

# UV/EB Curing - A Hedge for the Future

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# Purpose

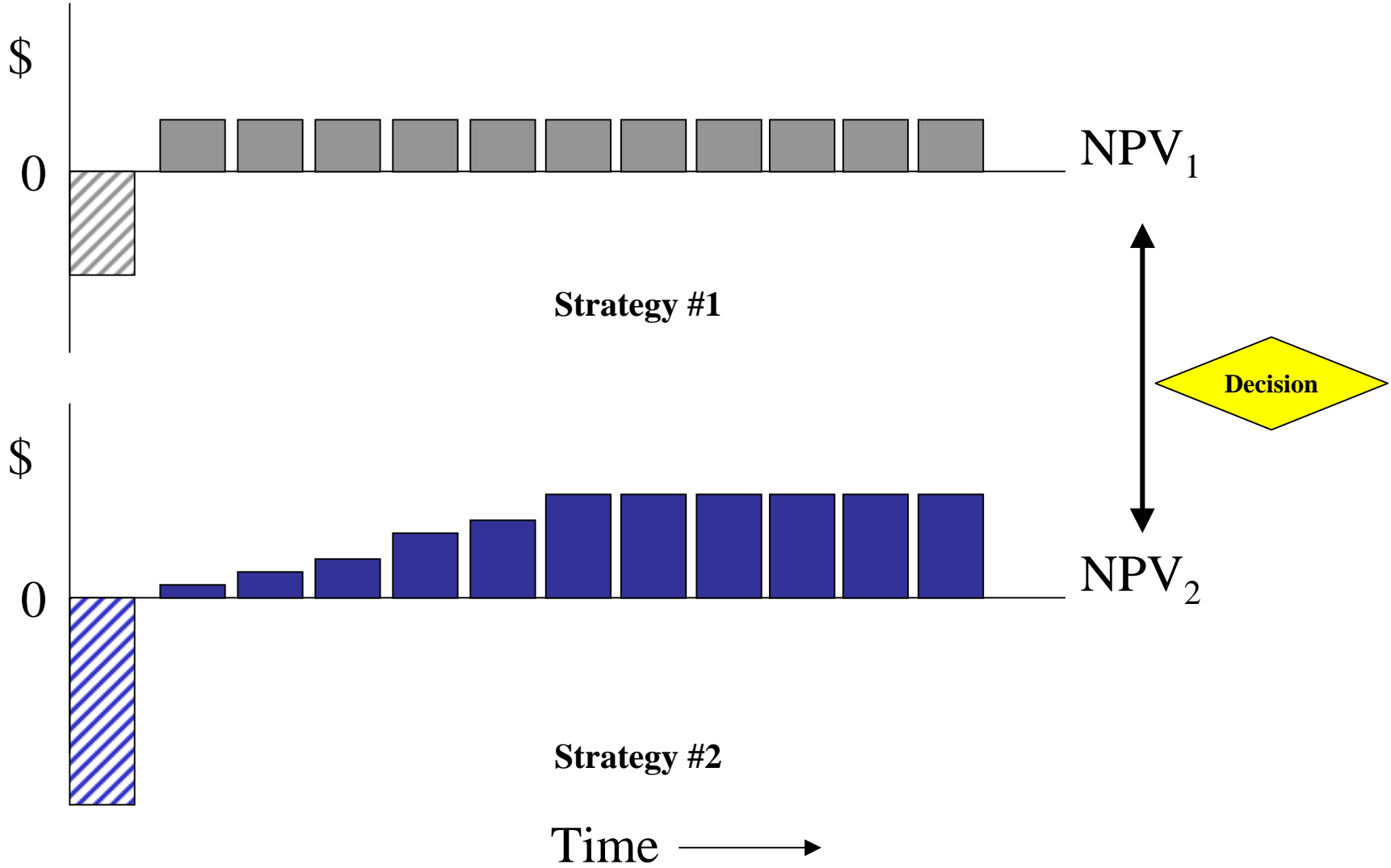
To understand new decision-making theories being applied by your coatings customers in a way that helps the UV/EB-curing industry in the selling and marketing efforts of your industry.

To answer the question:

*How might we align our sales and marketing strategies with customer decision-making so that customers will decide on UV technology for the future?*

