



Brisbane Mining Club
Luncheon Series
June 2008



ENGINEERING • CONSULTING • TECHNOLOGIES
PROJECT AND CONSTRUCTION MANAGEMENT



Our Common Objective.....

- World-Class Quality Facilities regardless of location
- A project journey matches the destination
- Project Cost Certainty
- Schedule Certainty
- Vertical Start-ups
- Rapid Ramp-up to Nameplate Production Levels

Possible in today's project climate?

YES!

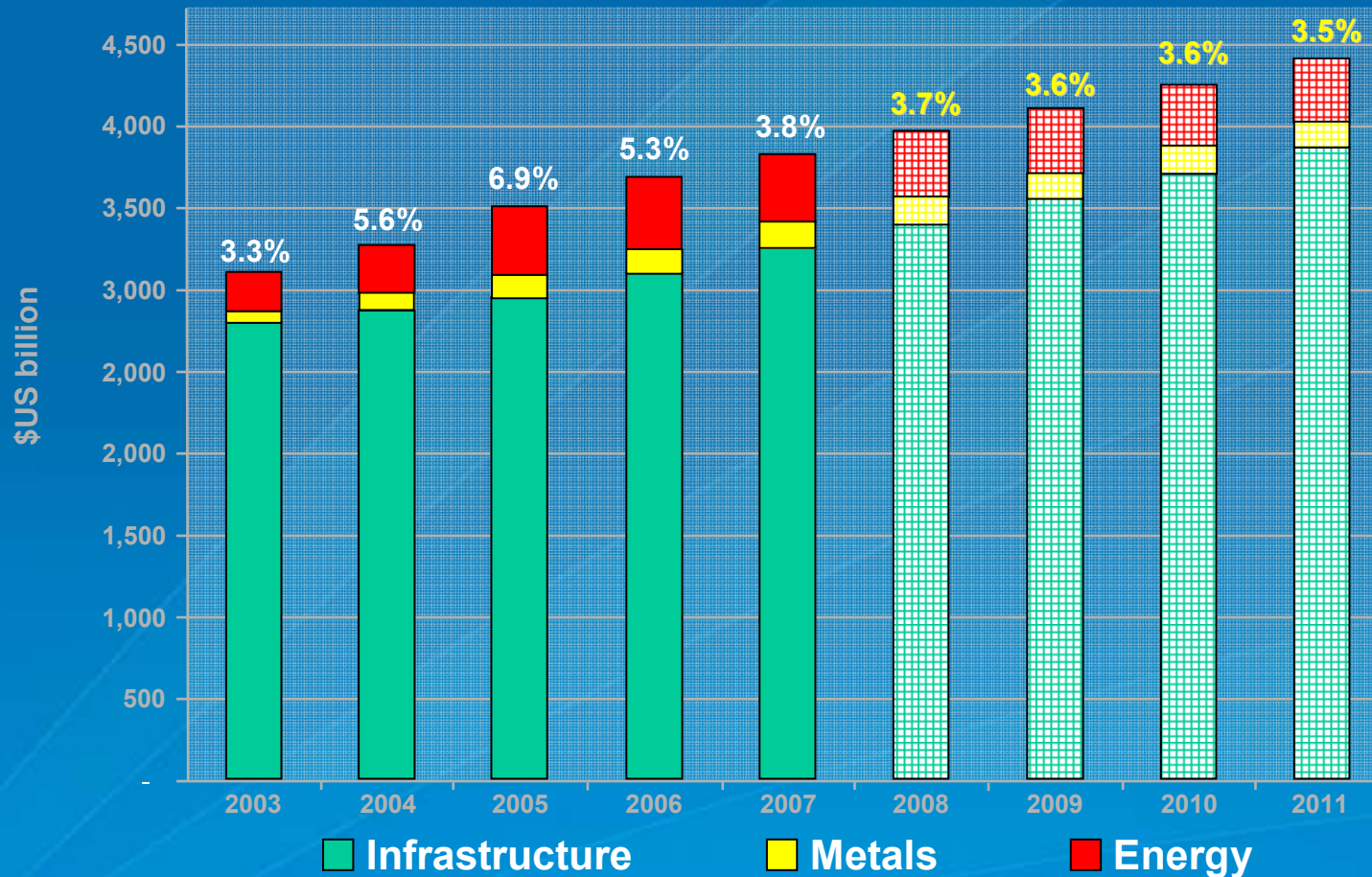
Is there a magic formula?

