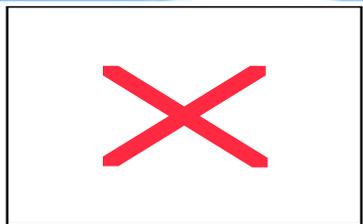

Give Your Health Building a Tune Up

Give Your Energy
Strategy ~~Some Traction!~~

Don King
Director,
Maintenance Operations
Consulting Services



What's the status of your energy strategy?



**Filling Station
9: Practical
Application
Skills**

- Don't have one
- Don't have one, but act like we do
- Have one and can probably find it on my shelf
- Have one and use it to guide energy related decisions and initiatives
- Have one, but need to review/revise it

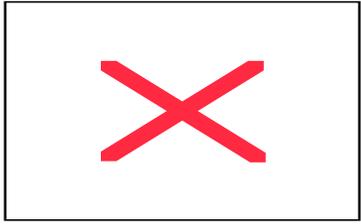


Objectives



**Filling Station
9: Practical
Application
Skills**

- Learn tools and techniques to gain acceptance and support of your energy strategy
- Understand drivers and elements of various energy strategies
- Identify key stakeholders in an energy strategy



Evolution of Health Care Energy Strategy



The Health Care Business Environment

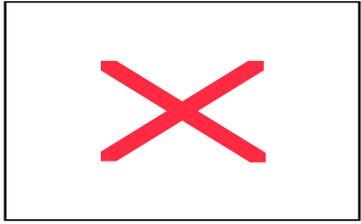
**Filling Station
9: Practical
Application
Skills**

- Financial duress
- Significant regulation
- Complex business processes
- Large energy consumer
- Low % of overall business \$'s

Initial



Comprehensive



Initial Energy Strategy Drivers



**Filling Station
9: Practical
Application
Skills**

- Deregulation
- Rate Increases
- Rolling Blackouts
- Energy Conservation

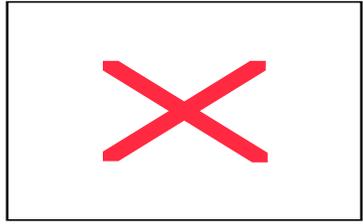


Traction Tip #1



**Filling Station
9: Practical
Application
Skills**

- Ensure that demand and interest thresholds are met before expending significant effort on an initiative



Initial Energy Strategy Elements



Filling Station
9: Practical
Application
Skills

- low cost/no cost operational energy conservation initiatives
- Fix unit costs through long term contracts
 - Investor owned utilities
 - Municipal utilities
- Load Factor Improvements
- Energy Conservation Measures (ECM's)



Traction Tip #2:



Filling Station
9: Practical
Application
Skills

- Turn Strategy into Policy
 - HR policy for rolling blackouts
 - Regional policies for operational energy conservation
 - Building occupants
 - Plant operations
 - Regional energy procurement
 - Energy efficient design standards



ECM Technologies



Filling Station 9: Practical Application Skills

1. High/low lighting for parking areas
2. Design 2 duct system (reduce static pressure)
3. Vestibules with double sets or revolving doors
4. Day lighting
5. Energy efficient fixtures
6. Occupancy sensors/timers/photocell & high/low controls
7. Independent lighting controls for areas >250 sq ft
8. Hybrid chilled water plant with gas-engine chiller
9. Variable speed pumping for heating/chilled water systems
10. Variable speed drives for air handling units
11. Variable speed drives for an additional electric chiller
12. Heat recovery system for air handling units
13. Heat recovery system for gas engine chiller
14. Heat recovery system for all boilers
15. Coil bypass on AHU and EAU
16. Full DDC controls for hospitals
17. Supply air temperature reset based on zone demand
18. Chilled water temperature reset based on zone demand
19. Premium efficiency motors for all > 1HP and operating > 6 hrs/day
20. Recommended commissioning program
21. Feasibility of green energy to be studied
22. Enabling design for cogen, photovoltaic, bio-fuel boilers