# Decision-Making Today

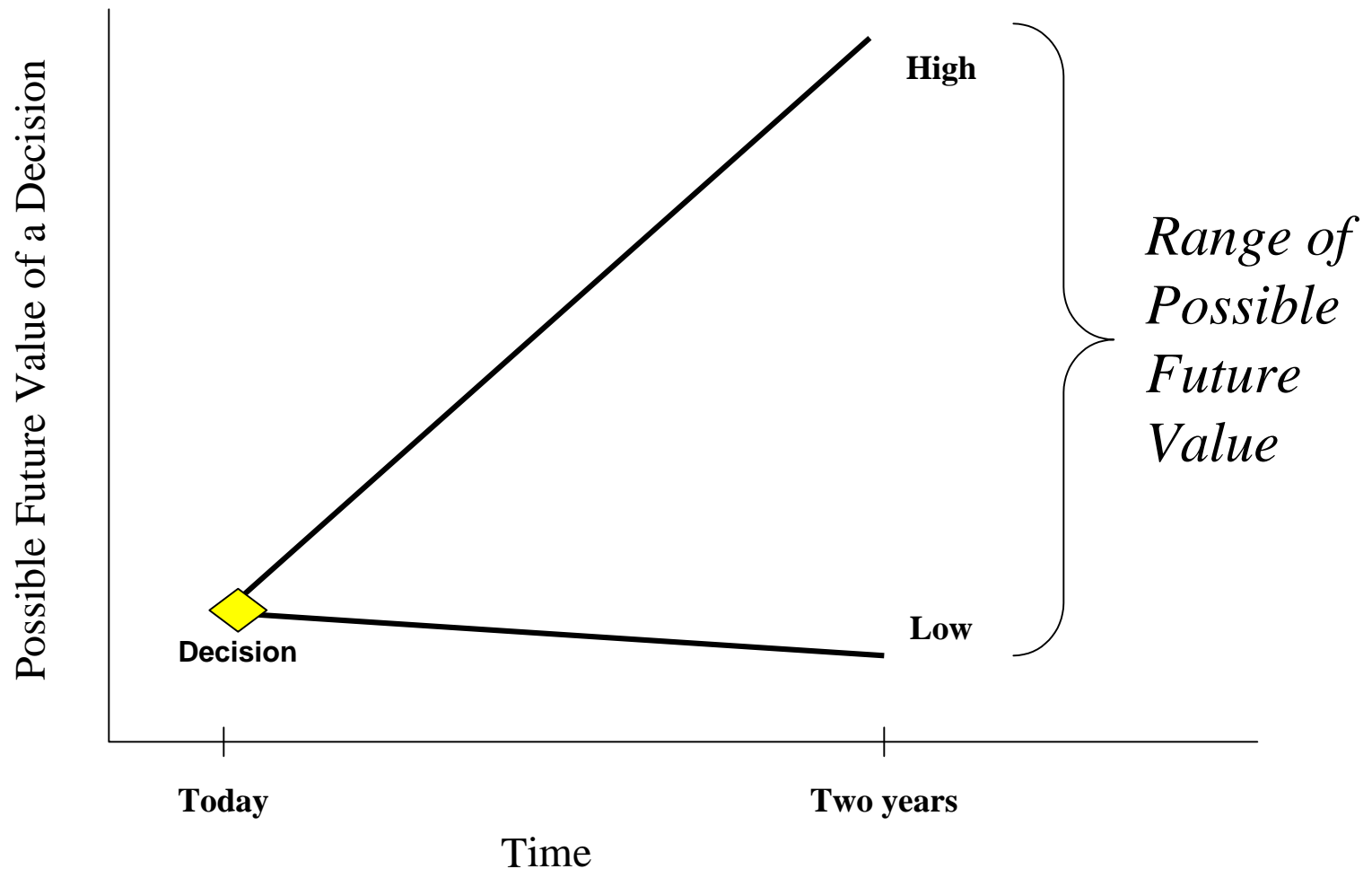
-Discounted Cash Flow Method



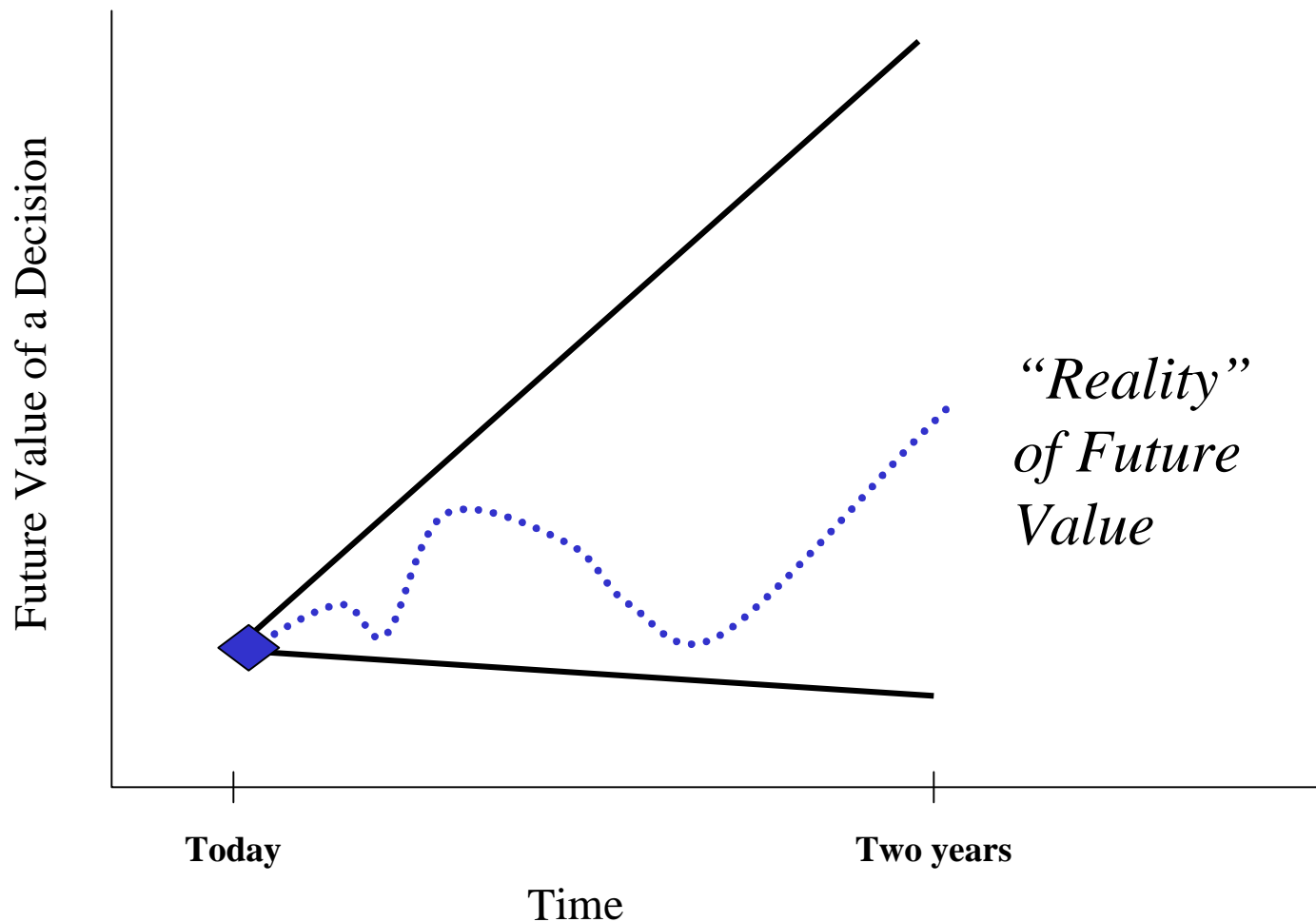
# The Changing Face of Decision-Making

- Wall Street's desire for stable and growing earnings is driving companies to better plan cash flow - there is great desire to smooth earnings
- The world around us is increasingly volatile as the rate of change increases - this volatility leads to volatility in cash flow
- Uncertainty about the future is making cash flow planning increasingly difficult
- Your customers are increasingly considering future uncertainty in the decisions they make:
  - sources, trends and evolution of the uncertainty
  - degree of exposure of their investments to the uncertainty
  - how to respond to the uncertainty to maximize the return on their investment decisions

# Cone of Uncertainty



# Cone of Uncertainty



# The New Face of Decision Making

To mitigate future uncertainty and risk, investment decisions are increasingly being made with built-in flexibility:

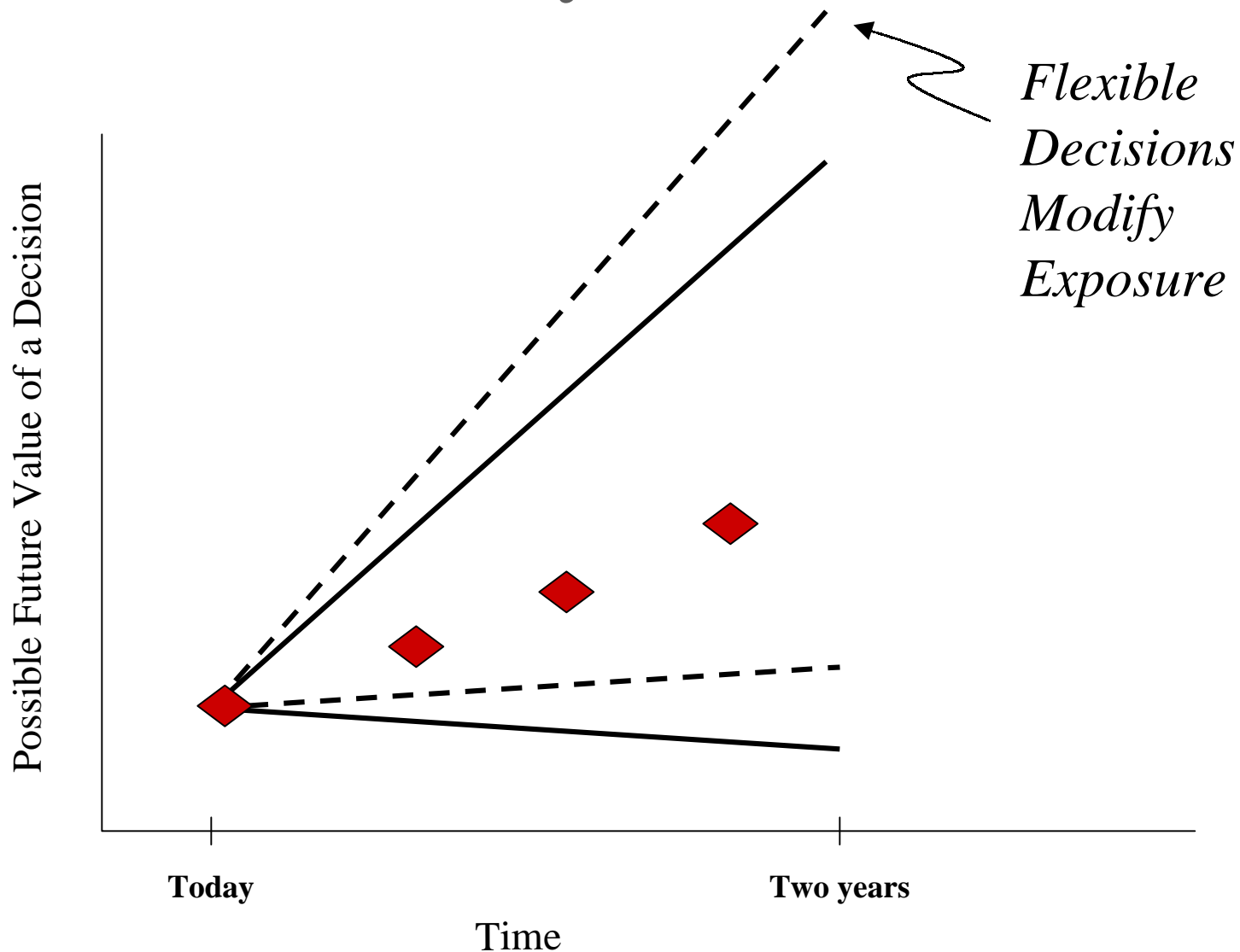
- **Platform and Modular Decisions** - decisions that build upon a set of “inter-connectable” sub-decisions or investments
- **Learning Decisions** - decisions to learn first before committing investment
- **Waiting-to-invest Decisions** - decisions that delay investing until some uncertainty is resolved
- **“Options” Thinking** - viewing investment decisions as “buying the rights” to future opportunities and future decisions

# What is an Option?

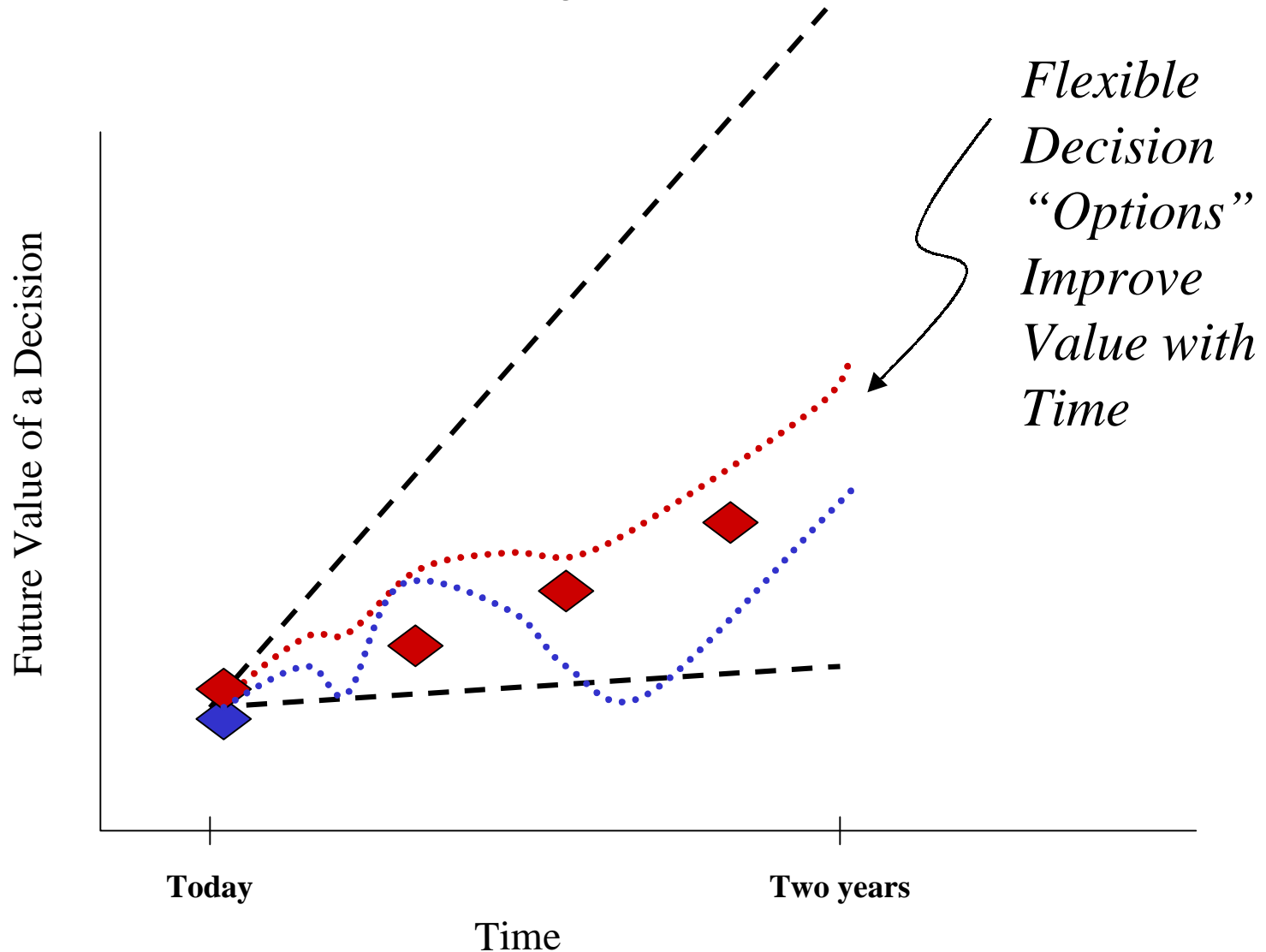
*An **Option** is the right, but not the obligation, to take an action in the future. Examples are financial instruments such as puts, calls, forwards, futures contracts and other derivative assets.*

