ANALYSIS GROUP
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Setting the Context:

Thinking about the Past as a Prelude to the Process: Policy ⇦⇨ Electric Industry Interactions

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New England's Electricity Scenario Process
November 9, 2006

ISO-NE Scenario Process –
Recapping the Purpose

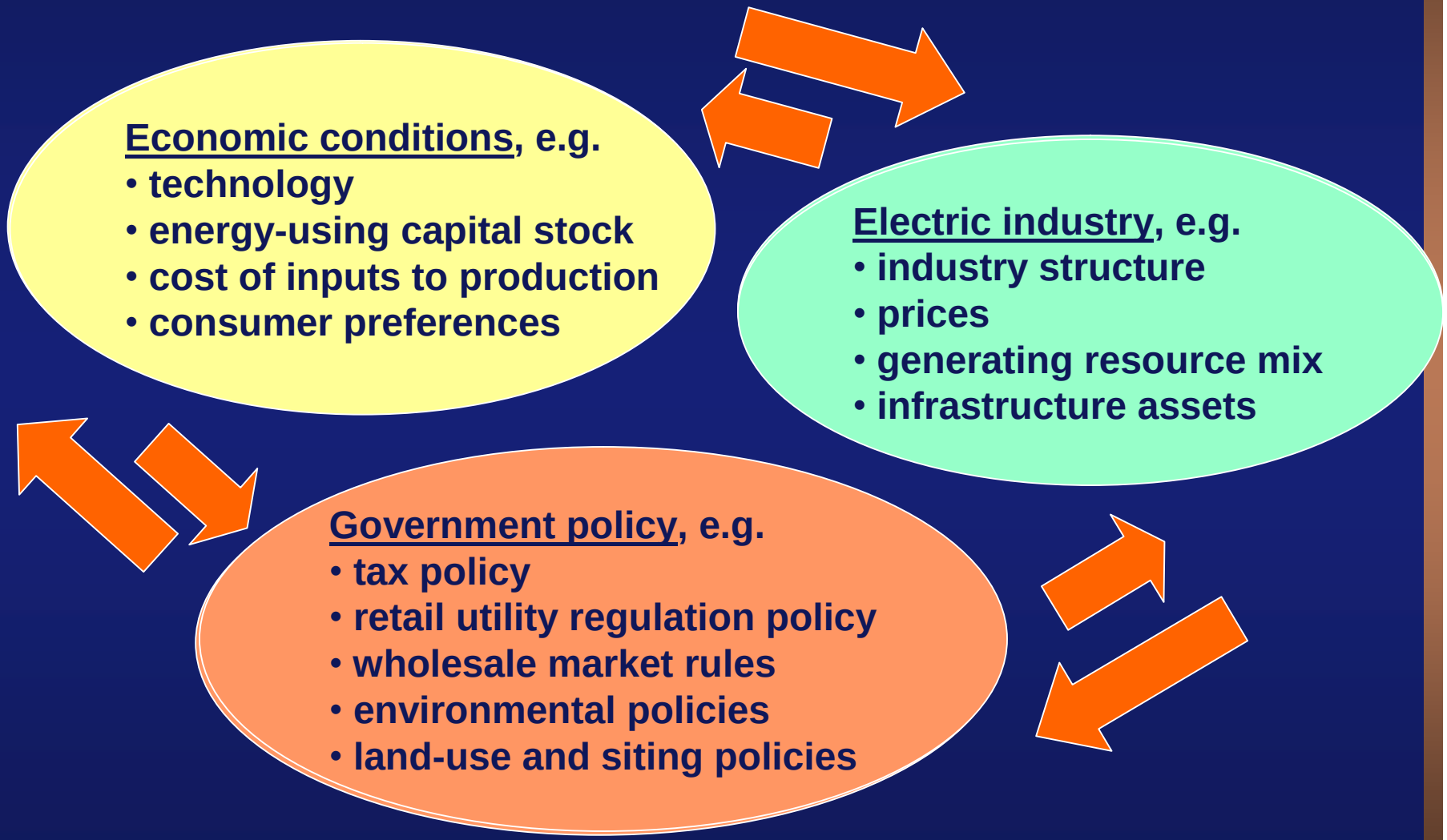
- Use of scenario analysis to characterize possible resource portfolios and analyze their implications for:
  - Environmental, economic, reliability impacts and outcomes
- Identification of key constraints affecting moving in the direction of the different scenarios
- Platform for interested parties to work together to identify key issues to address through action in policy arenas