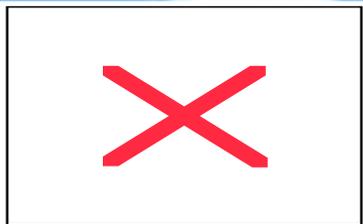
Outcome



**Filling Station
9: Practical
Application
Skills**

■ Energy Conservation

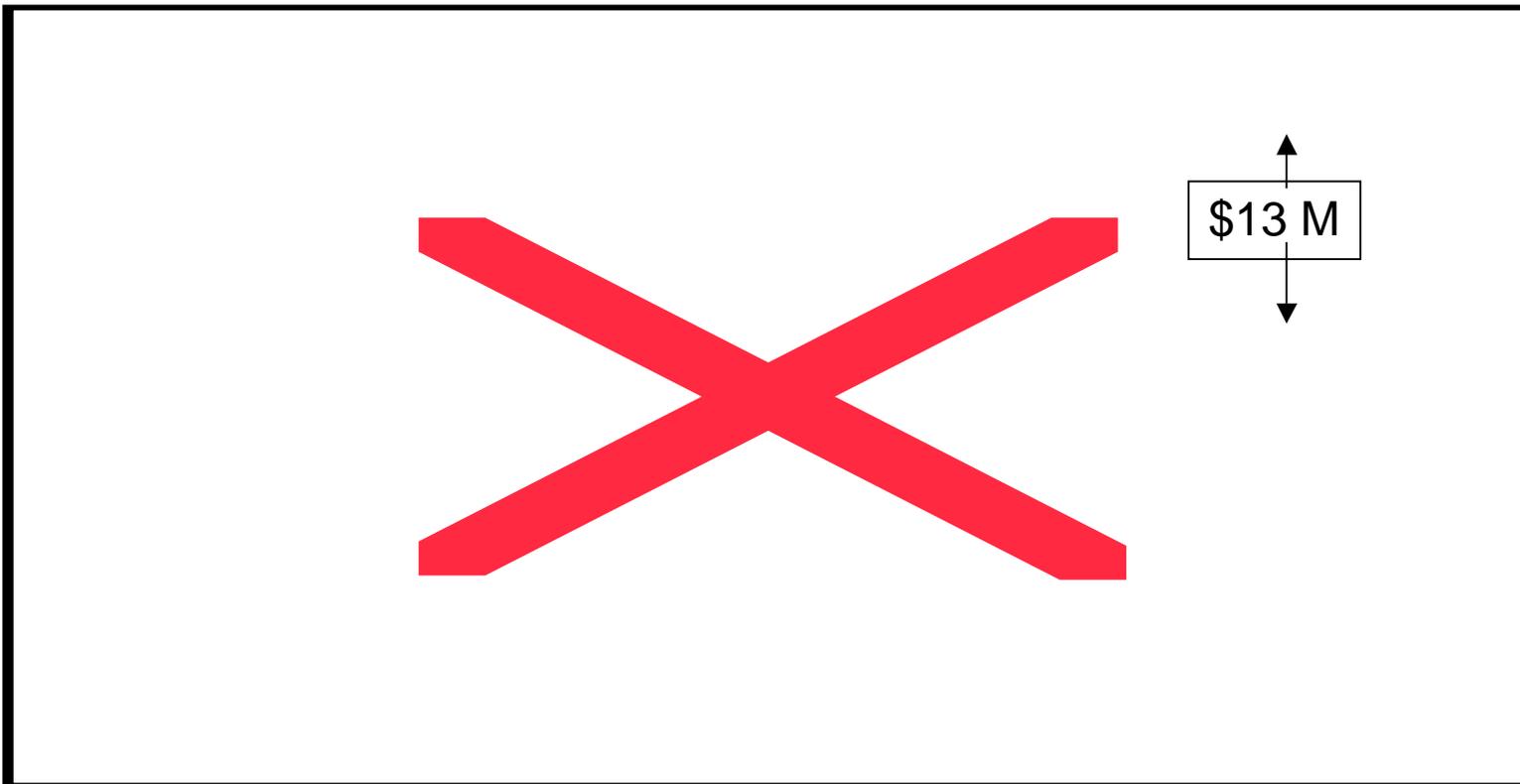
- Focused energy conservation program on high \$/sq ft users and areas with high risk post deregulation
- Drafted and distributed document with energy conservation instructions for employees use at work
- Drafted and distributed engineering guide for energy conservation to facility engineers
- Designing chilled water plants to consume natural gas and/or electricity offering choice of the lowest cost utility
- Partnering with IT in giving direction for the most efficient use of workstation energy



Traction Tip #3: Describe the Risk



**Filling Station
9: Practical
Application
Skills**





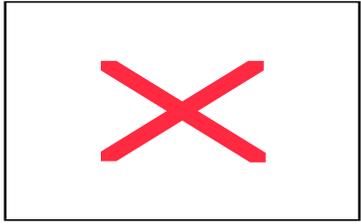
Outcome



**Filling Station
9: Practical
Application
Skills**

■ Procurement

- \$56 Million Spend in California
- 85% Protected from rate increases by long term contracts
- 10% Protected by the local municipal utility
- 5 % Subject to rate increases

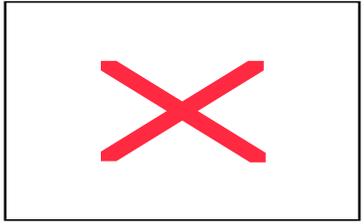


Comprehensive Energy Strategy Drivers



Filling Station 9: Practical Application Skills

- Extremely unstable utility market (*electricity/gas*)
- Spend exceeds \$100,000,000 / year
- High visibility of utility issues (*more understanding and concern*)
- Issue has become highly politicized (*increases risk and unpredictability*)
- Sharp increases in utility expense now and in the near future 2002 to 2003 inflation for California electrical approaches double digits (levels that cannot be accommodated by rate structure)
- Impending expiration of energy contracts (*no possibility of extension or renewal*)
- Availability of matching funds and grants for energy conservation
- Alignment of national, regional and service area goals
- Current capital plan review/reallocation efforts
- Legislation and regulation rival technology issues for impacting cost
- Strong interaction between energy and environmental issues has included energy conservation in charter and goals of Environmental Stewardship Council



Environmental Stewardship

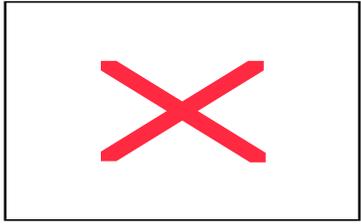


“We aspire to provide health care services in a manner that protects and enhances the environment and health of communities now and for future generations”

**Filling Station
9: Practical
Application
Skills**

Environmental Stewardship Council

- Green Buildings
- Environmentally Responsible Purchasing
- Sustainable Operations

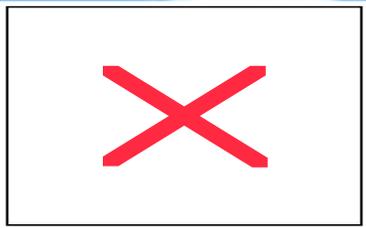


Sustainable Operations Challenge

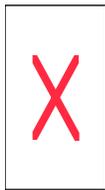


**Filling Station
9: Practical
Application
Skills**

- Minimize the environmental, health and safety risks to our employees, members and the communities in which we operate
- Reduce and make continual progress towards elimination of the release of substances which may cause damage to the environment
- Make prudent use of renewable resources

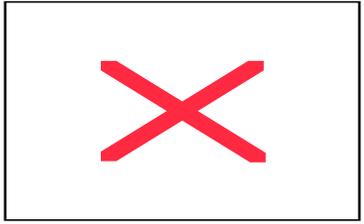


Environmental Stewardship Link to Energy Strategy



**Filling Station
9: Practical
Application
Skills**

“The current energy situation demands immediate and decisive action on the part of all large businesses. Additionally, Kaiser Permanente has chosen to eliminate or mitigate the impacts of its operation on the environment, in an effort to improve the overall health of its membership.”