Of Course.....Not!

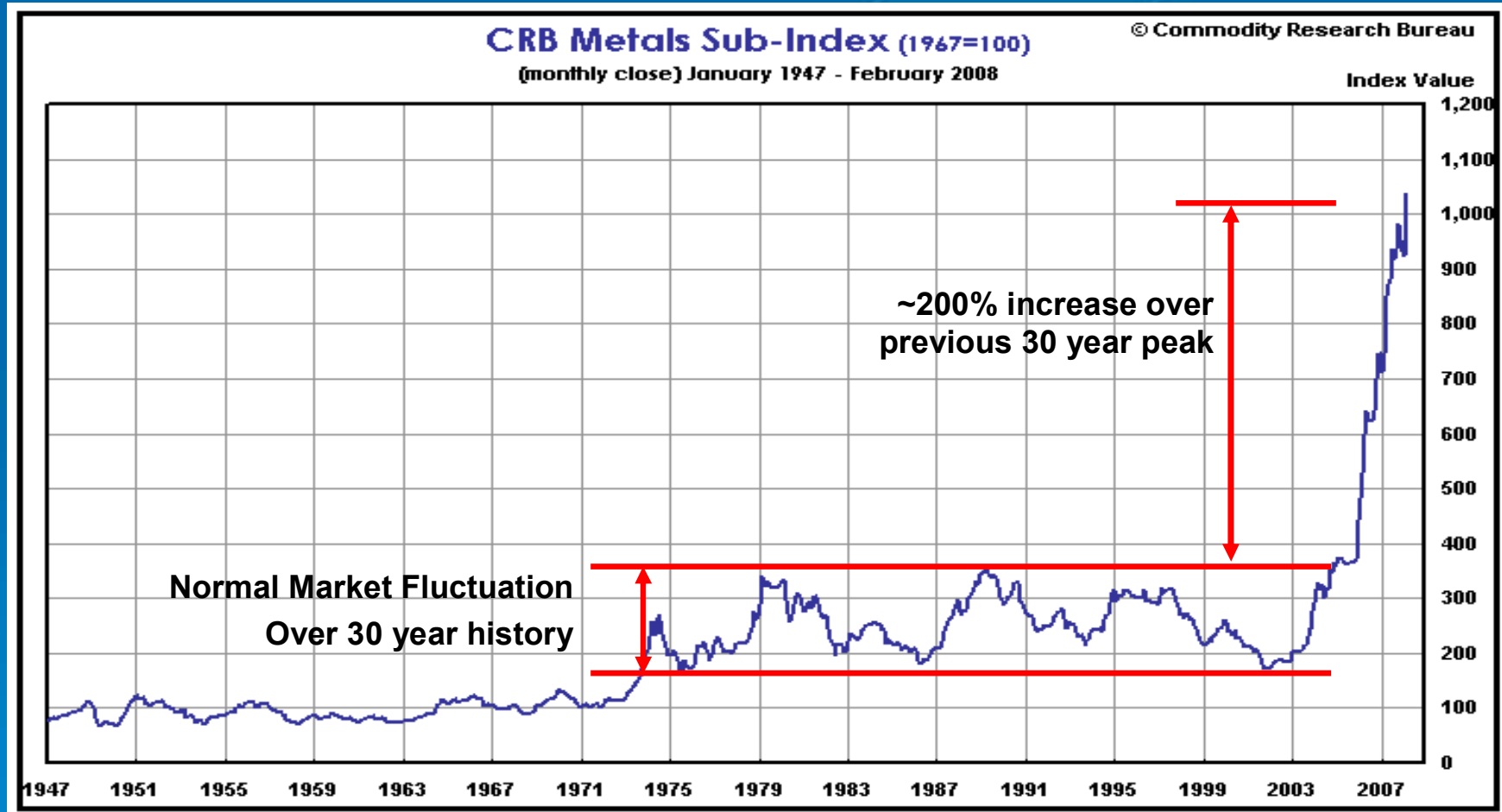
We can, however, move towards it!

