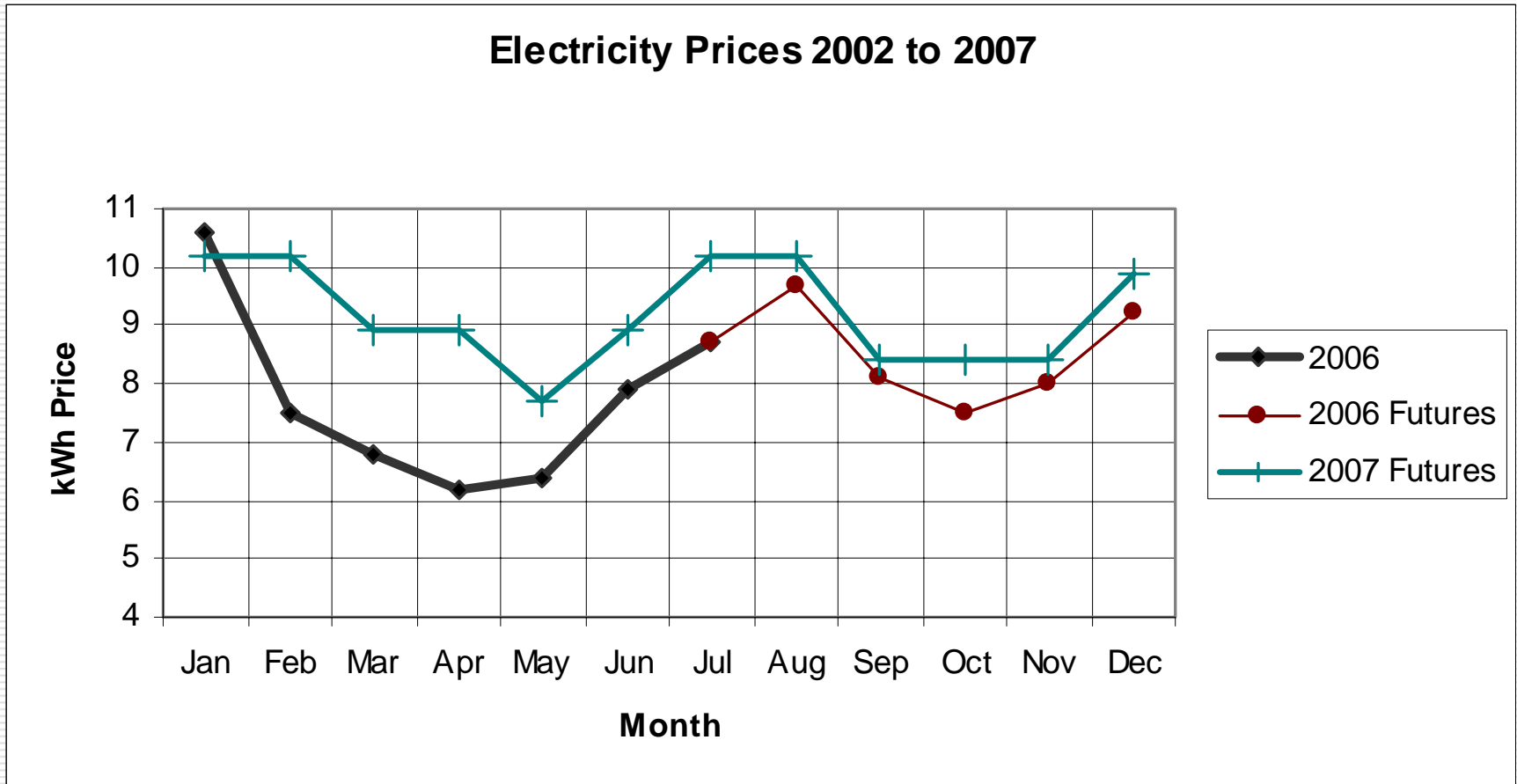
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