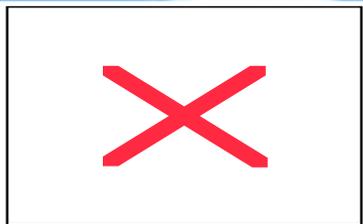


Traction Tip #4 Link to Other Initiatives



Filling Station
9: Practical
Application
Skills

- Leverage support by linking to other organizational initiatives
 - Support from leadership
 - Regulatory requirements
 - Financial support
 - Grass roots support
- Ensure that metrics are aligned

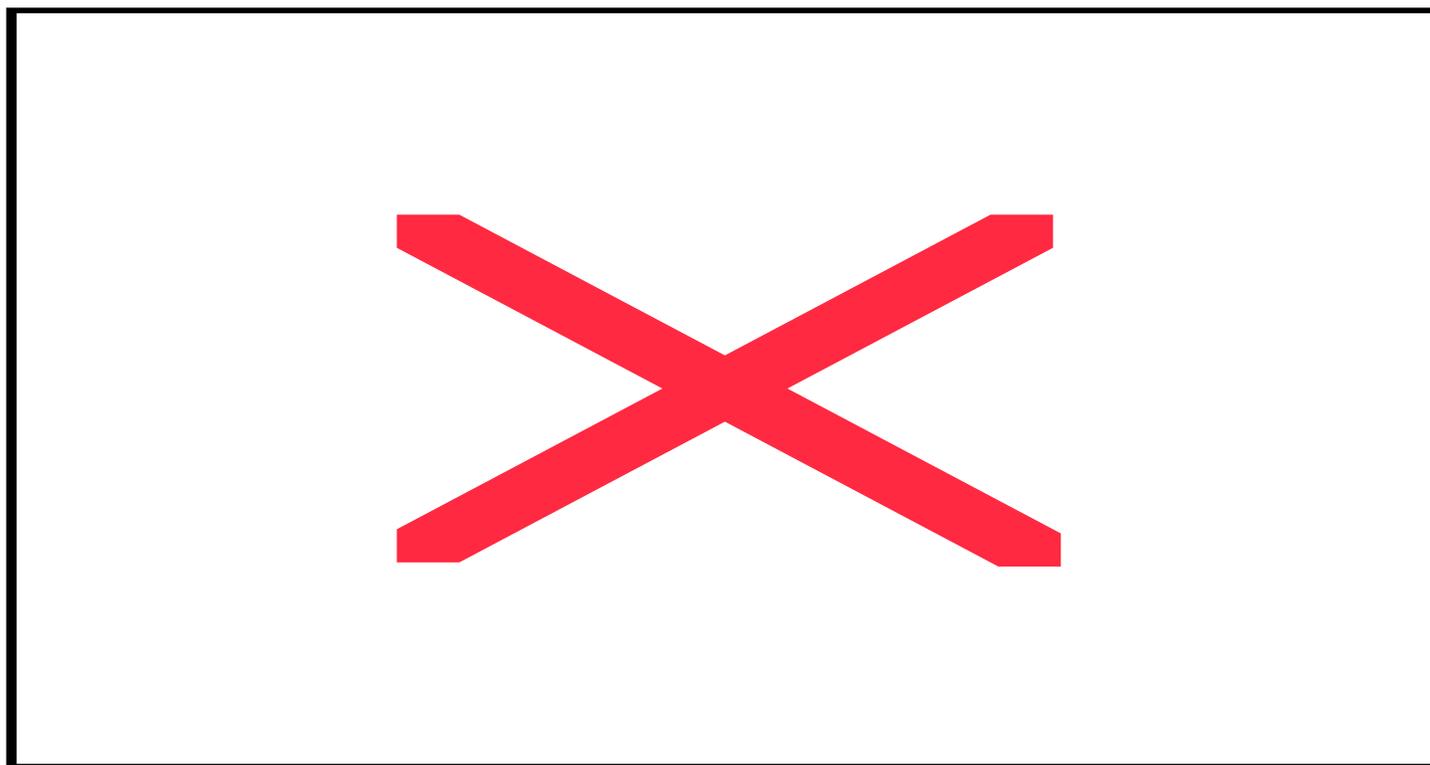


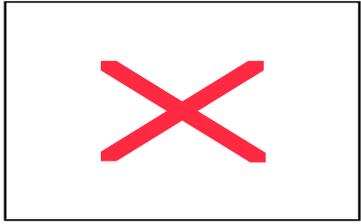
Historic Financial Impact

(remember Traction Tip #3?)



**Filling Station
9: Practical
Application
Skills**





Energy Strategy Stakeholders



Filling Station
9: Practical
Application
Skills

- Nat'l Facilities
- Sustainable Operations Comm.
- Govt. Relations
- Legal
- Co. Facilities
- NW Facilities
- N. Ca. Facilities
- Hi. Facilities
- S. Ca. Facilities
- Electrical Engr.
- Mechanical Engr.
- Energy Consultant



Strategy Elements



**Filling Station
9: Practical
Application
Skills**

■ Sustainable Operations

- Waste Minimization and Management
- Optimal Use of Multiple Use Products
- Equipment Life Cycle Management
- Energy Conservation
- Chemical and Substance Management
- Employee Awareness
- Community Alignment

■ Energy Strategy

- Situational analysis
- Goals, objectives, performance measurement
- Technical
- Influence
- Operational
- Procurement
- Sustainability
- Oversight
- Implementation