The role of analysis in informing policy

- "What if" analysis
  - Estimating future outcomes of different scenarios
  - Comparing scenarios in terms of estimated outcomes
  - Identifying constraints that impede progress
  - Identifying policies to address some of these constraints
  - Identifying potential set of unintended consequences
  - Appreciating the interaction between policy and outcomes
- Limits of "what if" analysis
  - Our understandings of system outcomes is affected by a model's structure, data, assumptions
  - In real world, actual outcomes are messier – in positive and negative ways

Systems interactions and feedbacks –

Policy ⇦⇨ Electric Industry Interactions

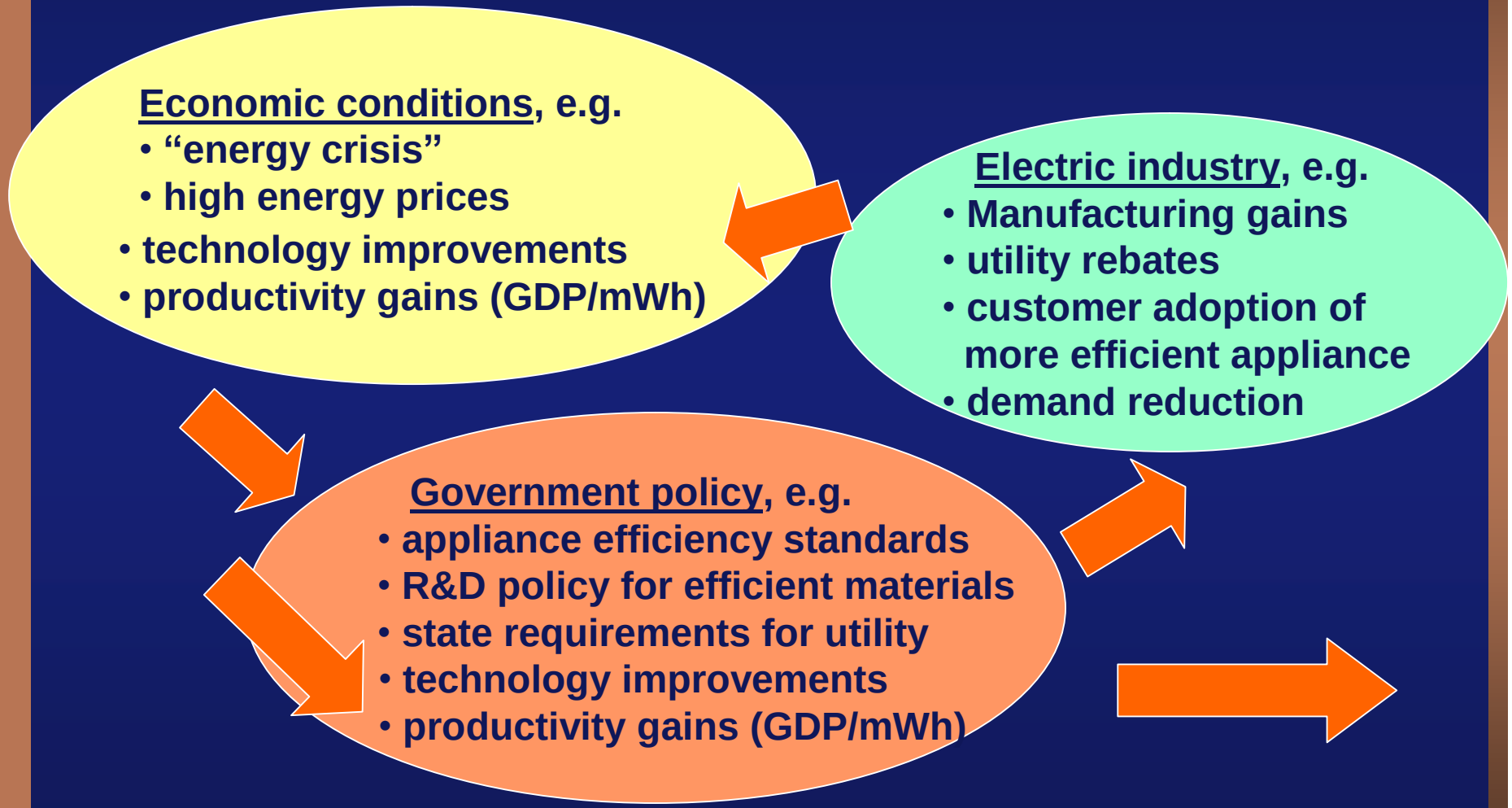


The Past as a Prelude – Classic examples of Policy ⇦⇨ Electric Industry Interactions

- In today's electric industry in New England, the imprint of policy can be seen in countless ways – some subtle, some less so.
- Examples:
  - Combined cycle technology: DOD investment
  - Low emissions / kWh: N'east States' air regulation
  - Low kWh use / capita: energy efficiency programs
  - Transmission access: FERC policies
  - Wind project proposals: RPS
  - Recent retail increases: end of transition prices
  - Consumers' patterns of electricity use: Non-time-differentiated retail rates

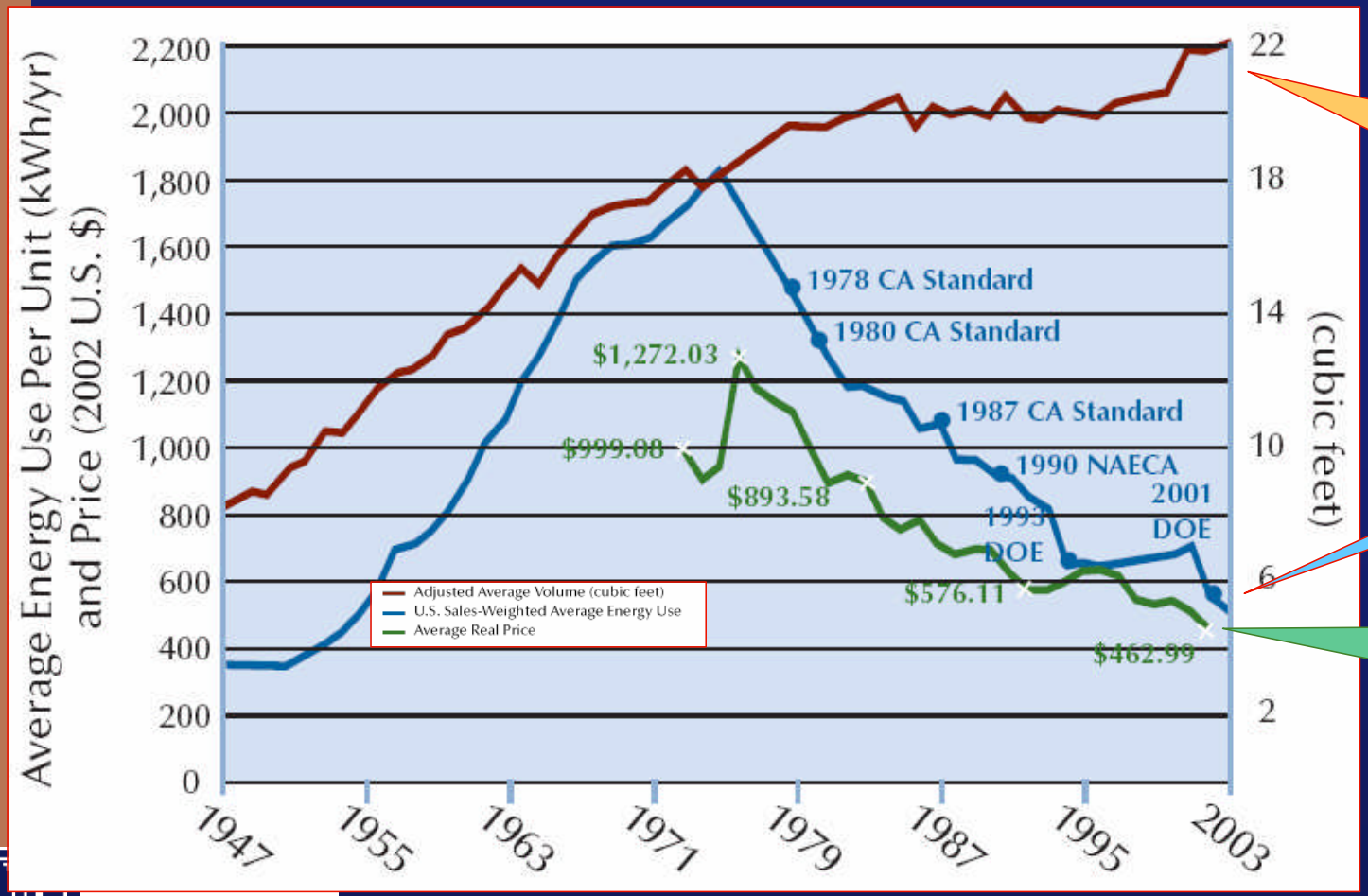
Policy ⇦⇨ Electric Industry Interactions: Example 1

