

TRC and NZE Don't Mix

Can we find a fairer test?

2013 getting to zero national forum

PechaKucha

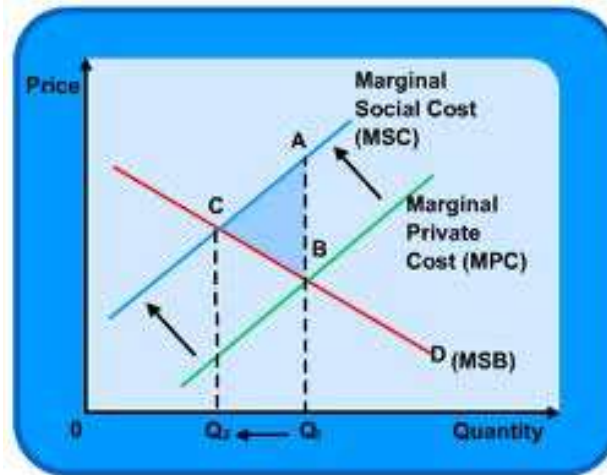
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Efficiency Potential

- ❑ Theoretical Max Potential > Technical Potential
- ❑ Technical Potential > Economic Potential (Society)
- ❑ Economic Potential (Society) > Economic Potential (Personal)

externalities



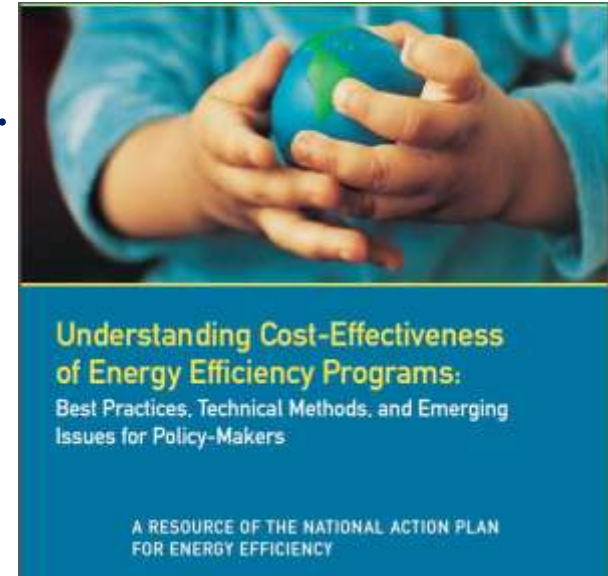
Efficiency Potential

- Economic Potential (Personal) > Market Structure Potential
 - Mismatched motivations
 - Business model failures

All of the above > What gets done without catalyst

Cost Effectiveness

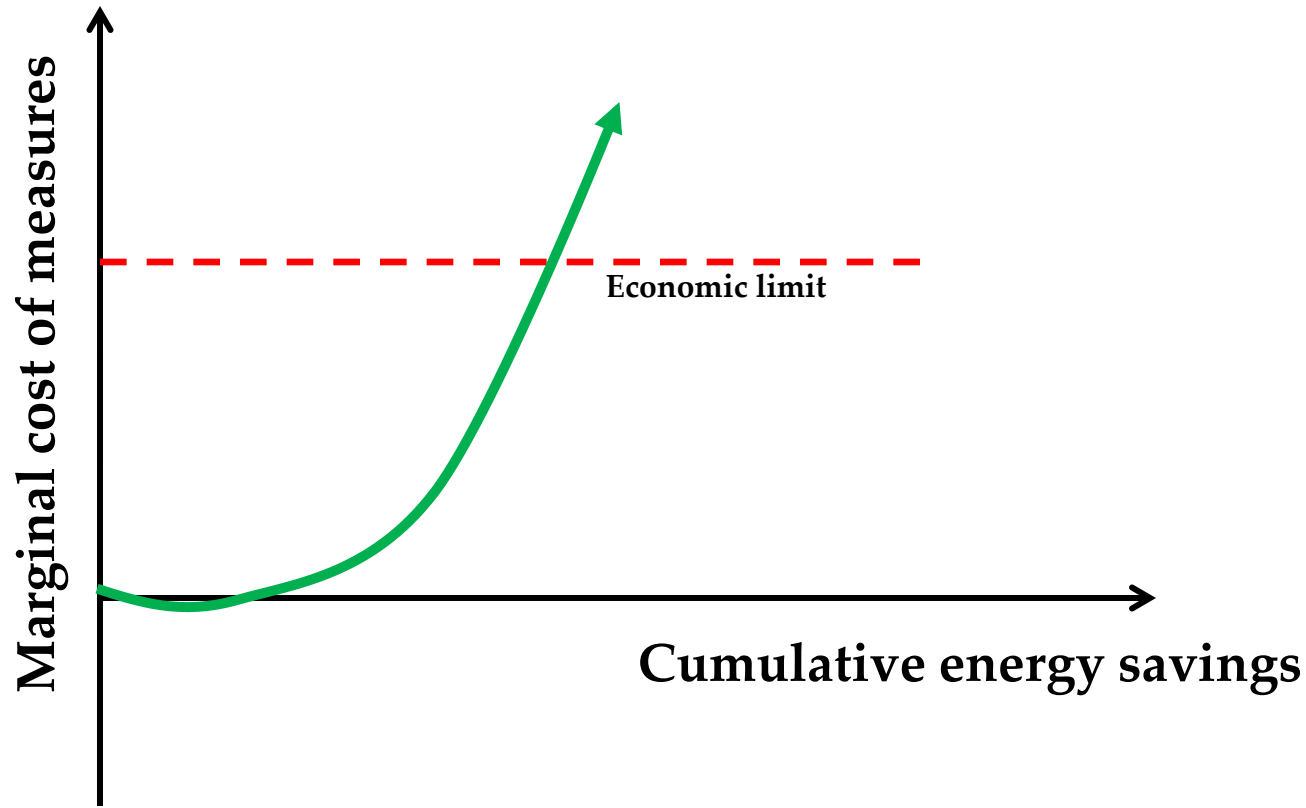
- ❑ Five cost-effectiveness tests for evaluating energy efficiency programs originated in California in 1983 and remain in use today.
- ❑ No single test does it all.
- ❑ Each test provides different information about the impacts of energy efficiency programs from different vantage points in the energy network.