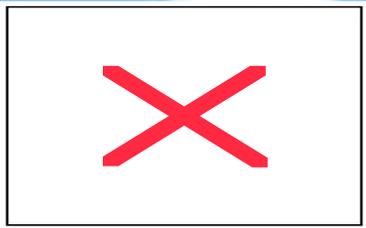


Energy Strategy Process



**Filling Station
9: Practical
Application
Skills**

- Form Energy Strategy Workgroup
- Identify key elements and define tasks to complete elements
- Information gathering and document drafting
- Integration and editing
- Define approval process/structure
- Submit for approvals
- Implement and monitor
- Review and revise

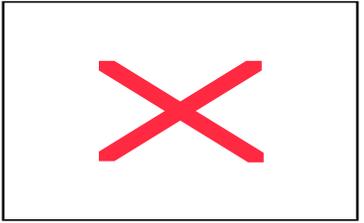


Energy Strategy



Filling Station
9: Practical
Application
Skills

- Expected outcomes -Technology
 - Update current standards
 - Promote aggressive compliance
 - Financial model for exploring energy technologies during design phase, including estimated costs to implement
 - Standard life cycle analysis tool that aligns project objectives with operational goals
 - Incorporate enabling designs

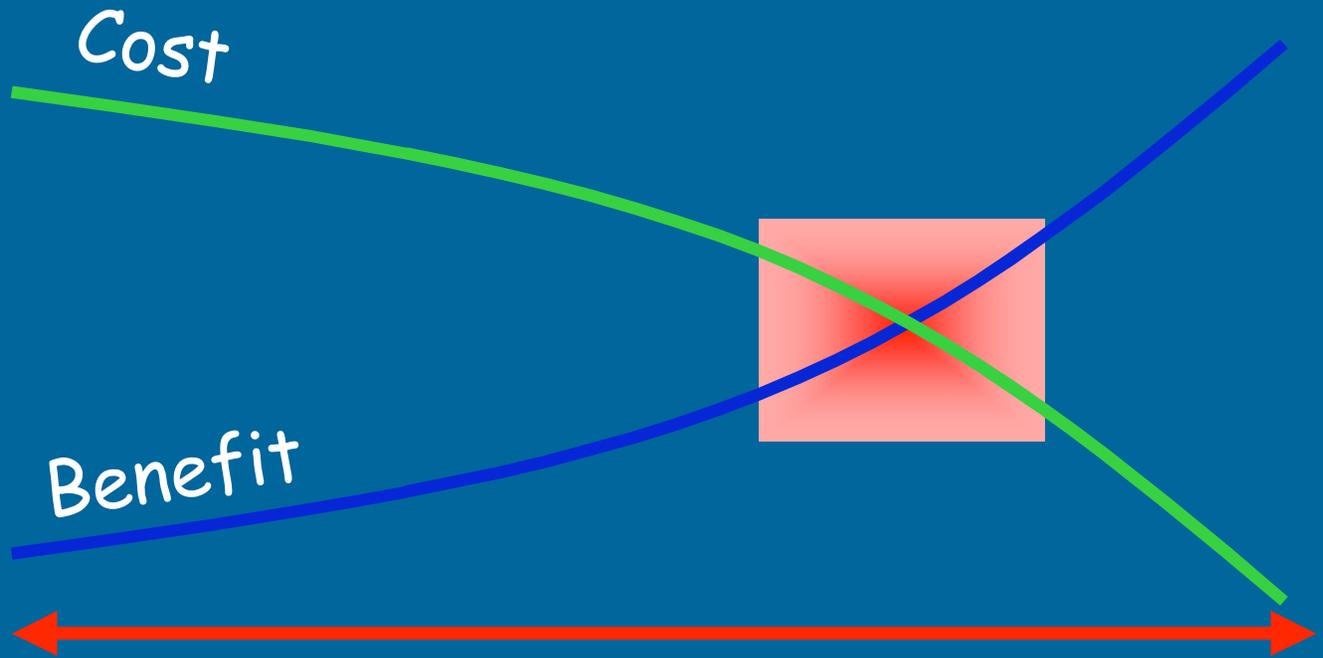


Life Cycle Benefit

(Traction Tips #2 & #3)

