

ACEEE:

Next Generation Strategic Energy Management

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Scenario Planning Background:

- Purpose:
Strengthen and elevate the long-term strategic energy and climate protection planning capabilities of U.S business
- Method:
Scenario-based analysis of the energy environment through the year 2020

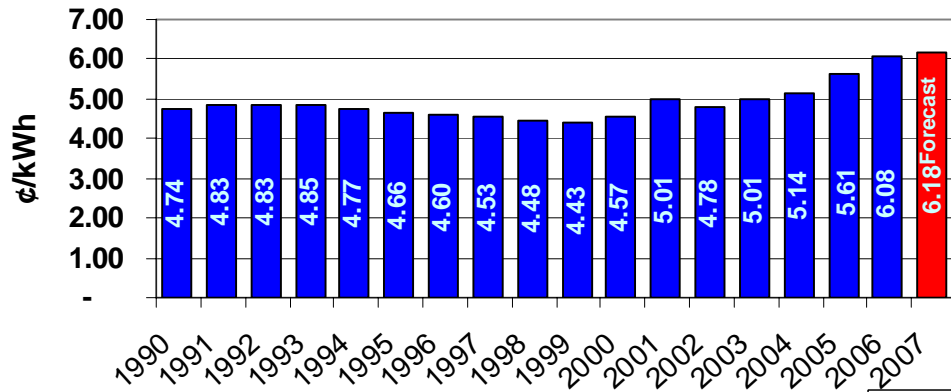
Scenarios Developed: 4 Options

- 1) The same road!
- 2) The long road!
- 3) The broken road!
- 4) The fast road!

Factors Affecting the Energy Scenarios:

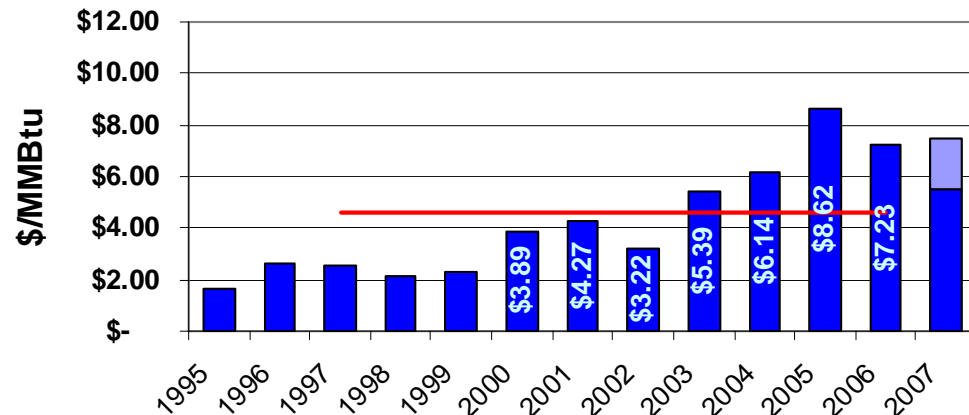
A) Cost:

Average Industrial Electricity Prices



Cost of energy continues to increase

NYMEX Average Natural Gas Prices



Source: Fellon-McCord & Associates data

Source: Fellon-McCord & Associates Data; Energy Information Agency

Factors Affecting the Energy Scenarios:

B) Environment

- Growing evidence that human activity is affecting the climate
- CO2 highest levels ever
- Global Temperatures continue to rise
- Customers more educated and seeking environmentally friendly products

Factors Affecting the Energy Scenarios:

C) Regulation:

- Most countries have plans to reduce CO₂
- US voluntary reduction to reduce intensity by 18%
- Kyoto Protocol in 1999 agreed to GHG limits
- Carbon trading underway
- Many factors still to be decided

What is the Future?

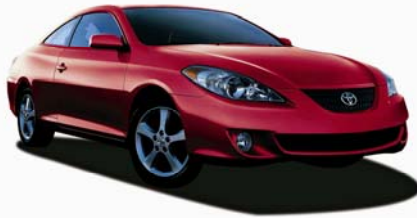
- One thing we can be sure of:
Managing Energy will be more
Challenging and more Important!

Will you, and your
Company be Ready?

Toyota's Direction

Which Scenario Path are we on?
Fast Road!