End-use Energy Efficiency



Example 1:
Setting minimum efficiency standards

- **Appliance efficiency codes: Steady progress**
  - **E.g., U.S. refrigerators**



Average volume of refrigerator

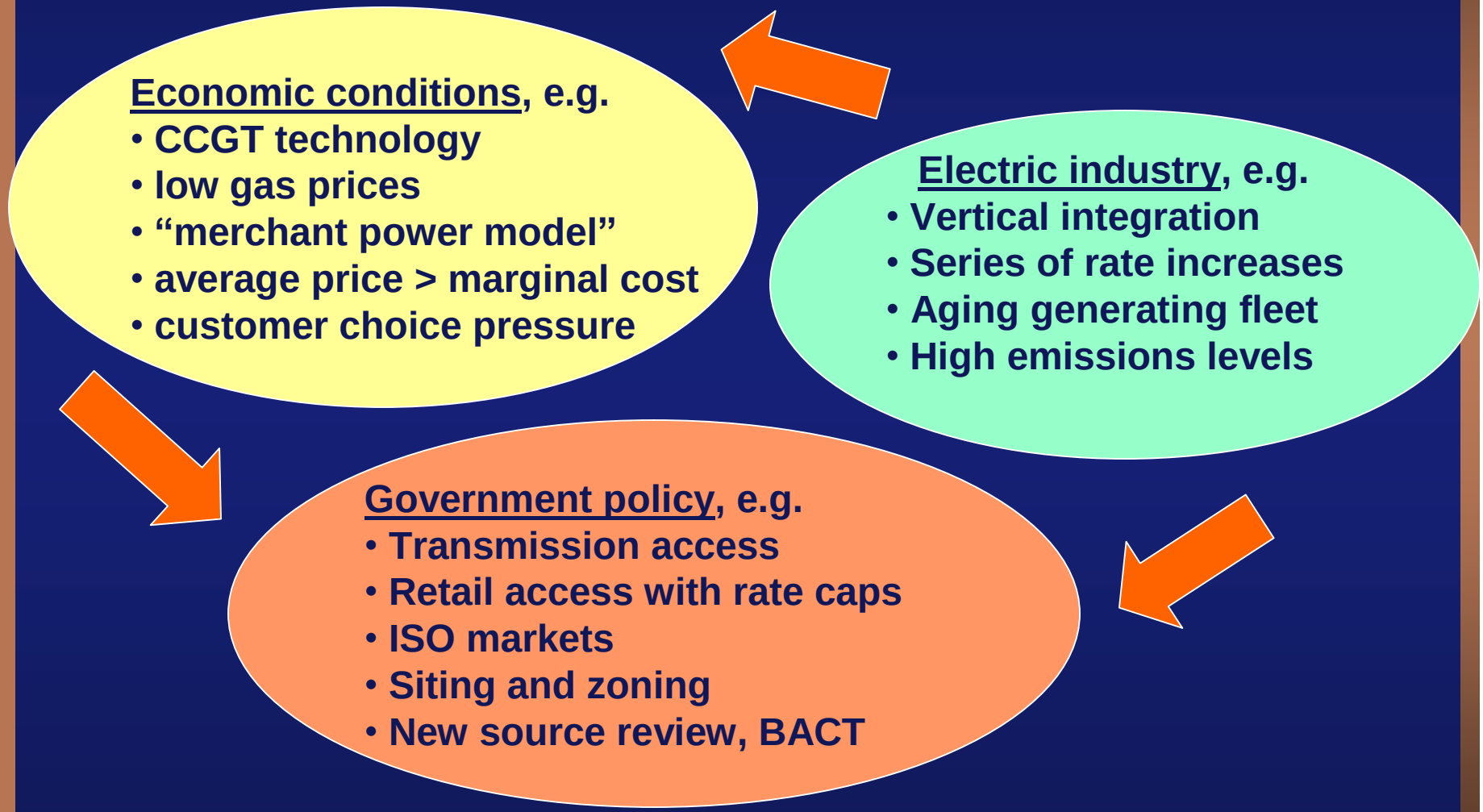
refrigerator energy use

Average cost to use refrigerator

NCEP: 2004. *Ending the Energy Stalemate: A Bipartisan Strategy to Meet America's Energy Challenges,* Washington, DC: National Commission on Energy Policy.