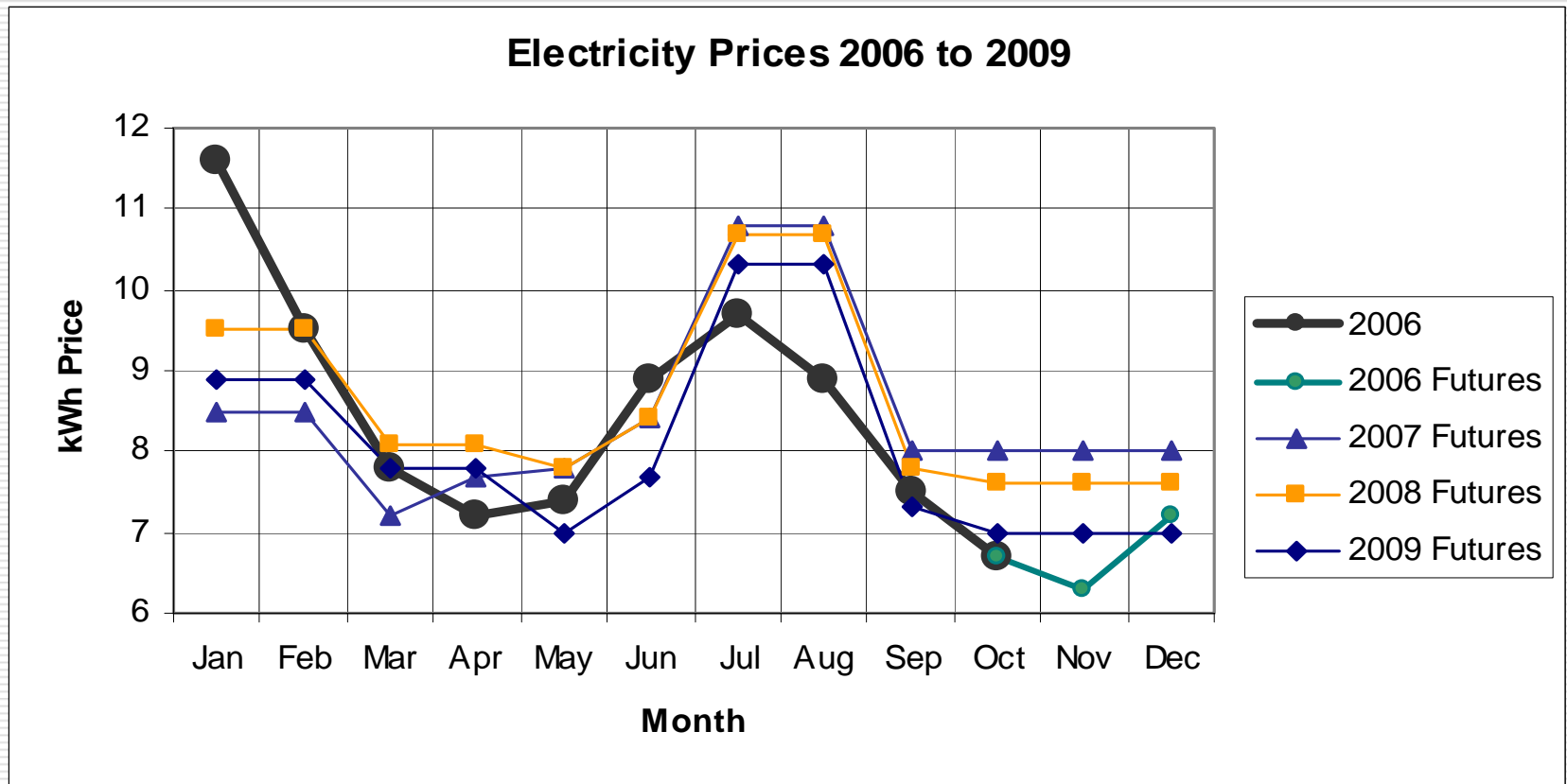
# 2006 – Mid East Conflict & No Hurricanes