*A **real option** is the extension of option thinking to real assets such as plant and equipment investments.*

# Cone of Uncertainty



# Cone of Uncertainty



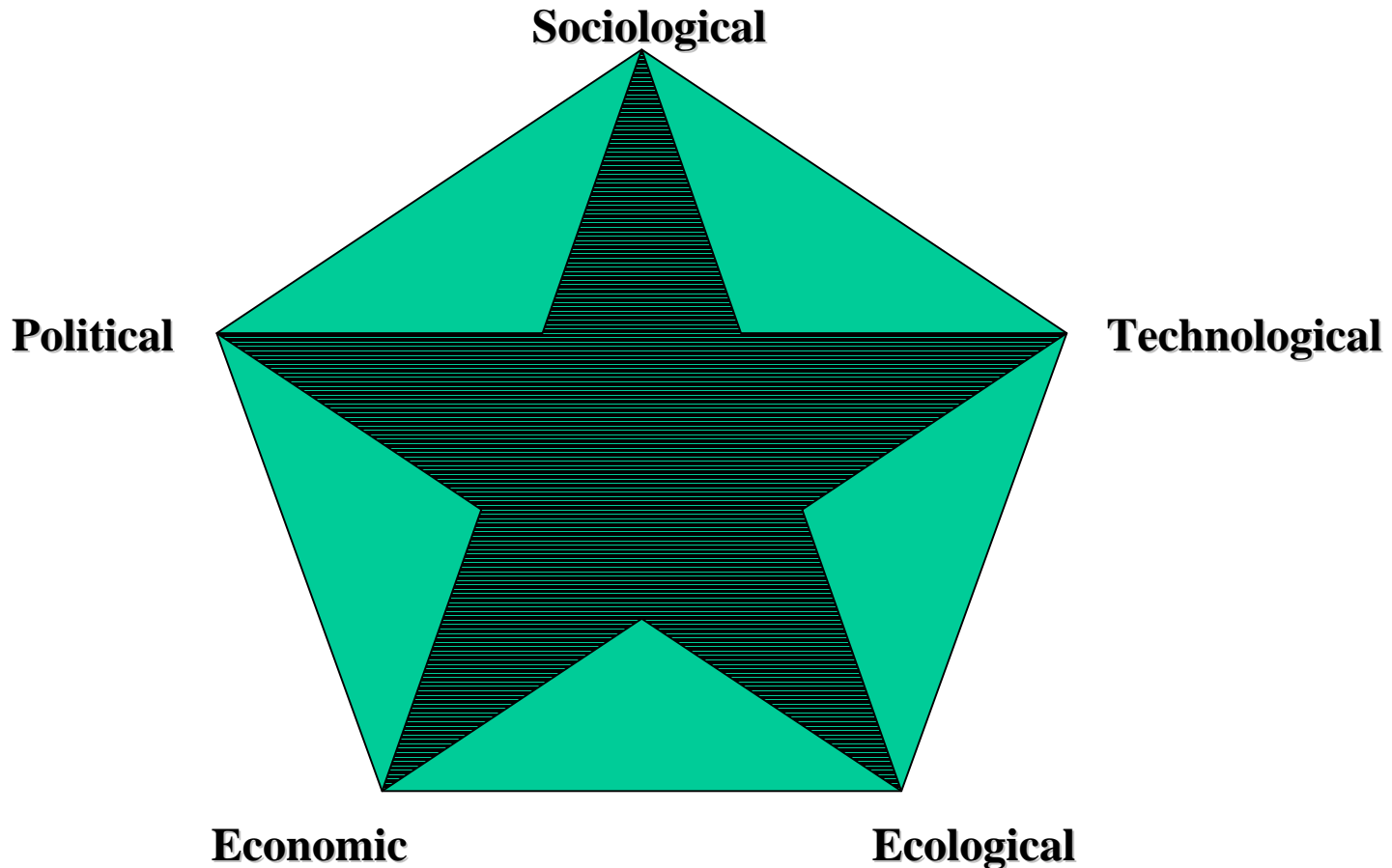
# Simple Examples of Options Thinking

<b>Situation</b>	<b>Future Risk</b>	<b>Option</b>
Long-term Stock Ownership	Falling stock price	Purchase a put option to buy the right to sell the stock at a fixed price in the future
Power generator	Volatile prices of fuel	Purchase the “option” of switching fuels by investing in switchable combustion equipment
Movie studio	Uncertainty about consumer preferences in the coming Christmas season	Purchase the “option” to spend heavily on the movie by first testing its popularity in select cities
Sporting goods maker	Volatility and uncertainty about consumer trends and fads	Purchase the “option” to enter the market by developing a modular product design that can be quickly modified.