Global Capital Expenditure has seen a rapid rise in 2004-2006, and stable growth patterns are forecast

Global Capital Expenditure

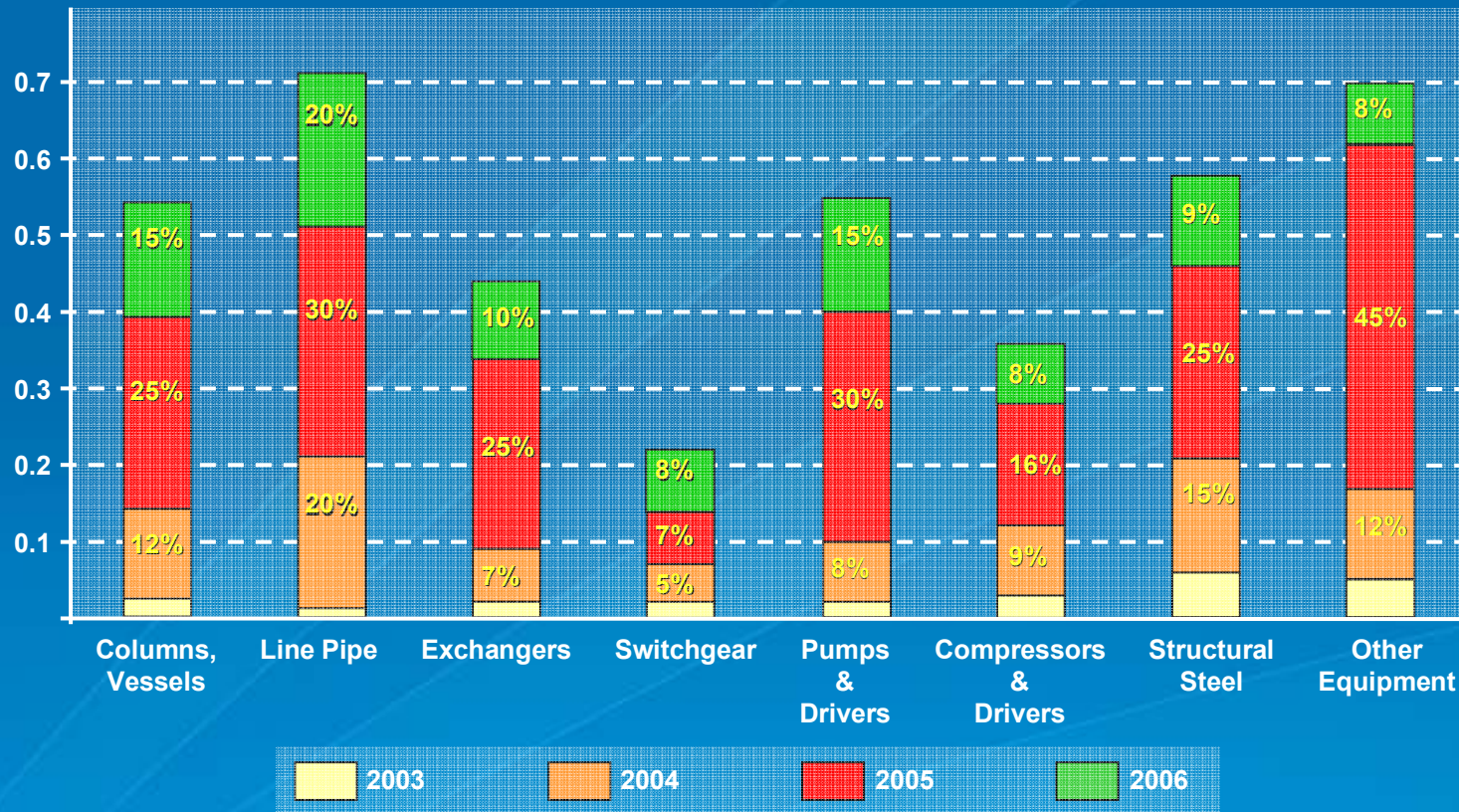


Commodity price escalation has driven much of the metals growth



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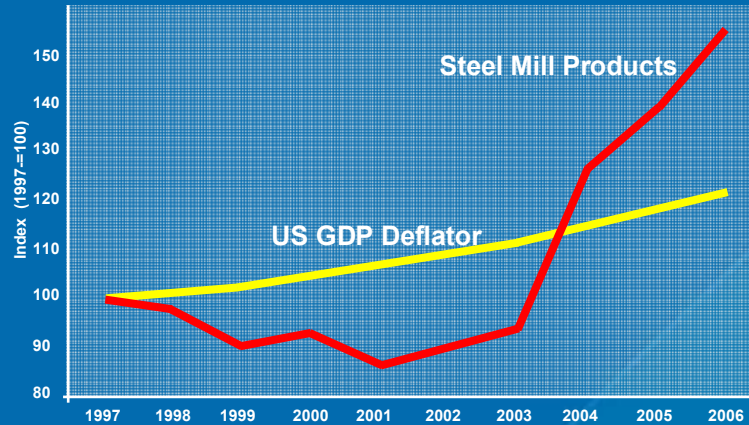
Equipment Price Increases



Source: "Who, What, Where, How" presentation by John Siegel. Delivered at Next Generation of Generation Conference (Dewey Ballantine LLP), 4 May 2006.