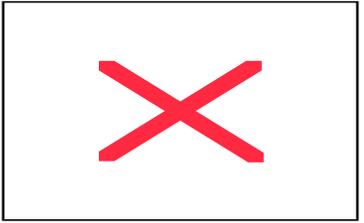


Filling Station
9: Practical
Application
Skills



Building Life Cycle

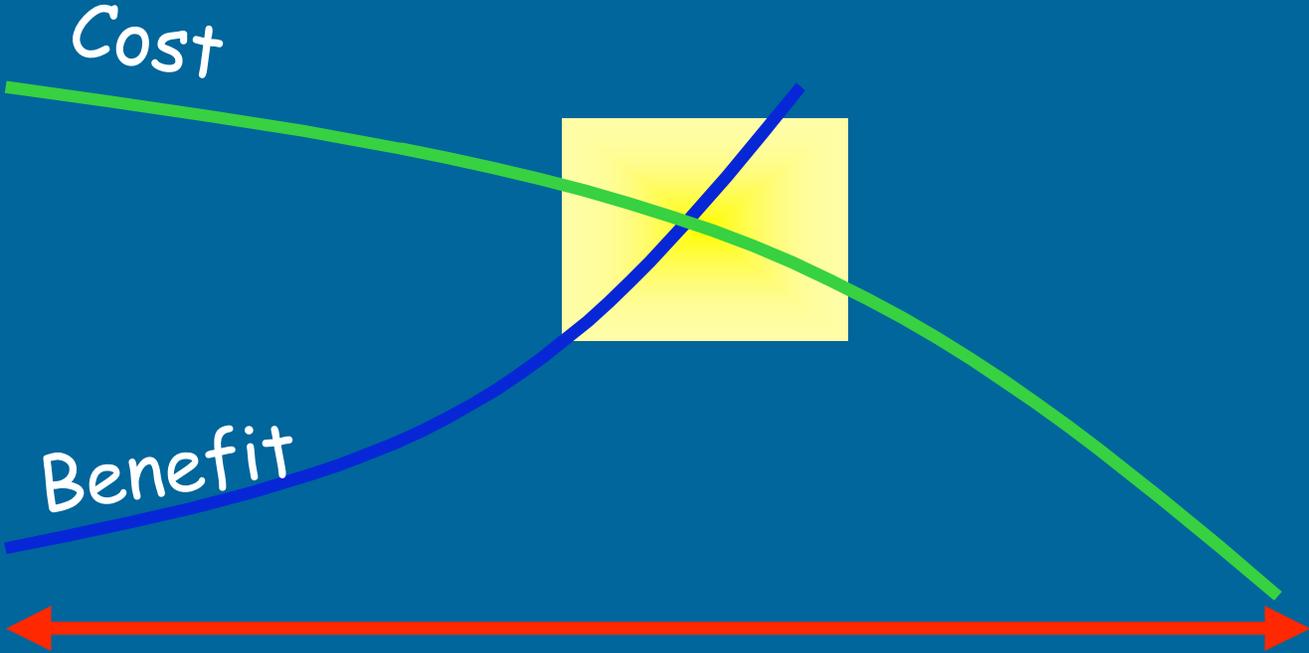
Energy 2006 - D. King



Life Cycle Benefit

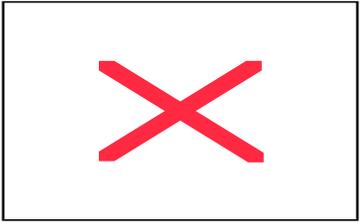


Filling Station
9: Practical
Application
Skills



Building Life Cycle

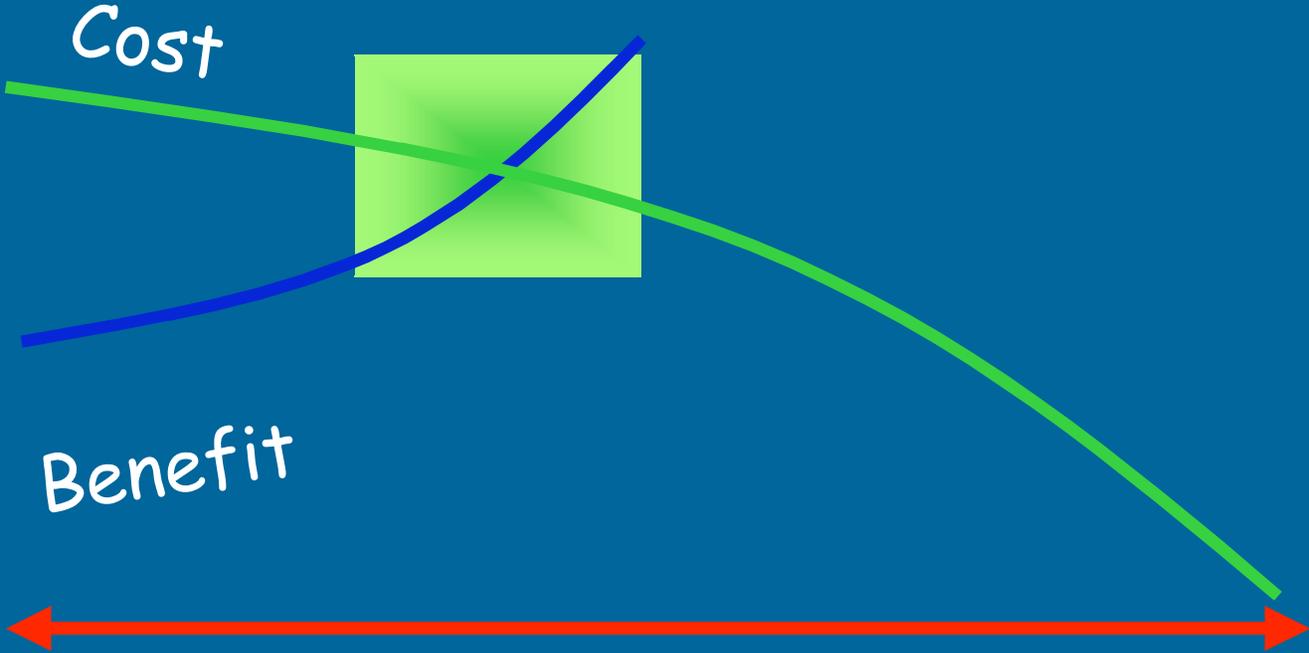
Energy 2006 - D. King



Life Cycle Benefit

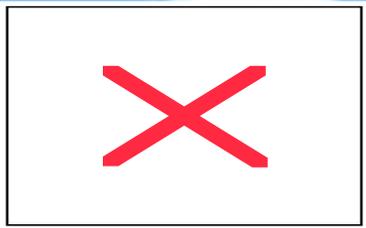


Filling Station
9: Practical
Application
Skills



Building Life Cycle

Energy 2006 - D. King



Energy Strategy

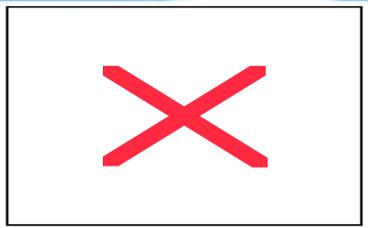


**Filling Station
9: Practical
Application
Skills**

■ Expected outcomes -Technology

(cont'd)