- Sustainability
- Introduction of New Technology and Continued Kaizen Opportunities
- Renewable Energy Opportunities
- Afforestation at Plants



TOYOTA

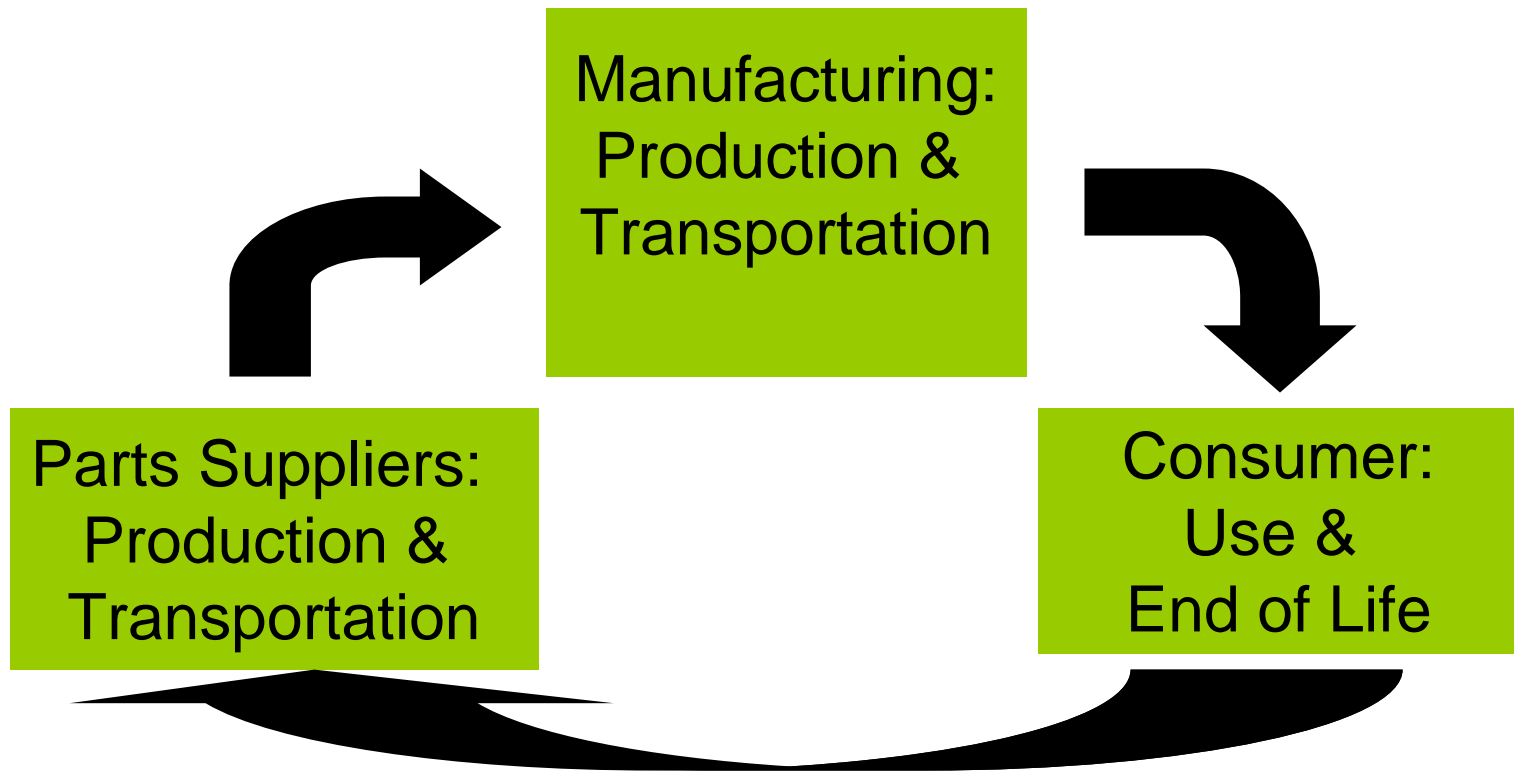
Philosophy: Reduce Energy/CO2 Which Contributes to the Improvement of the Earth's Environment

Manufacturing in North America



Energy Footprint

What is the Energy Life Cycle of our Product?