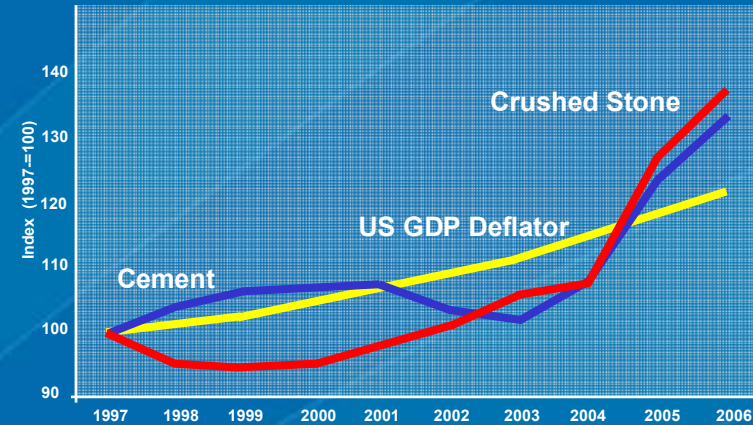
Commodity price escalation has driven much of the metals growth

Steel Mill Products Price Index



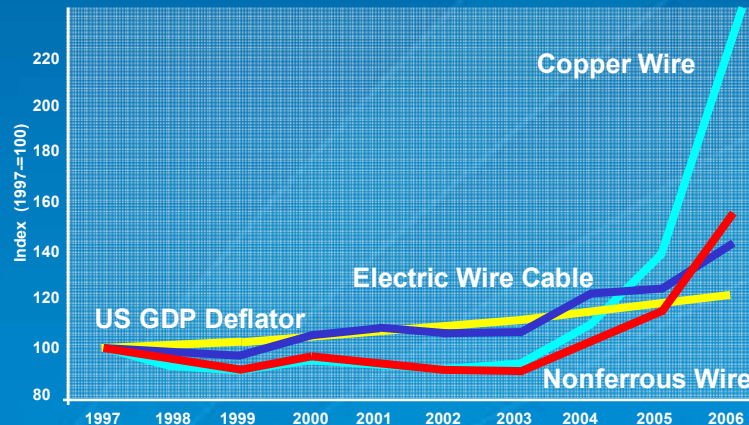
Source: US Geological Survey, Minerals Commodity Summaries and US Bureau of Economic Analysis

Cement and Crushed Stone Price Index



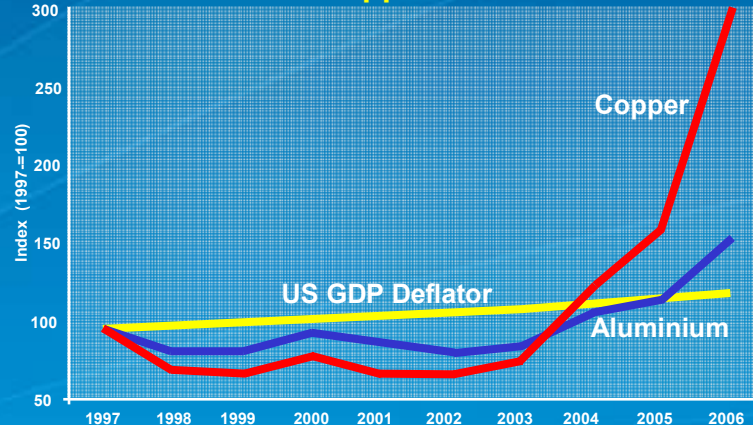
Source: US Geological Survey, Minerals Commodity Summaries and US Bureau of Economic Analysis