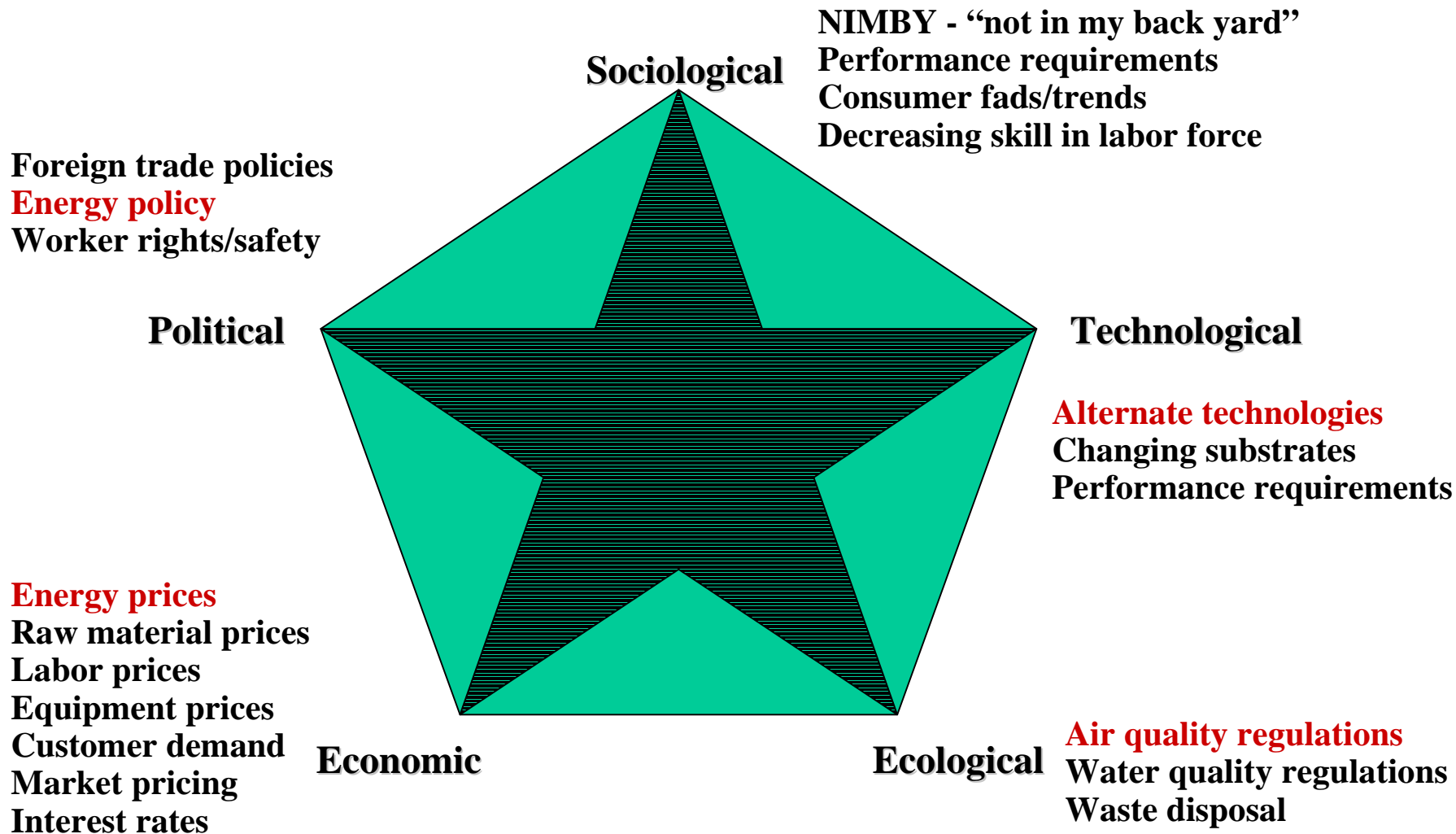
# Sources of Risk

# Strategic Trend Analysis

- identifying macro-trends that impact coatings



# Sources of Risk in the Coating Value Chain



# Decision-Making and the UV Industry

Examples of how to use options thinking to develop the UV market

# Examples of Uncertainty

- Energy
  - commodity prices
  - governmental policy
- Environmental
  - VOCs regulations
  - greenhouse gas regulations
- Technology
  - new coating formulations
  - changing end-user requirements

# Using UV to Hedge Energy Costs

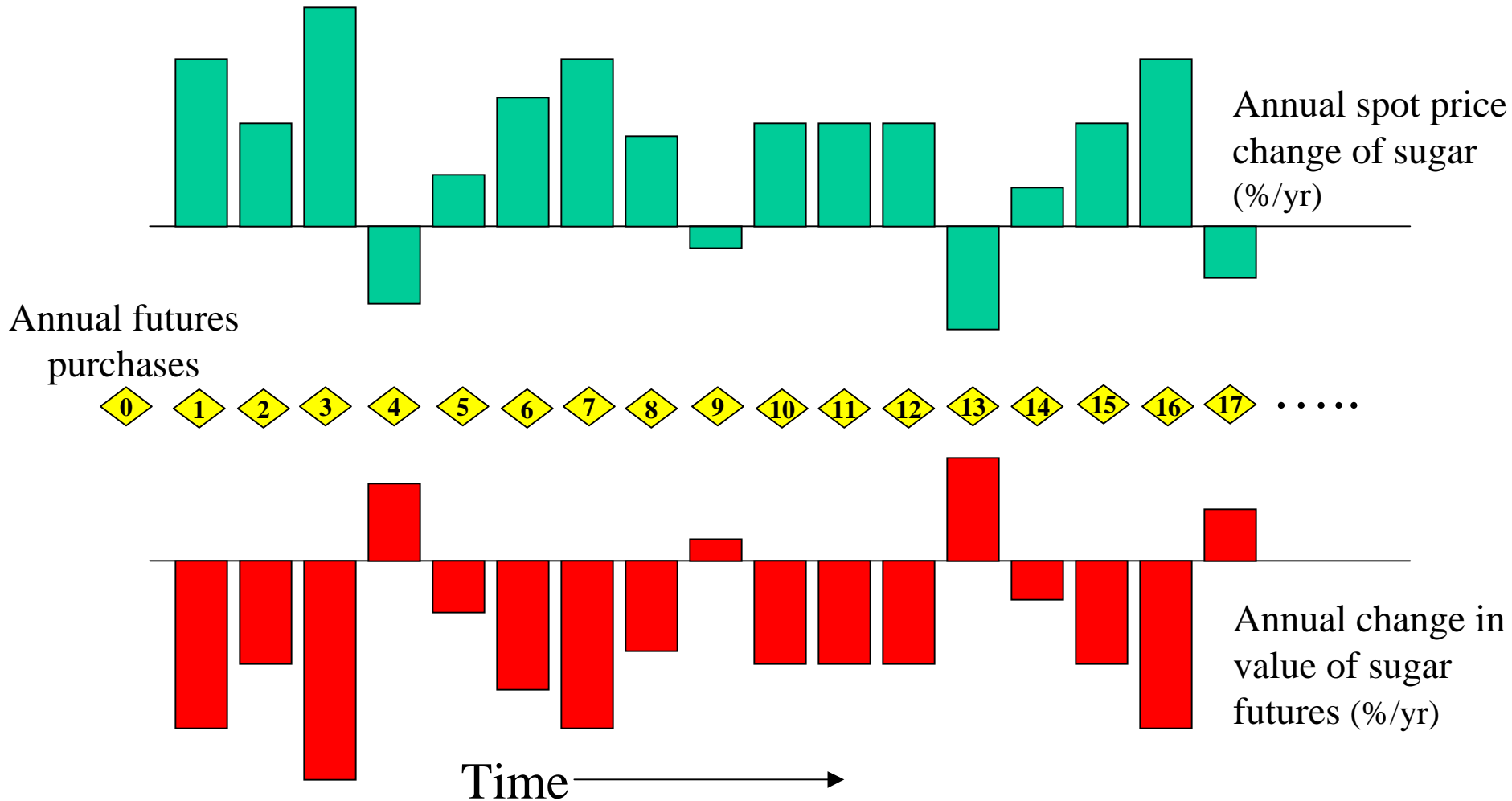
# What is Hedging?