Reduce CO2 in all aspects of our Product

Sustainability: Create plants that both make use of nature, yet exists in harmony with the natural environment



New Plant Design Concept

Integrated Energy Policy

Integrated Equipment/
Building Design

On-Site Generation

Reclaim Waste Heat

Co-generation

CO₂ Capture/Store

Reduce
Operations Use

CO₂ Focus
KPI

Purchase
Contract

Sequestration

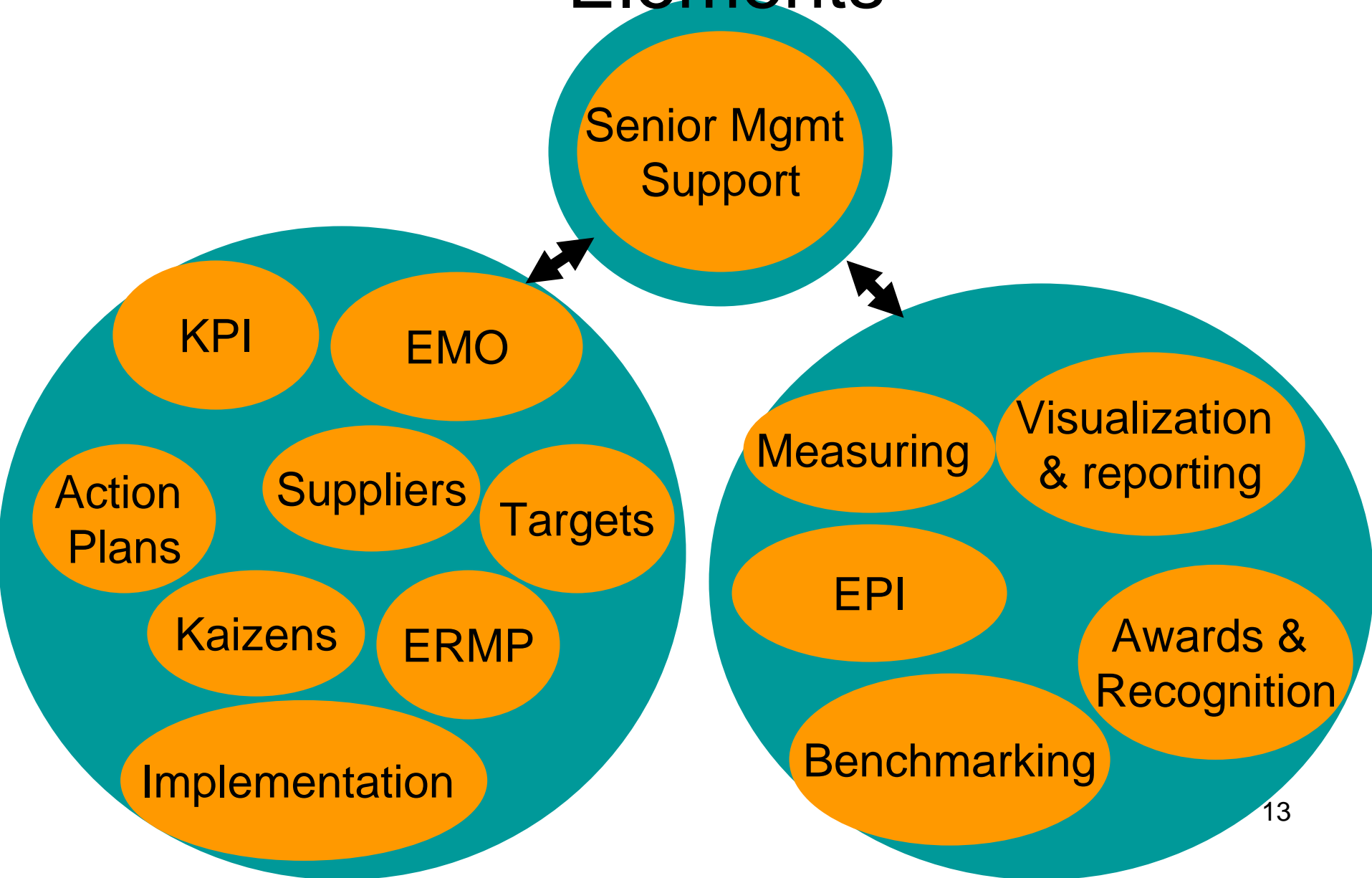
Energy ↑
Reduction

Energy ↑
Conversion

Alternative ↑
Energy

Carbon ↑
Offset

Energy Program Key Elements



Master the Fundamentals of Energy

- Build an Energy Culture-TPS
- Establish an Energy Organization/team-EMO
- Develop Energy KPIs-Annual Plans
- Provide Direction and Support-Mission
- Review Status and Provide Recognition-Awards

Establish Broader View of Investment and Strategic Decisions

- Establish Energy as an input in the Company's Business Decision-New Plants
- Balance Energy Project Investment vs. Savings-Life cycle cost
- Develop the Energy Footprint of your Product-CO2

Enhance Business Opportunities with Energy

- Establish Energy as a Lever for Growth not a Cost-New Technologies
- Develop Energy as a Strategic value of Productivity-Procurement Strategies
- Be Innovative in Publicizing new Company Products based on Energy Technologies-New Products