Electric Wire and Cable Price Index



Source: US Bureau of Labor Statistics and US Bureau of Economic Analysis

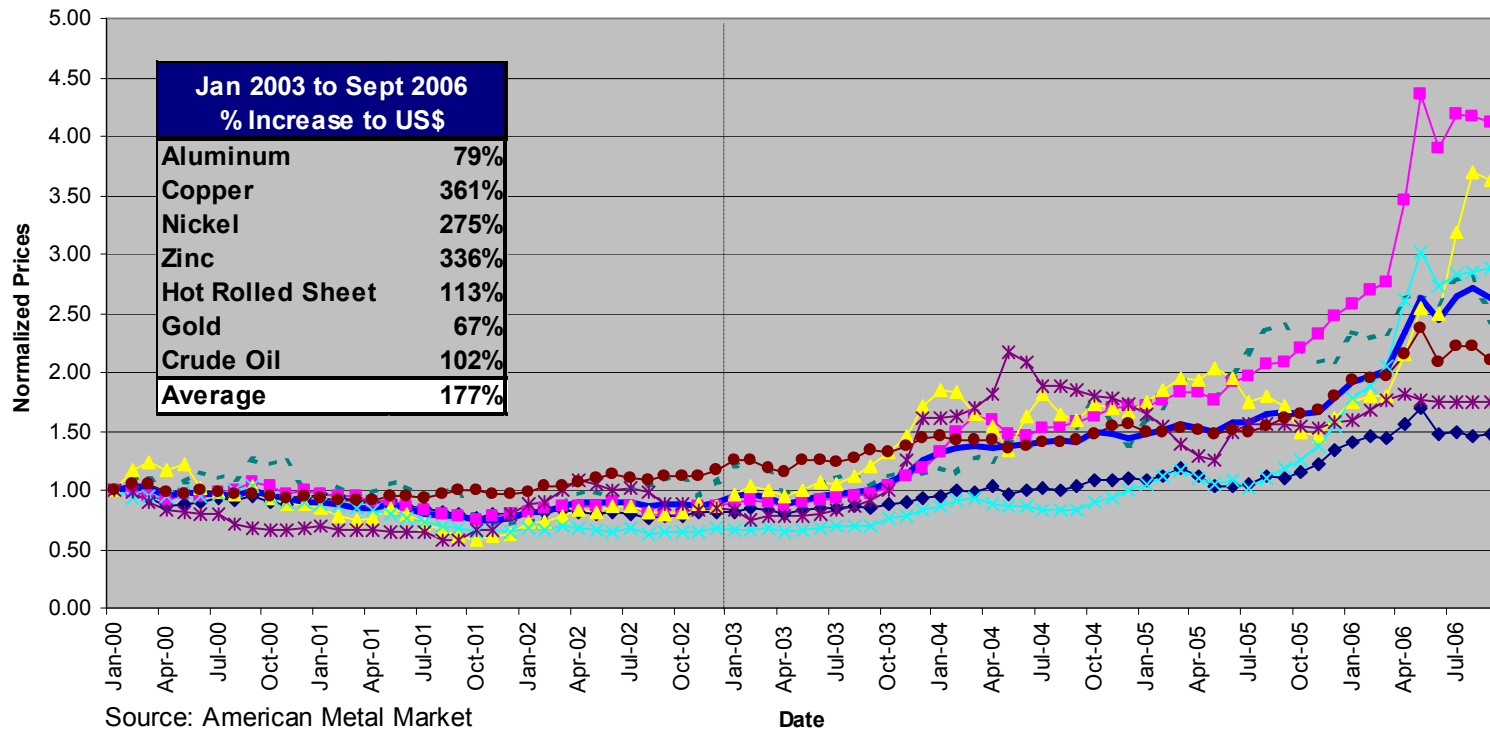
Aluminium and Copper Price Index



Source: US Geological Survey, Minerals Commodity Summaries and US Bureau of Economic Analysis

Global commodity price escalations have been varied but steadily growing since 2003