Policy ⇦⇨ Electric Industry Interactions: Example #2a

Electric Industry Restructuring – mid 90s

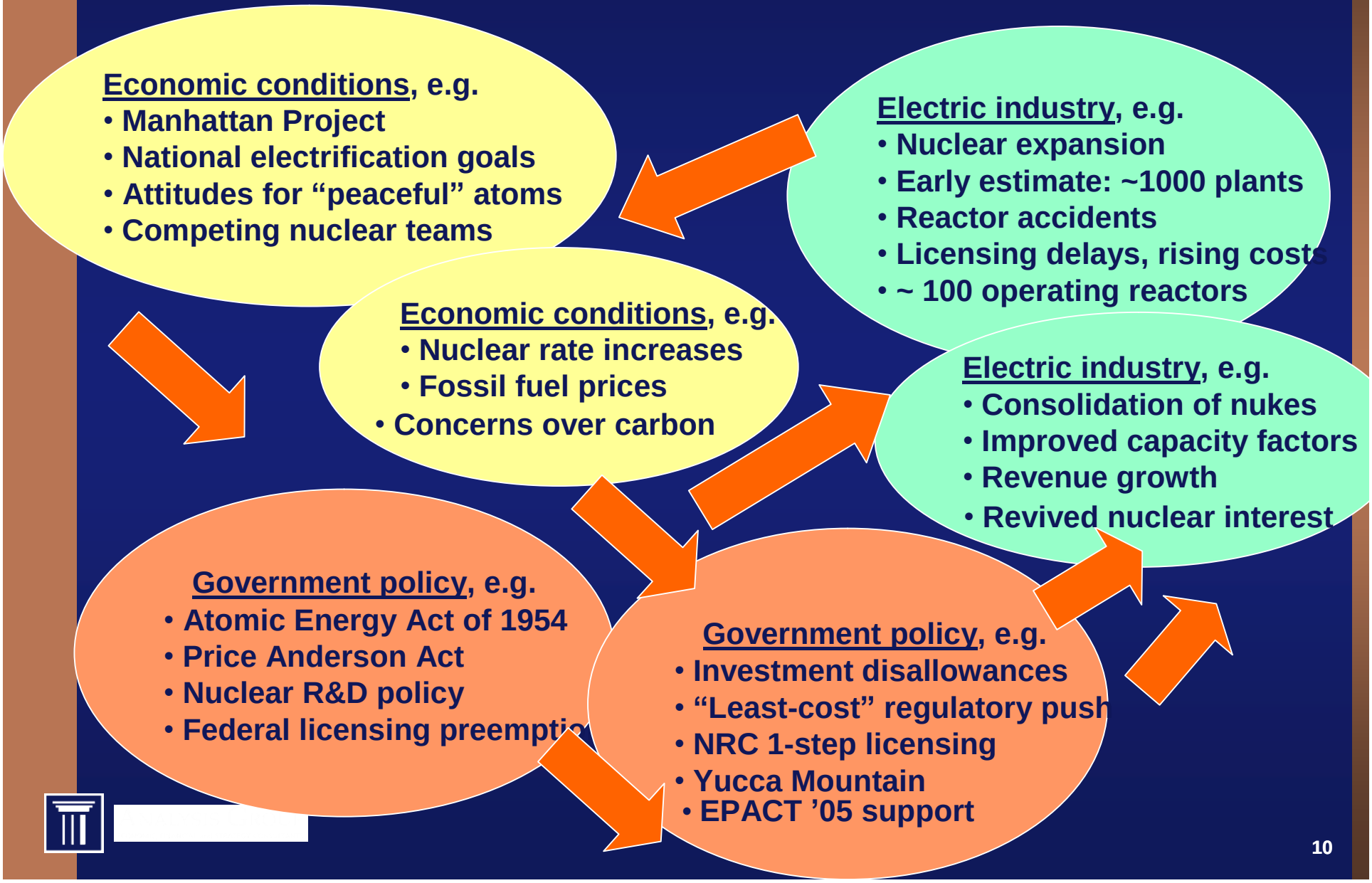


Policy ⇦⇨ Electric Industry Interactions: Example #2b

Electric Industry Restructuring – ~2000-2006

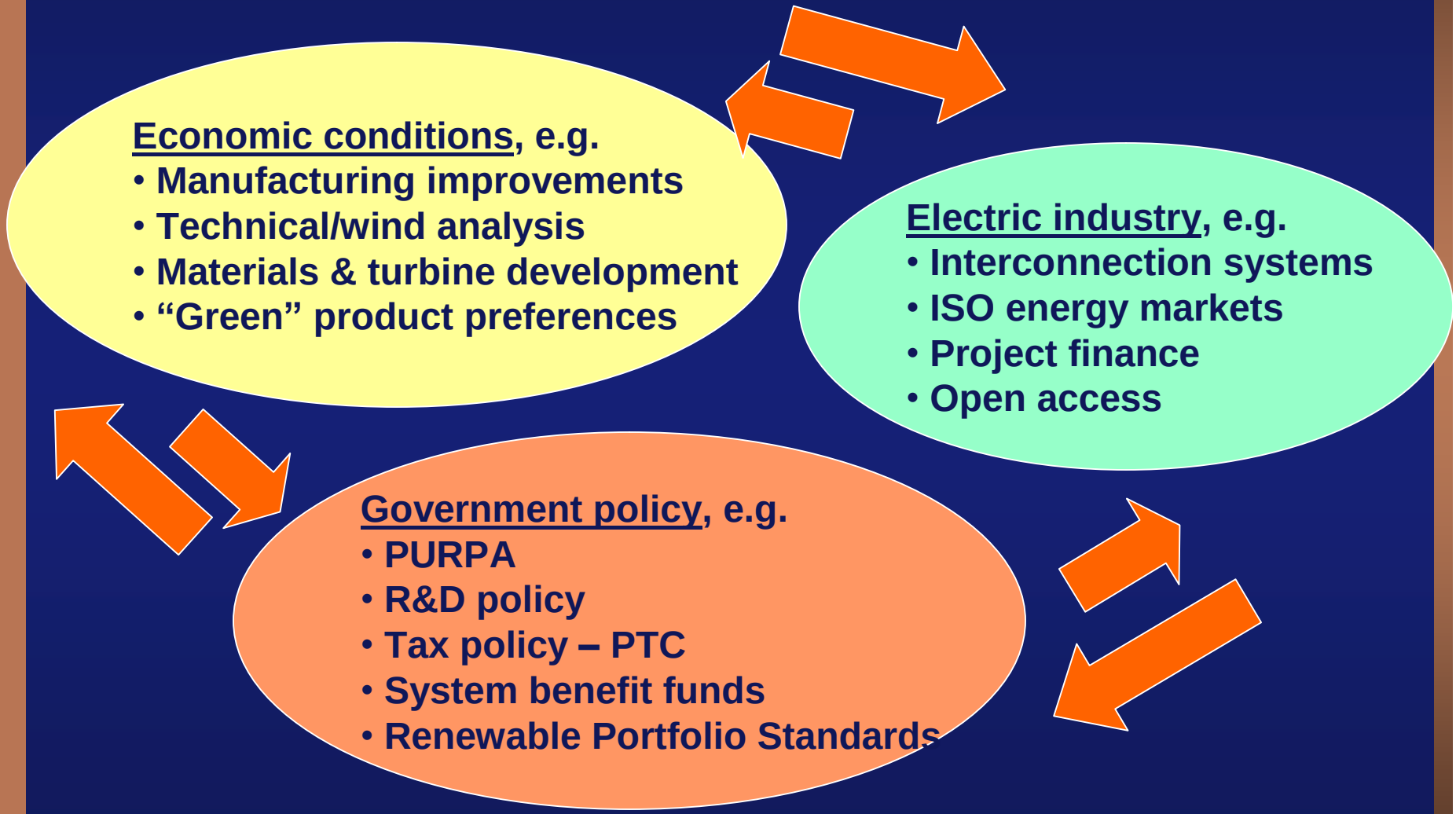
Policy ⇦⇨ Electric Industry Interactions

Nuclear Power Development



Policy ⇦⇨ Electric Industry Interactions

Renewable Power Development



Policy ⇦⇨ Electric Industry Interactions

Conditions often leading to push for policy:

- Externalities
- “Public Good” attributes of a technology or development
- Public health and safety (police power issues)
- Monopoly and antitrust concerns
- Economic development stimulation
- Underwriting risks
- Market conditioning
- Politics, politics, politics

Policy ⇦⇨ Electric Industry Interactions

Policy tool kit:

- Tax policy (PTC, depreciation rates)
- RD&D (nuclear, renewables, sequestration)
- Regulation – air emissions, safety, zoning, tariffs
- Education support – nuclear engineers
- Information development & dissemination (EIA)
- Standards – NAERO, NRC reactor license approval
- Industry structure – mergers/acquisitions/divestitures
- Content/entry requirements – fuel use act, RPS, appliance efficiency standards
- Public financing – securitization, public power
- Transition support – stranded cost, allowance allocation

Policy ⇦⇨ Electric Industry Interactions

Hazards & potholes in the policy field:

- Politics and policy compromises
- Law of unintended consequences
- Policy reach and "leakage"
- Tensions among means and ends
- Changing policy preferences and positions
- Outcomes in markets may require unpopular fixes

- Suggesting a note of caution in this exercise:
  Analyze "what if" scenarios to better understand *possible* outcomes, *possible* implications, *possible* policy levers

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