# July 30, 2006 – Mid East Conflict



# Projection Current - Next Three Years



**In 2007 what will be the**

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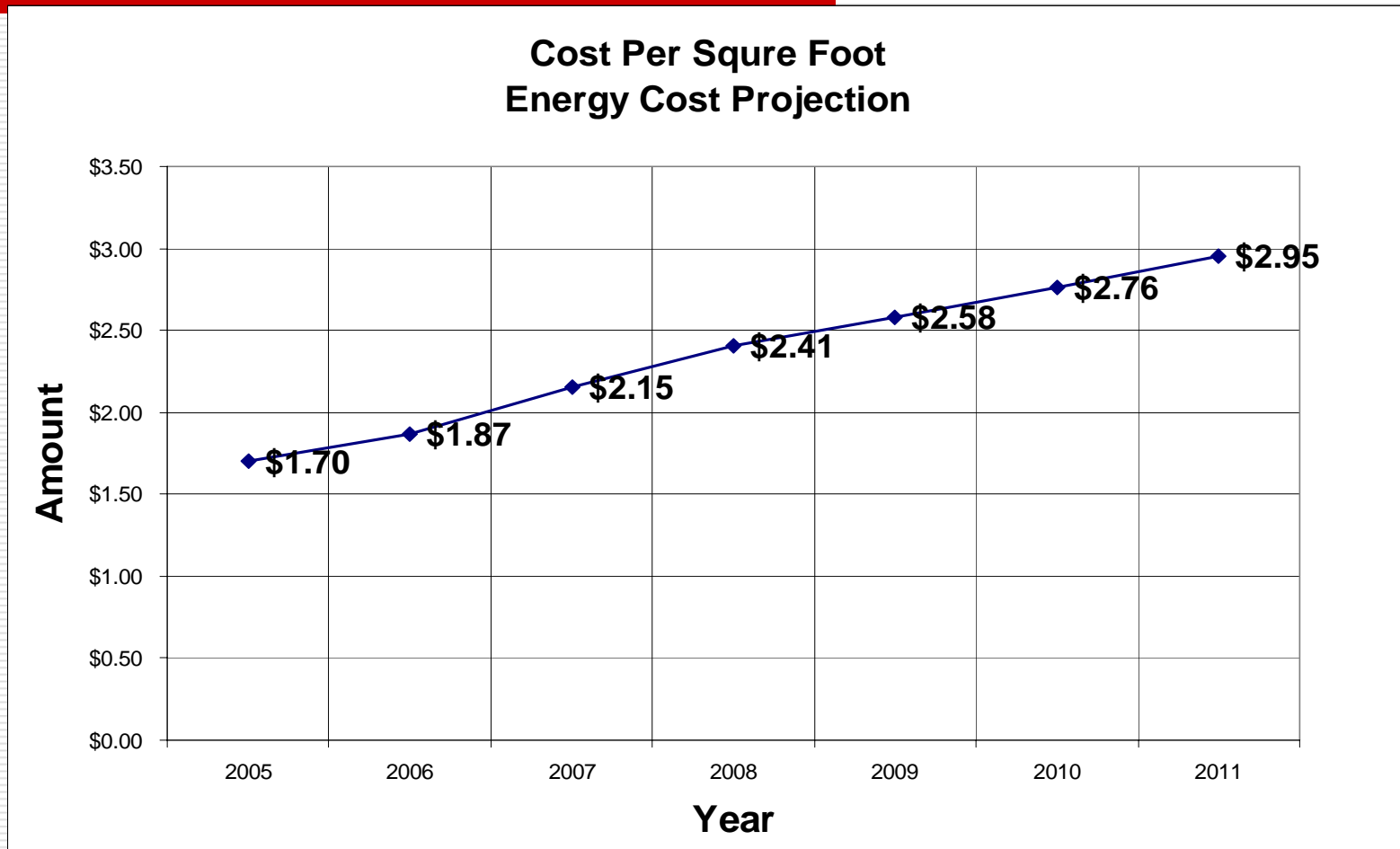
**defining event?**

# Defining Events?

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- Warm Summer
- Mild Winter
- Hurricanes in the Gulf
  
- Mid East Conflicts
- Terrorism
  
- Reduced U.S. Production
- Increased China & India Consumption
- Increased U.S. Consumption
  
