Use of Social Discount Rates

William B. Marcus
Principal Economist, JBS Energy, Inc.
for The Utility Reform Network

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Witness Qualifications

- 30 years specific experience with economic analysis of energy and utility issues
- 24 years at JBS
- Current clientele is largely energy consumers, government agencies, and environmental groups
- Testified before about 40 regulatory commissions and courts including CEC on many occasions.
- Worked at CEC in 1970s-1980s
- Prepared teaching materials on Benefit-Cost Analysis at Kennedy School of Government at Harvard before coming to California.

Prior Presentation on This Topic

- Testimony for TURN on "Discount Rates in Economic Assessment of Transmission Projects" in CPUC A. 05-04-014 (Devers-Palo Verde 2)
  - We have copies available today
  - Incorporate into the record with this presentation, as it provides more detail
  - Arguments adopted by CPUC

Argument for Social Discount Rates

- The private sector does not give adequate weight to the future relative to the present.
- Argument is particularly important for irreversible impacts.

Argument Against Social Discount Rates

- Social discount rate is less than opportunity cost of capital.
- Means that projects picked using social discount rate will "crowd out" projects with higher benefits.
- Society will be worse off.

Social Discount Rates and the Utility Sector

- The social discount rate is less than the real cost of raising debt and equity capital to build a utility or private sector project like a powerplant or a transmission line.
- The social discount rate is less than the rate of return that users of the utility system must pay for utility capital.
- Ratepayers are likely to prefer lower rates to building a project that barely passes a cost-effectiveness test with a social discount rate.

Irreversible Effects

- Social discount rate may be theoretically better for a case where a decision is irreversible, locking in consequences for many years.
  - Building and Appliance Standards
  - Lost Opportunities in conservation if standards don't look at the future.
- But most utility projects don't fit this definition.
  - Projects can be built now, deferred, or not built at all.
  - Only irreversible effects of a transmission project involve the environmental degradation it produces.

Discounting Different Elements of a Project or Plan with Different Discount Rates

- Quickly Becomes Subjective
  - If gas gets a social discount rate, do we adjust the capital cost of a new nuclear plant if comparing gas vs. nuclear to take risk into account? If so, how?
  - We can't conclude that nuclear is the answer in a nuclear vs. gas scenario because other technologies (e.g., renewables) may have different risk profiles
- Run scenarios to cover relevant risks rather than changing discount rates for individual elements.
- Assume that policy makers are smart enough.
  - Can pick a plan or project that may be more expensive than the least cost if it has valuable risk-reduction or environmental attributes.

"Strategic" Benefits

- Be transparent! Don't play with the discount rate, value the benefits directly!
- When one values "strategic" benefits directly, some of the benefits are:
  - Relatively easy to calculate directly (e.g., air emissions values)
  - Already internalized (legislation says to buy renewables and build transmission for renewables so you don't need a discount rate to do it);
  - Small when considered as incremental to existing programs (insurance values of transmission);
  - Extremely uncertain over long periods of time (e.g., measuring gas prices over 40 years when the entire electric generation technology could change)

If using a social discount rate

- Do a sensitivity analysis using a utility cost of capital so the public can see the impact of the choice of discount rate.
- Require benefits to exceed costs by a significant amount – gives more weight to the future without as much crowding out of private sector investments or use of utility capital earning less than its rate of return.

Unintended(?) Consequence of Social Discount Rate

- Social discount rate for gas, if used for energy efficiency under current CPUC energy efficiency incentive framework could give utilities greater incentives for the same amount of conservation.
- Ratepayers pay more per unit of conservation for no reason.
- Money for nothing.

Conclusion

- Do not use social discount rates for analysis of generation and transmission projects or valuing natural gas.
  - Ratepayers have to pay 9% (6-7% real) return (13% return including income and property taxes), so using a 3% real discount rate can only raise rates.
  - Analyze fuel, environmental and strategic costs and benefits transparently, not by changing discount rate.
  - CPUC agrees with TURN that transmission should be evaluated using utility discount rates (in Devers-Palo Verde 2 decision in A.05-04-015)
  - Federal government uses a private sector discount rate as base case (Office of Management and Budget Circular A-94)