Normalized Commodity Prices



Source: American Metal Market

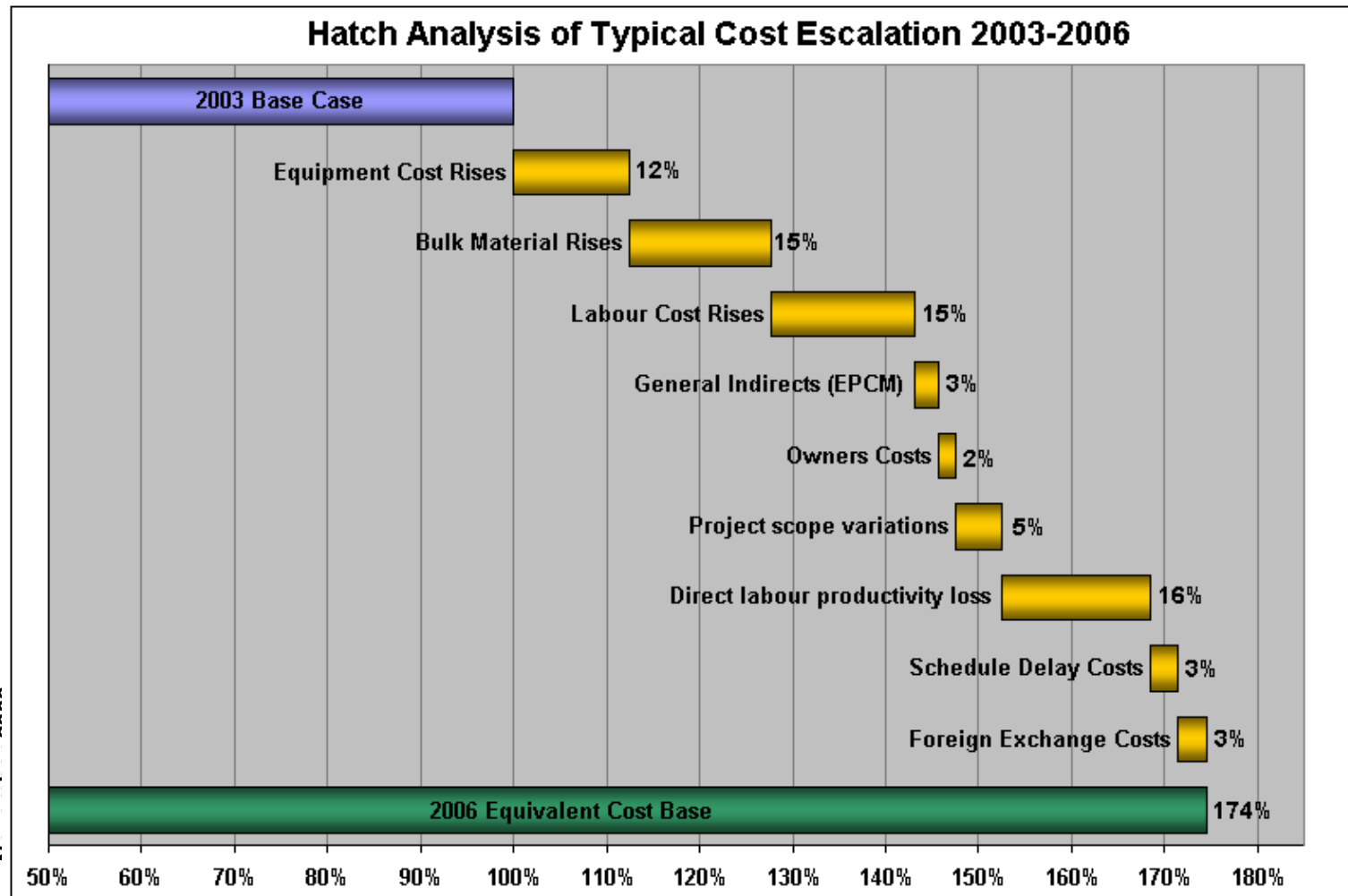
Source*: Energy Information



6011-GR-0008-CA01_commodities.xls

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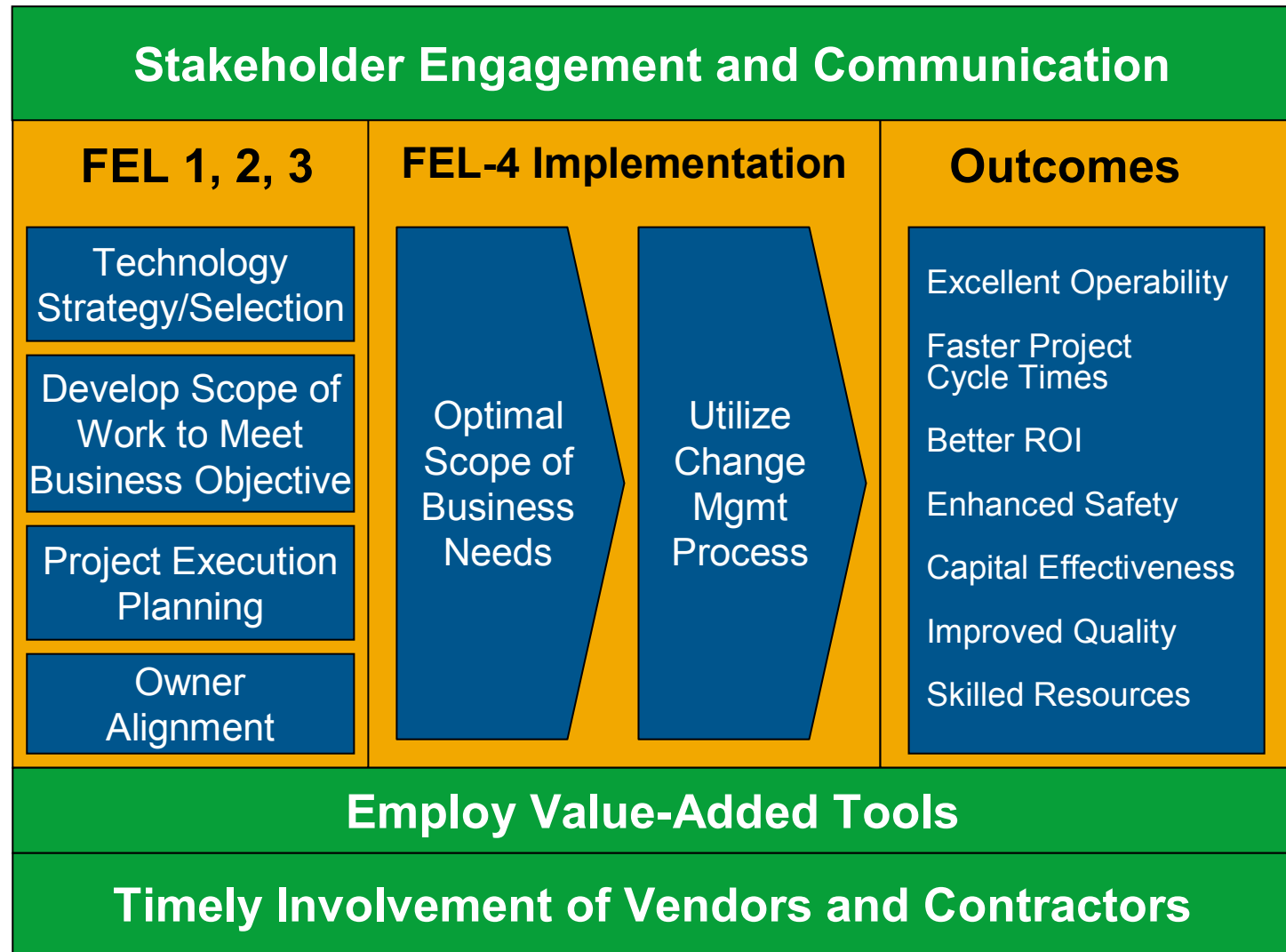
Analysis of Australian market escalations has found site labour and material related escalation to be dominant, and driven by local project competition



Reference: "Capital Project Cost Management in Today's Mining, Metals & Energy World", K Strobele, A Monaghan, Hatch Associates,

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Front End Loading Process



Product-to-Market Driven Projects have significant impacts

Examples:

- Front End Loading (evaluation) (FEL)
Process compromised and rushed
- Expedited (Fast-track) Implementation Schedules
- Ability of key suppliers to meet schedule and quality expectations

Risk Elements expand and compound!