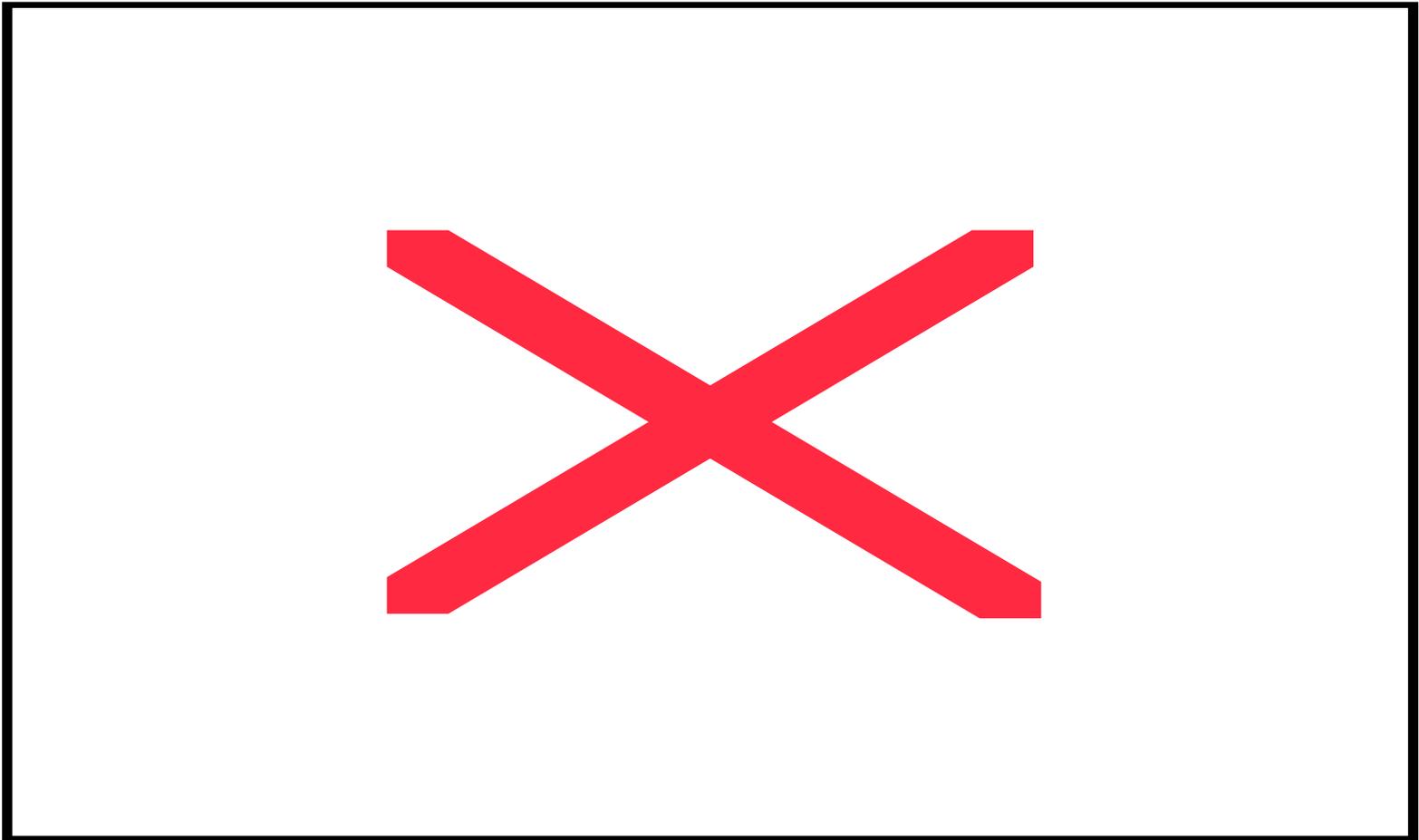
- Align national equipment contracts, cost model and design standards
- Renewed focus on cogeneration and other alternate energy technologies
- Coordination with templated hospitals work



Cogen Evaluation Tool



**Filling Station
9: Practical
Application
Skills**





Energy Strategy



**Filling Station
9: Practical
Application
Skills**

■ Expected outcomes - Influence

- Adopt energy strategy that properly frames KP position on energy and sustainability
- Continuous monitoring of pending legislation and regulation with rapid response
- Mechanism to engage KP government relations in lobbying for energy issues, when appropriate
- Foster collaboration among organizations with interests and situations similar to ours