*Hedging is a a common financial option for mitigating future negative trends with an immediate counterbalancing action or decision. Hedging often utilizes options in the form of commodity derivatives.*

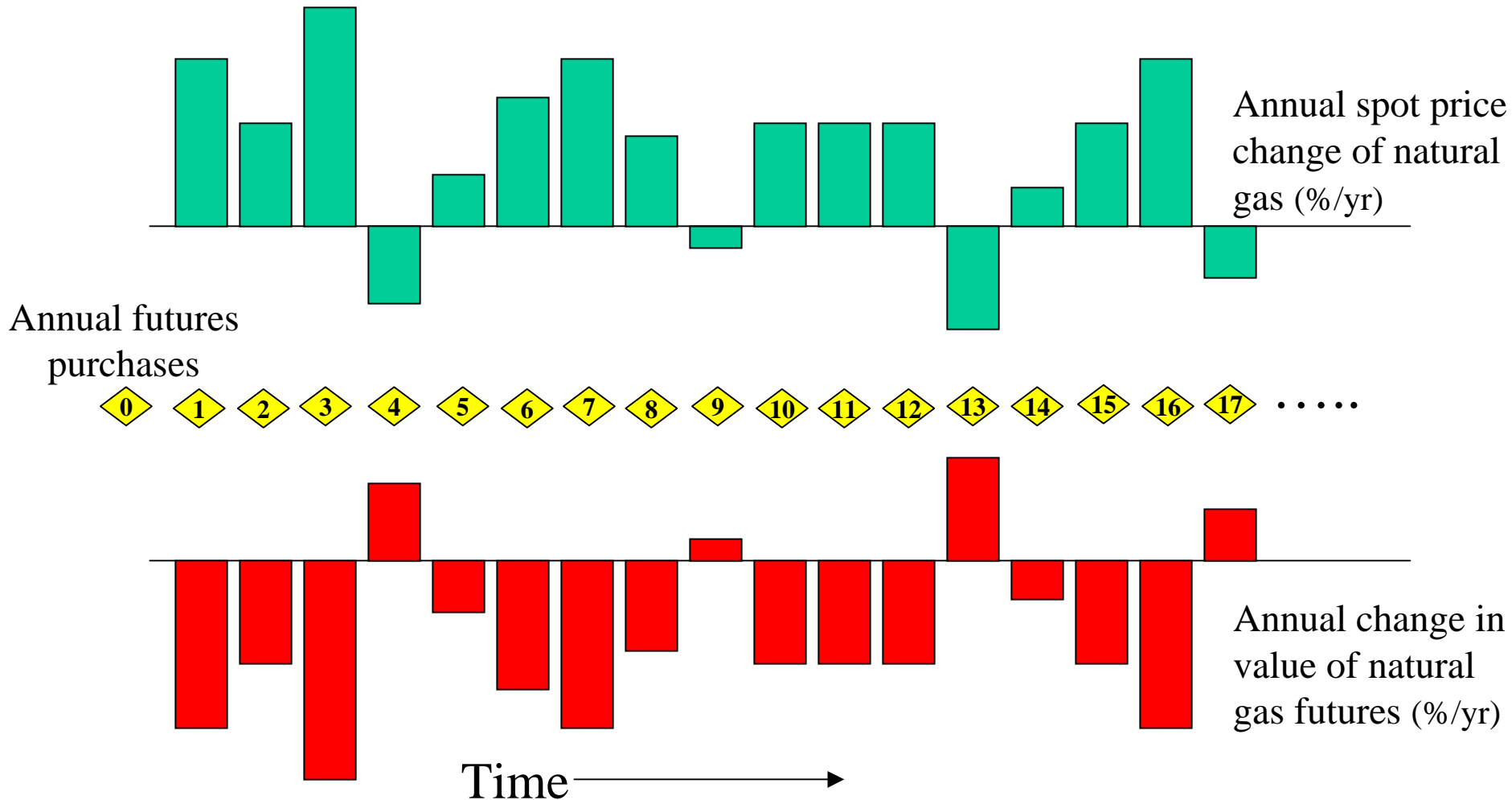
# Examples of Simple Hedging

<b>Situation</b>	<b>Future Risk</b>	<b>Hedge</b>
Soft drink manufacturer	Rising price of sugar	Purchase sugar futures to match sugar purchases
Food manufacturer	Rising price of polyethylene packaging	Purchase ethylene futures to match packaging film purchases
Human life	Premature death household provider and loss of family security	Purchase life insurance