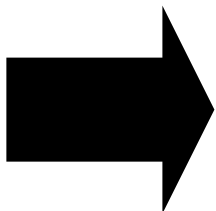
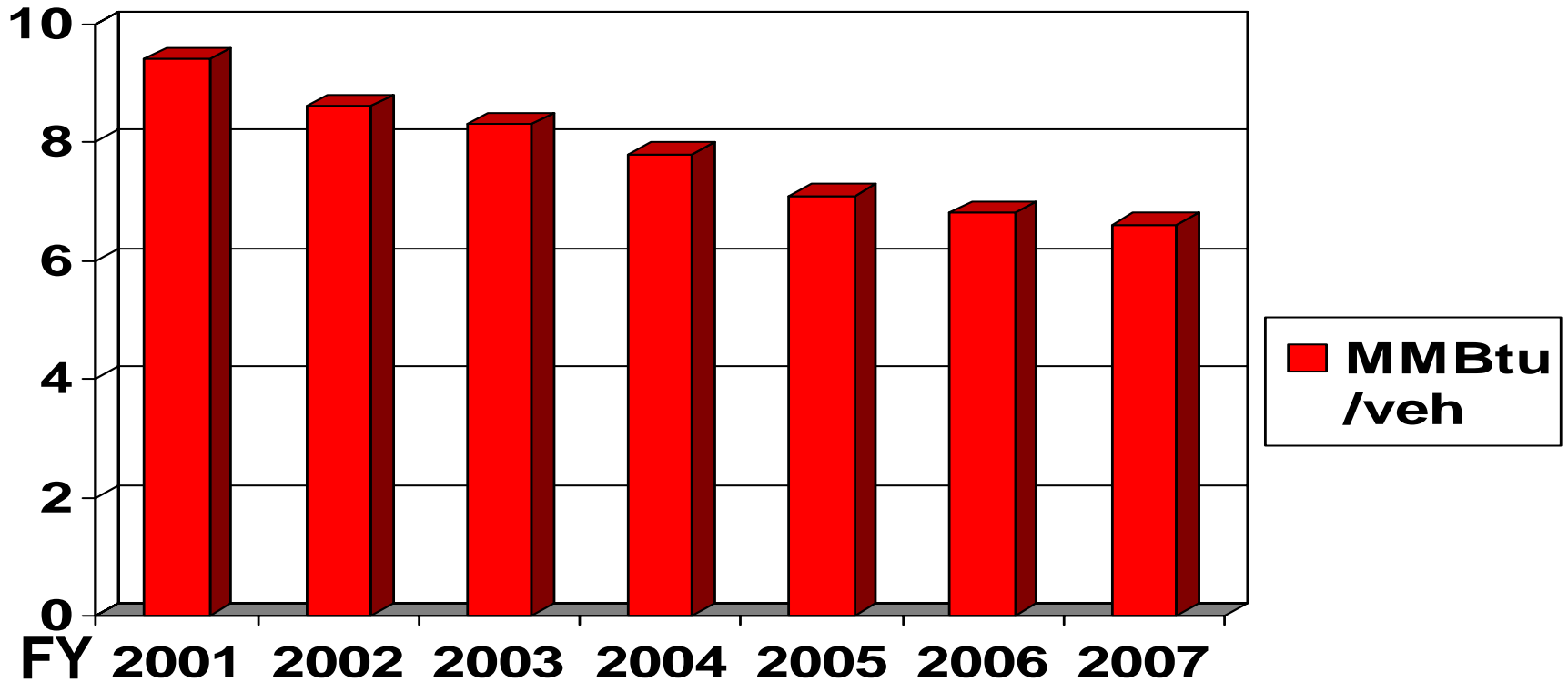
Prepare Contingency Strategies

- Prepare Contingency Plans - Cost, Availability, Weather, and Regulations
- Manage the Exposure to Risk-Utility Supplies
- Monitor what Energy Road your on-Compare to the Market

Take Personal Action

- Manage Energy from your Position-All levels
- Make Energy a Board Level activity-Reports
- Influence your Industry Sector-Outside organizations
- Use Scenario Thinking for Strategic Discussions-
Market vs. Strategy

Overall Results



30% Energy Reduction
25% CO2 Reduction

Summary

- More Customers are Demanding Products that are Energy Friendly
- Cost, Availability and Technology will Impact how we use Energy
- New Regulations or Laws will Impact the Energy Footprint

We Need to be Prepared!

Are you and your business
ready for the Future?



Only use what you need,
when you need it
In the Amount needed