Market or Project Environment

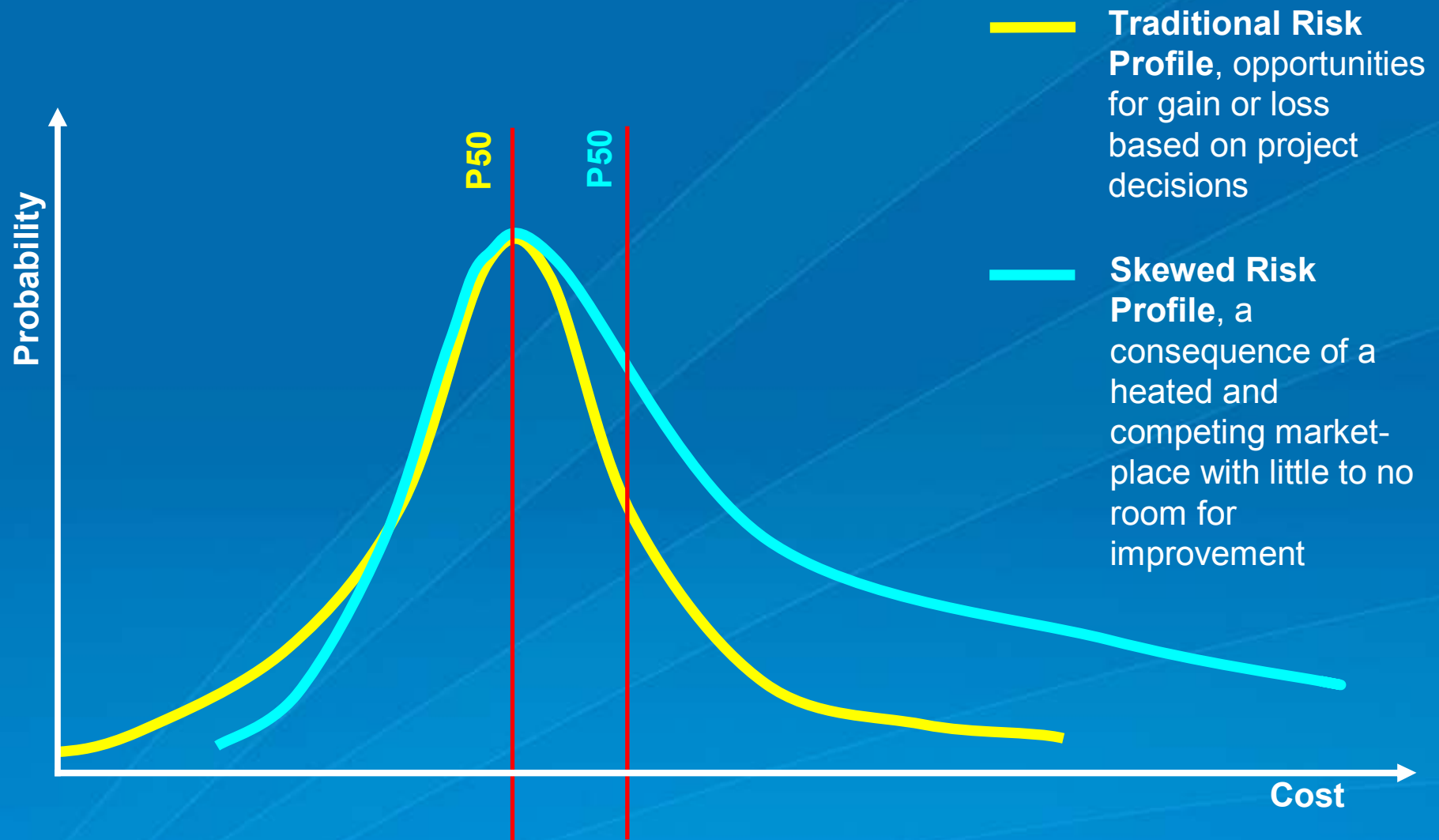
- Booming Economy with highest level of Capital Expenditure ever seen
- Global demand for professional resources
- Labour Cost and Productivity Issues
- Materials and Fabrication Cost and Delivery
- China/Asia Factor
 - Positive cost and schedule aspects
 - Quality Management critical
 - For how much longer?

Challenges

- Stretched or under-resourced Owners and Project Teams
- Overlapping Front End Loading Phases
- Achieving full project definition
- Giving priority to:
 - Project Environment Awareness
 - Value-added practices
 - Risk Mitigation
 - Quality Management

An Environment for change evolves!

Project related Risks are getting skewed, with minimal upside, and compounding downsides



Summary

- Safety
- Project drivers and environment
- Assure competent project teams
- Proactive Risk Model
- Robust Front End Loading Methodology
 - No Short Cuts
- Employ Value-Added Practices

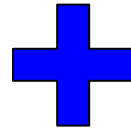
Summary

- Plan the Work and Work the Plan
- Effective Change Management
- Access China's or other developing nation's capability/capacity
- Emphasize Quality Management

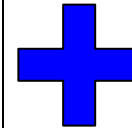
The “Magic” Formula Revealed:



**Competent
processes
/ people**



Planning



**Value-Added
Practices**

= “The Magic Formula”