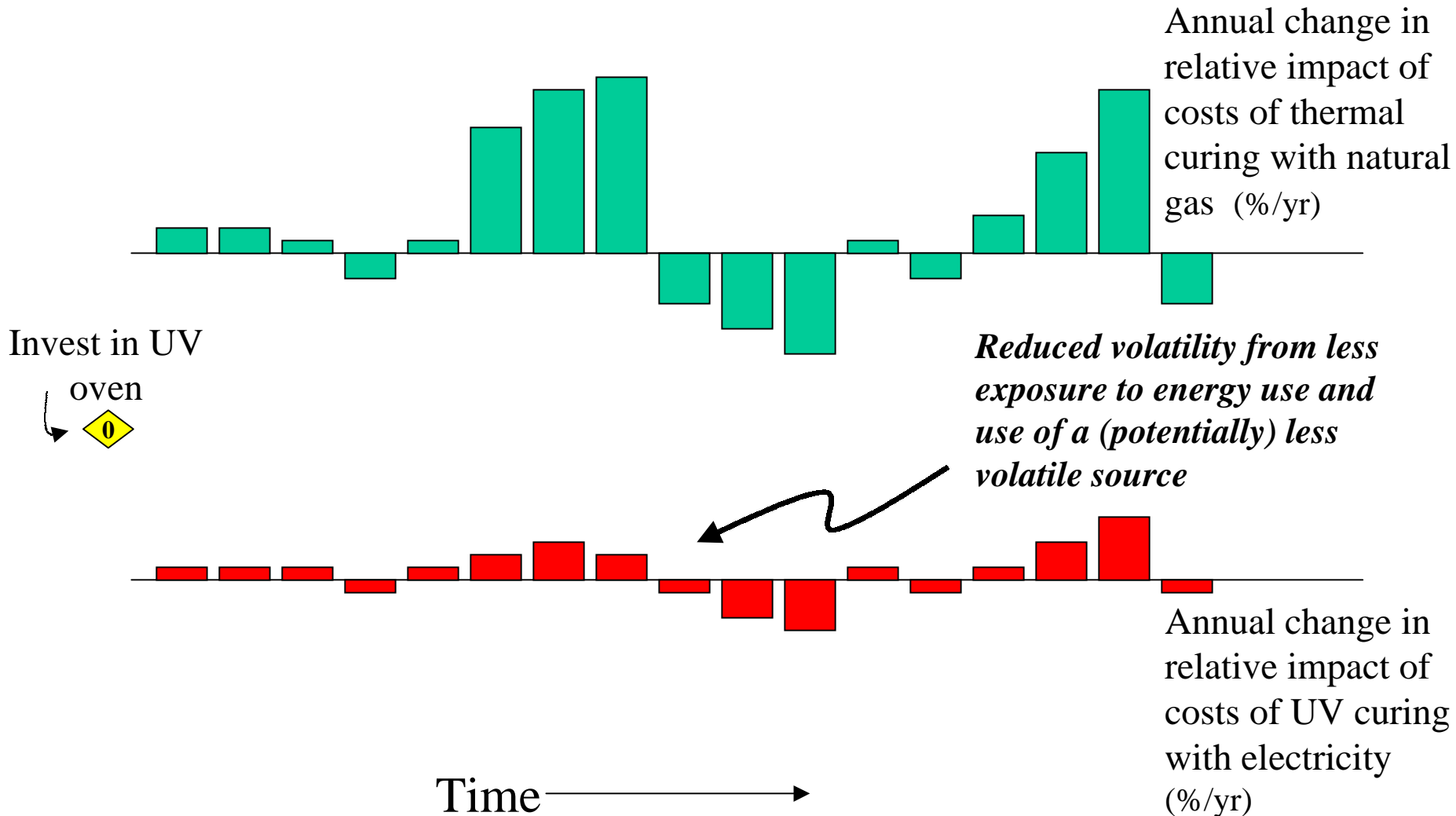
# Hedging Sugar Prices



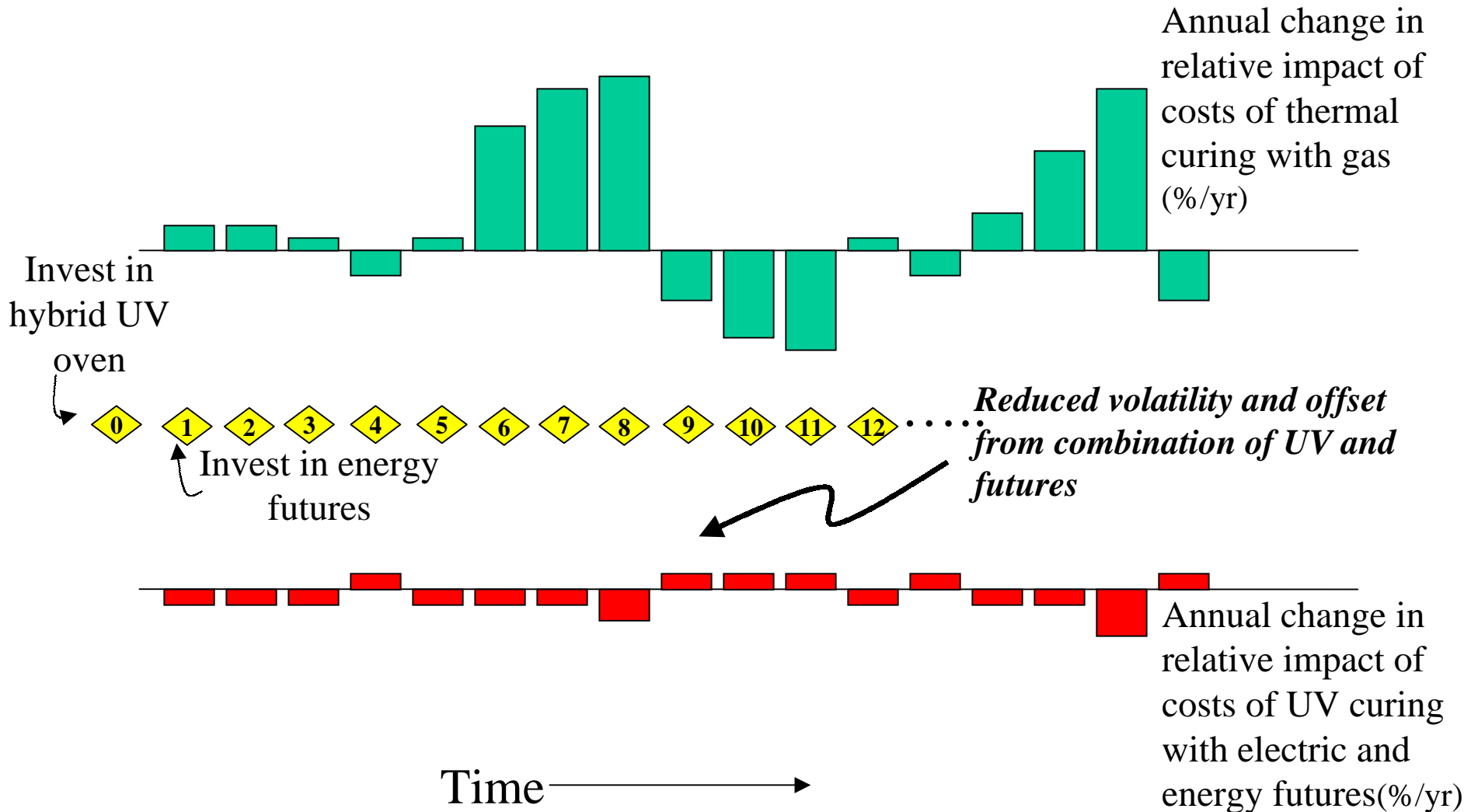
# Hedging Energy Prices with Futures



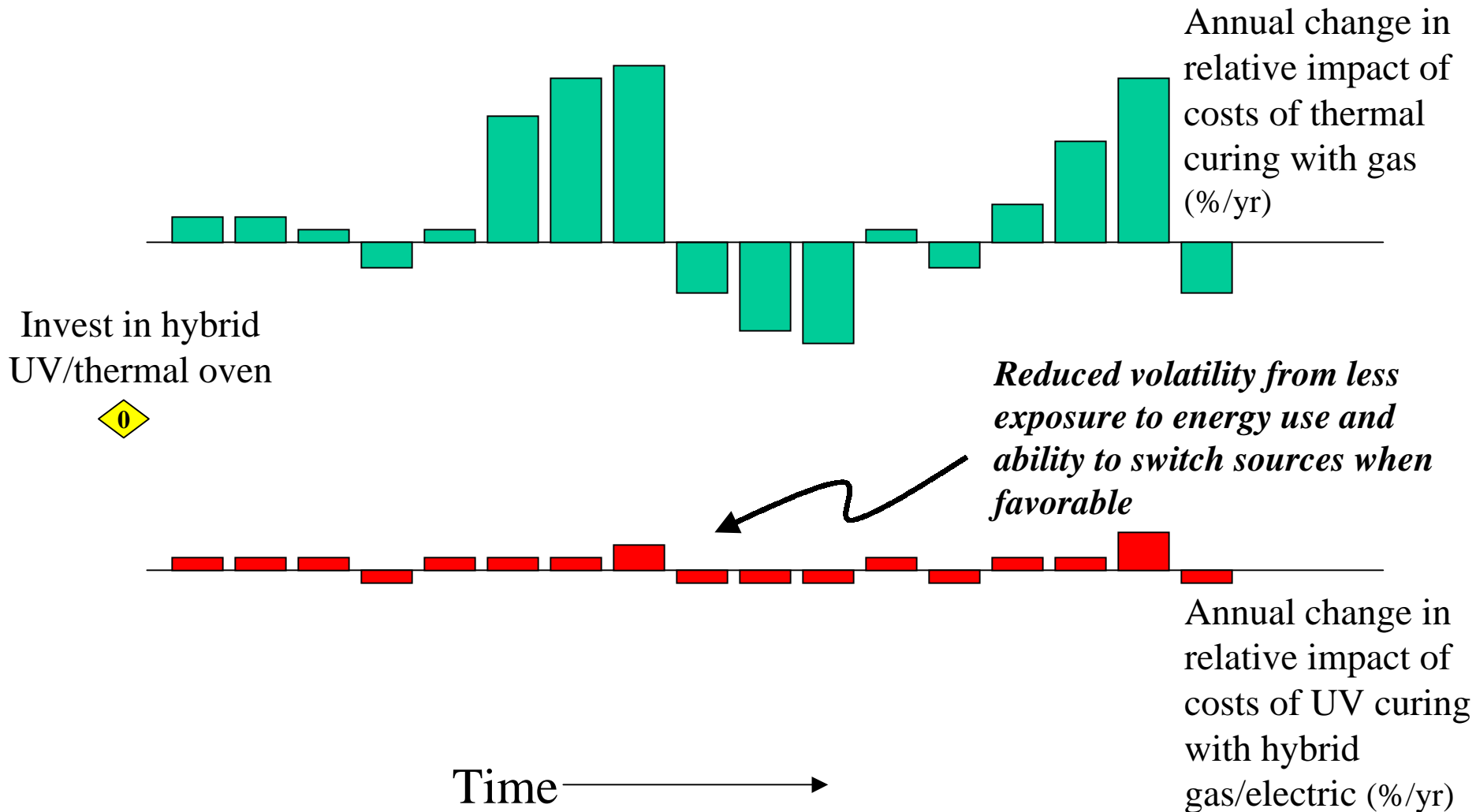
# Hedging Energy Costs with UV



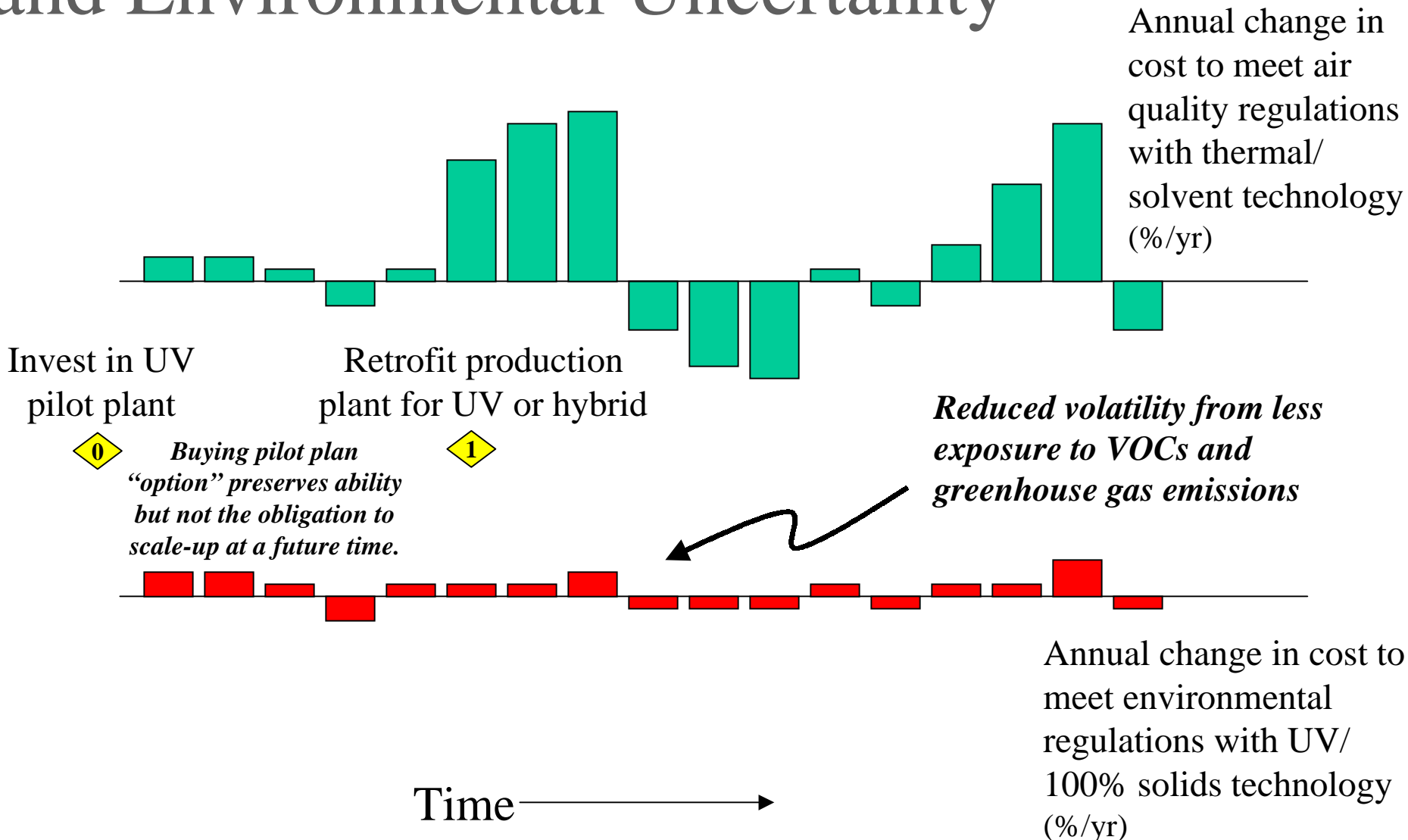
# Hedging Energy Costs with UV and Energy Futures



# Hedging Energy Costs with Hybrid



# Hedging and Real Options for Technical and Environmental Uncertainty



# Other “Real Options” from UV Technology

Customer Situation	Future Risk	Hedge
OEM – new clearcoated widget process	Uncertainty about widget acceptance	Buy the “option” to minimize investment – use UV to cure the clearcoat and eliminate need for new thermal oven
OEM - unexpected growth of a new product	Demand exceeding paint curing capacity	Buy the “option” to avoid major investment – ream-out the bottleneck in curing operations with UV cure
Custom job shop	Major customer changing to plastic or composite substrates	Buy the “option” to offer alternative curing - invest in the development of UV as an alternative for curing paint on plastic substrates
Tier 1 Supplier - potential expansion into a developing country	Favorable policy toward foreign investment and availability of reliable energy sources	Buy the “option” to learn about UV to reduce uncertainties of technology - build a UV pilot facility

# Summary

## -New Decision-Making and the Development of the UV Market

- New processes for decision-making are increasingly focusing on the mitigation of risk and uncertainty
- The industry can portray UV technology as a “real option”
  - a tool to mitigate future risk associated with:
    - Environmental regulations
    - Energy costs and policy
    - Coatings technology
- UV technology can be positioned to give customers flexibility in addressing these future uncertainties
- Creative marketing concepts can position UV technology as the favorable alternative for the future