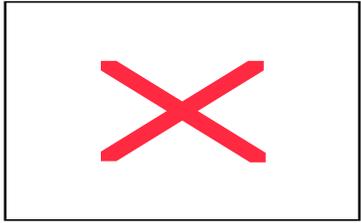


Energy Strategy



**Filling Station
9: Practical
Application
Skills**

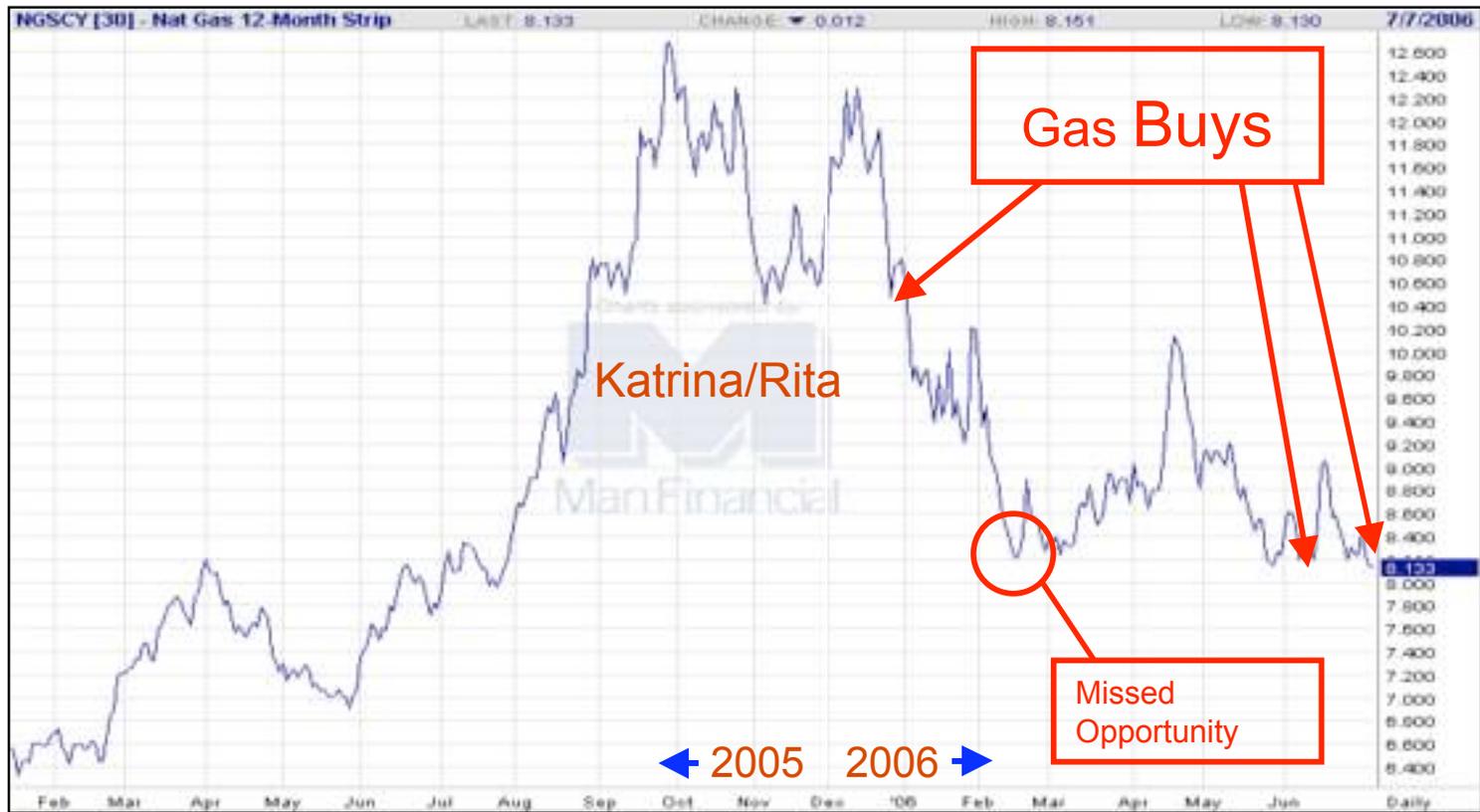
- **Expected outcomes - Sustainability**
 - Align energy strategy with KP's commitment to the environment
 - Incorporate direct and indirect environmental impact into decisioning models for both technology and procurement initiatives
 - Foster the development and use of renewable energy sources through pilot programs where feasible