- Fear
- Greed

# Five Year Cost Projection No Program

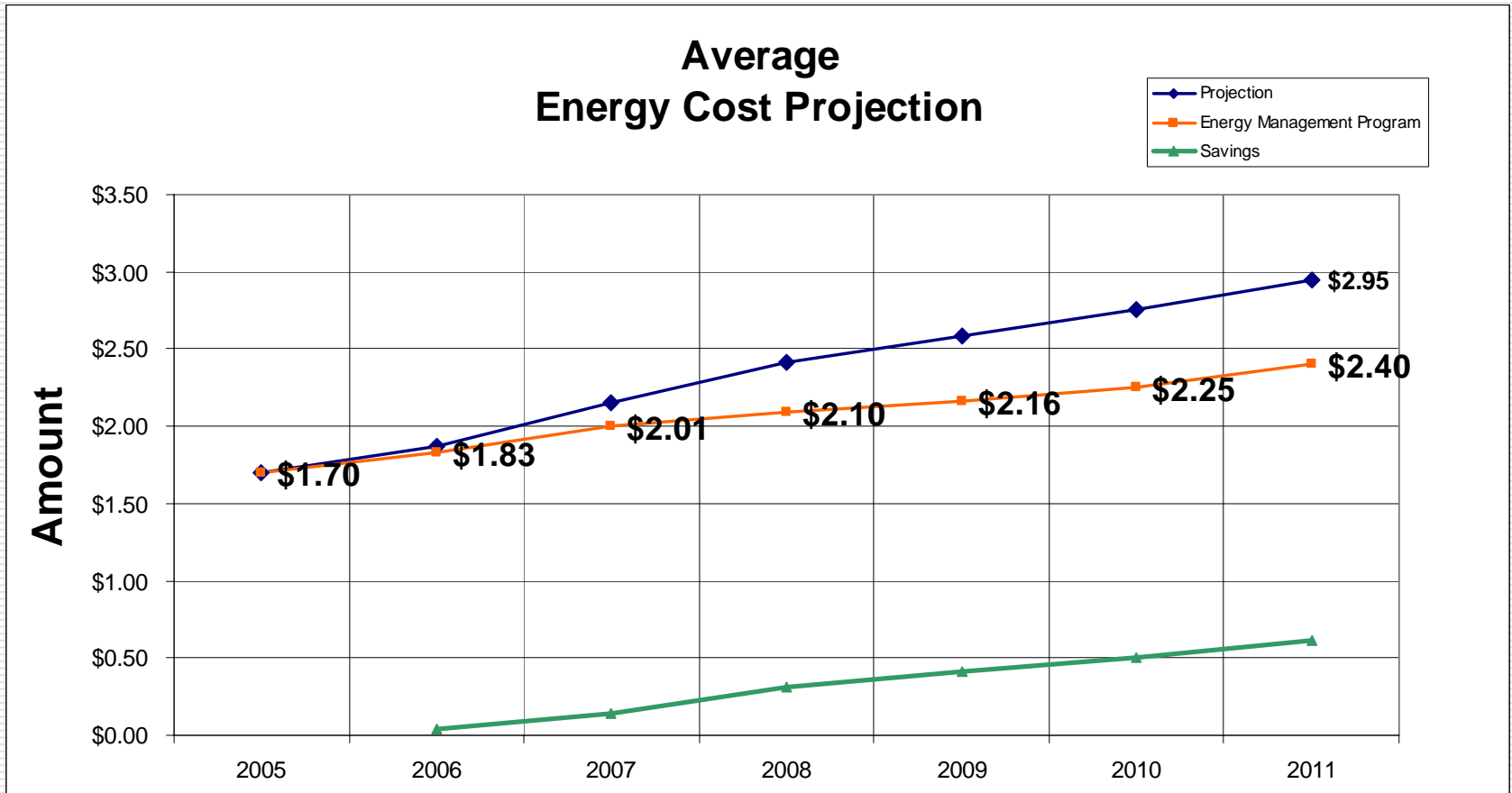


# Keys To Managing Energy

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- Develop a long-term strategic action plan
- Involve users to implement low cost improvements
- Improve existing equipment and system performance or efficiency
- Invest in cost effective energy retrofit projects to insure long-term savings
- Procure smart for long term budget stability
- Use LEED to measure performance

# Results with an Energy Management Plan



# Fuel Shifts

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- ❑ More Nuclear and Coal for electricity production
- ❑ Natural Gas production will be down domestically
  - Non-domestic liquefied natural gas production has potential if permitted
- ❑ Oil refining will be stable but no domestic increases
  - Non-domestic production and delivery will increase
- ❑ Prices will create increased conservation and energy management efforts especially by the business sector
- ❑ Alternative energy use will increase
- ❑ Hybrid auto production will increase
- ❑ Research and development will increase

## What will the situation look like in 2010?

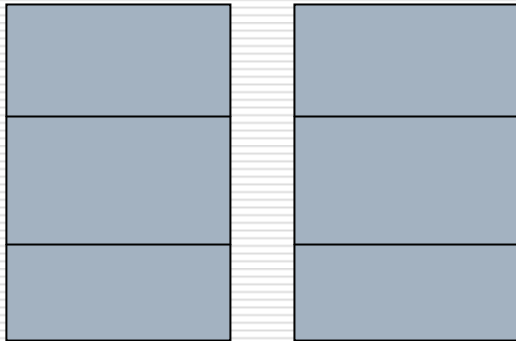
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- ❑ Developing countries will demand 35% of the world's production
- ❑ Significant demand will be placed on the combined US/Europe consumption rate
- ❑ Production in the U.S. will continue to be hampered by the lack of refining capacity
- ❑ Exploration will increase as a result of the new energy legislation in 2008-2009 and add 3%
- ❑ Conservation will provide relief in the short term, 10% to 15% estimated (Need 20%)

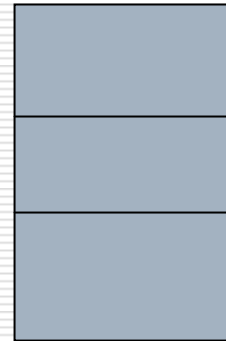
# Two for One?

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Two Barrels of Oil



For One Barrel of Oil



# **DOE Report Dec. 12, 2005**

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**The impact will increase prices by 50% and reduce supply by 15% in five years**