The political logistics of a rapid low-carbon transition

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Politics – The Hidden Dimension of Learning Curves
Policy Levers

How policy encourages energy transitions

- Increase the cost of fossil fuels
  - Put a price on carbon
  - Set price controls
  - Reduce subsidies
  - Tighten environmental standards for extraction
  - Improve market access
- Decrease the cost of low-carbon energy
  - Subsidize production or deployment
  - Subsidize innovation and development
  - Performance standards
  - Quantity mandates (amounts or %)
- Decrease adoption of fossil fuels
  - Performance standards
  - Public procurement
- Increase adoption of low-carbon energy
  - Carbon Tax
  - Other energy taxes (e.g., Btu tax, gasoline tax)
  - Cap-and-trade
  - Remove trade or market barriers
  - Set regulatory standards
  - Support infrastructure
  - Require direct payments (e.g., feed-in-tariffs, net metering, rebates)
  - Provide tax incentives
  - Assume risk (e.g., loan guarantees or insurance)
  - R&D funding
  - Demonstration agencies
Carbon Price
Eliminate fossil fuel subsides
R&D

The Economist’s Theory
Renewables deployment subsidies (RPS, NEM, ITC/PTC)
R&D – CCS, nuclear

The Politics in Practice

- Carbon Price
  - Eliminate fossil fuel subsidies
Pushing Progress, Managing Backlash

• Progress:
  – Scale: Federal government spending, ~$300 bn annually. Deployment, system support
  – Innovation: ARPA-E, ARPA-C?

• Backlash:
  – Corporate backlash: Utilities and fossil fuel companies with stranded costs/assets.
  – Public backlash: economic costs (e.g. carbon price); local costs (wind projects, transmission lines, nuclear plants, CCS storage).
Big open political questions in rapid low carbon transition

• Will fossil fuel companies and electric utilities become partners in fighting climate change, or morph from climate deniers to delayers?

• Stranded cost payments: Securitization? Accelerated deprecation? Write offs?

• Lawsuits: shareholder fraud, liability for climate impacts, IOU => POUs (i.e. PG&E)
THANK YOU!

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