Procurement – 2006 Natural Gas

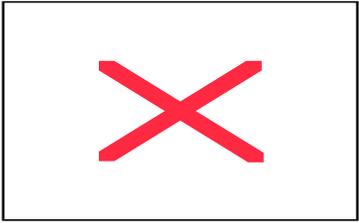


Filling Station
9: Practical
Application
Skills



ADVANTA
ENERGY

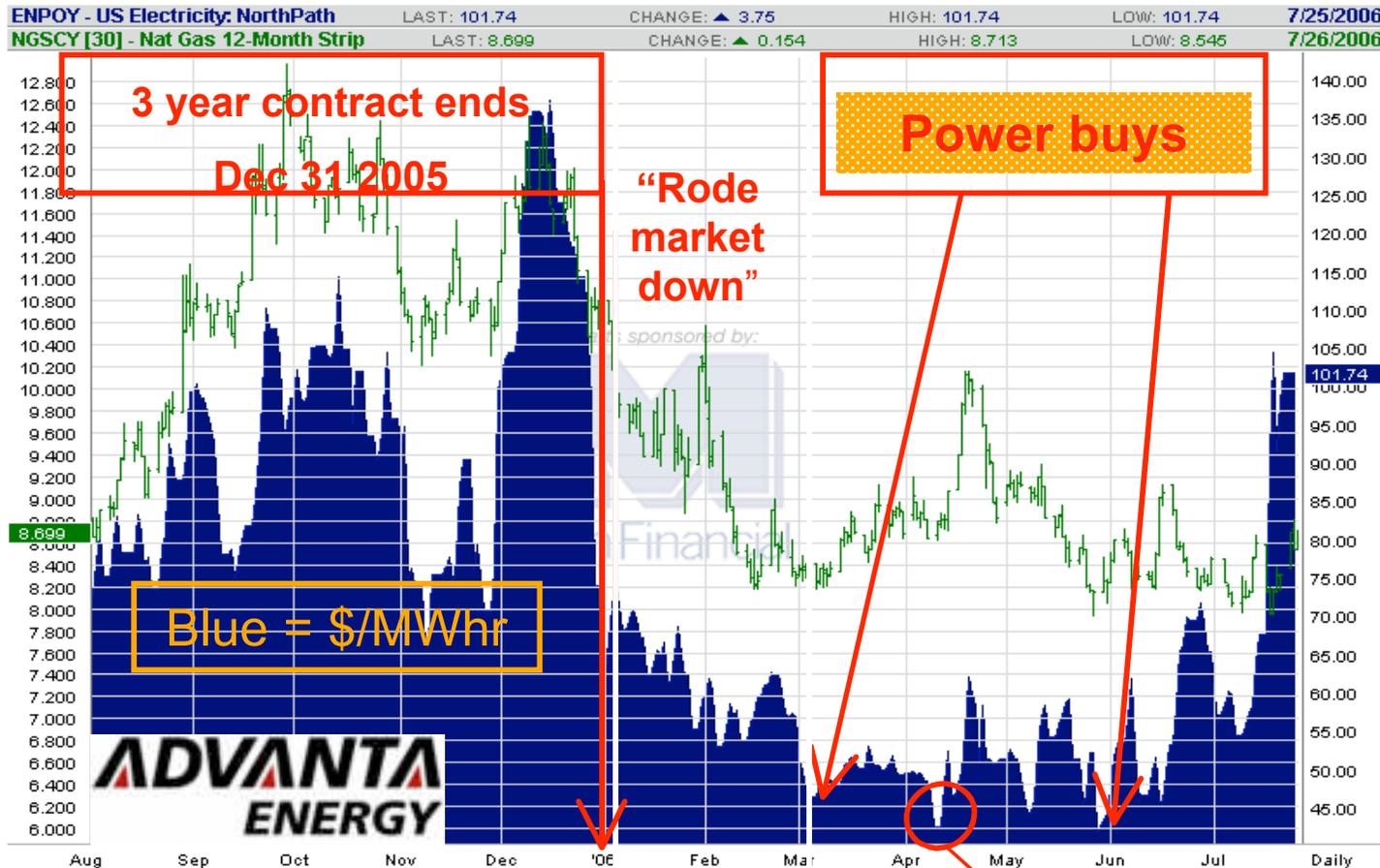
KAISER PERMANENTE



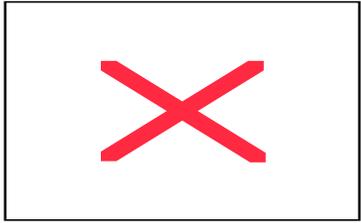
Procurement – 2006 Electrical



Filling Station
9: Practical
Application
Skills



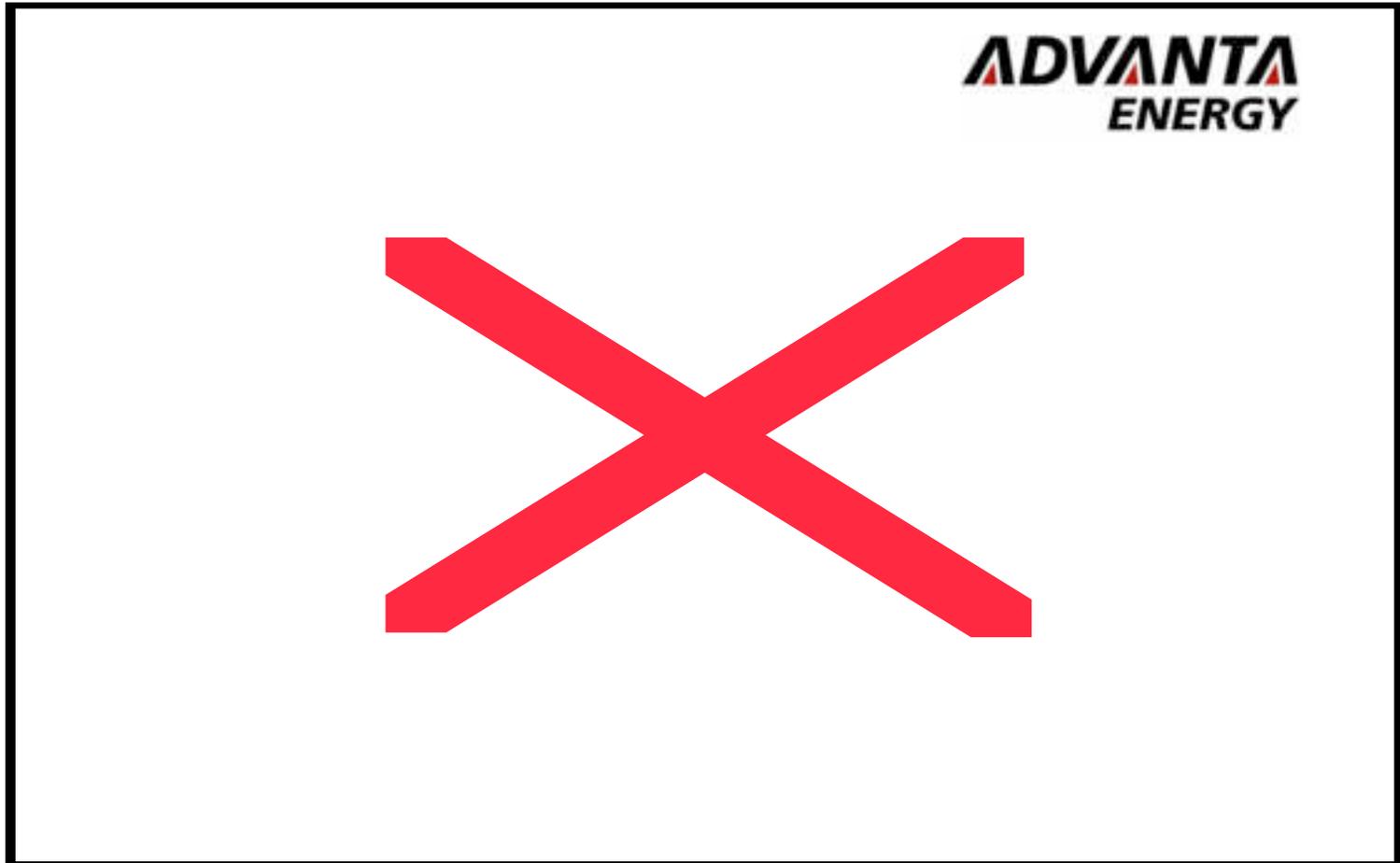
Missed Opportunity



Procurement – 2006 Hedge Position Goal



**Filling Station
9: Practical
Application
Skills**



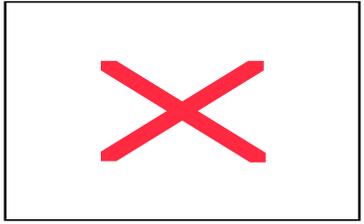


On the Horizon



**Filling Station
9: Practical
Application
Skills**

- Trigger price procurement
- Capital Plan
- Commissioning
- Energy Information System
- Greenhouse Gas Emissions



Traction Tip: Summary



**Filling Station
9: Practical
Application
Skills**

1. Ensure that demand and interest thresholds are met before expending significant effort on an initiative
2. Turn strategy into policy
3. Describe the risks
4. Link to other initiatives