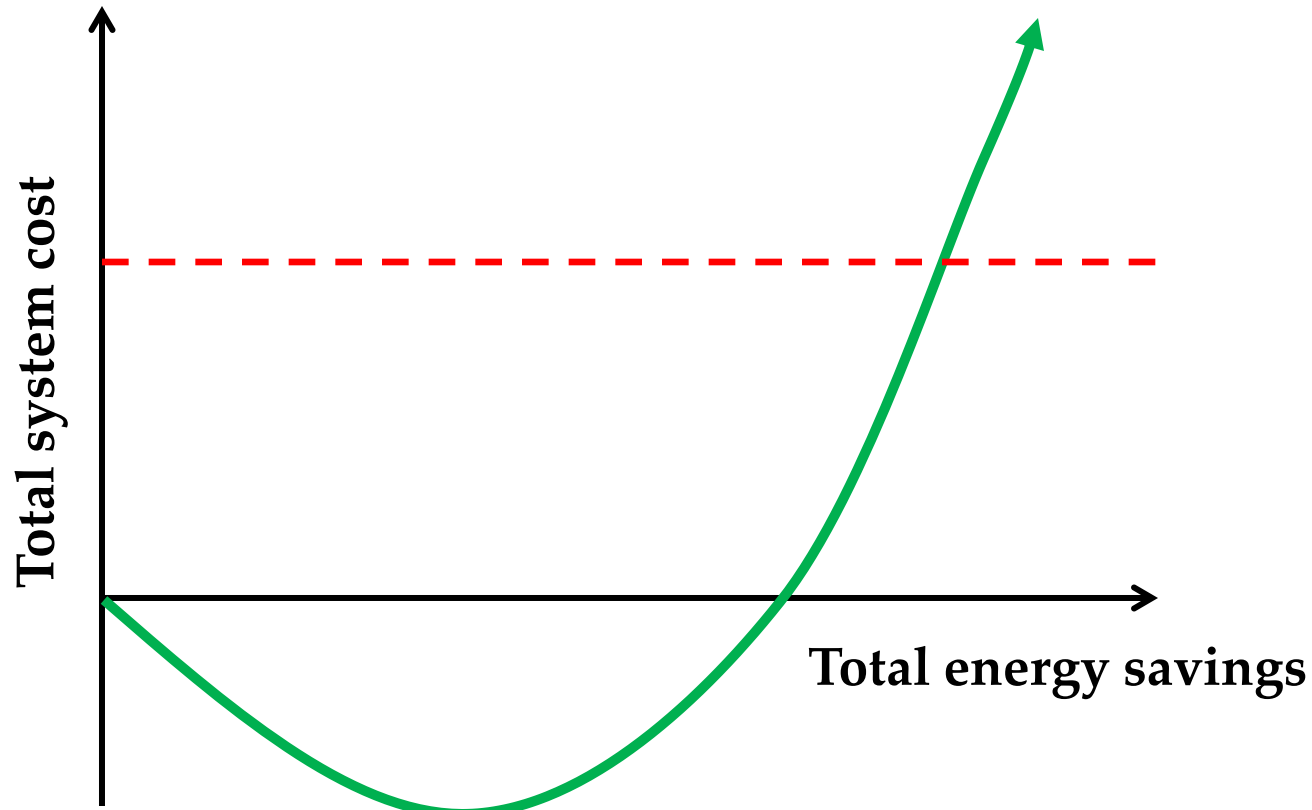
- These tests evaluate cost-effectiveness:
 - At the “measure” level, and/or
 - At the “program” level, and/or
 - At the “portfolio” level

- BUT
 - Do we evaluate efficiency at a full building system or project level enough?
 - Might we need to do more of this for NZE?
 - Durability of measures, negative cost contributions...

Incremental View of Efficiency



Whole System View



Goals Have Changed Over Time

- ❑ **40 years ago: *Efficiency as an objective***
 - Minimize CapEx: avoid building generation
 - Educate, inform, deliver audits
 - Incremental view is born

- ❑ **25 years ago: *Efficiency as a resource***
 - KW and KWh impact
 - Implement EEM's
 - ESCO's, IOU's make a profit from efficiency
 - Emission trading for SO_x NO_x

Goals Have Changed Over Time

- ❑ **10 years ago: *Efficiency as a public good***
 - System Benefit Charges, Efficiency Trusts
 - EEM's prevail
 - Incremental view continues

- ❑ **Today: *Efficiency as a piece of sustainability***
 - Market Transformation, GHG reduction
 - NZE, Deep retrofit, Smart grid, microgrids
 - And still, incremental view remains

Technology Too Has Changed

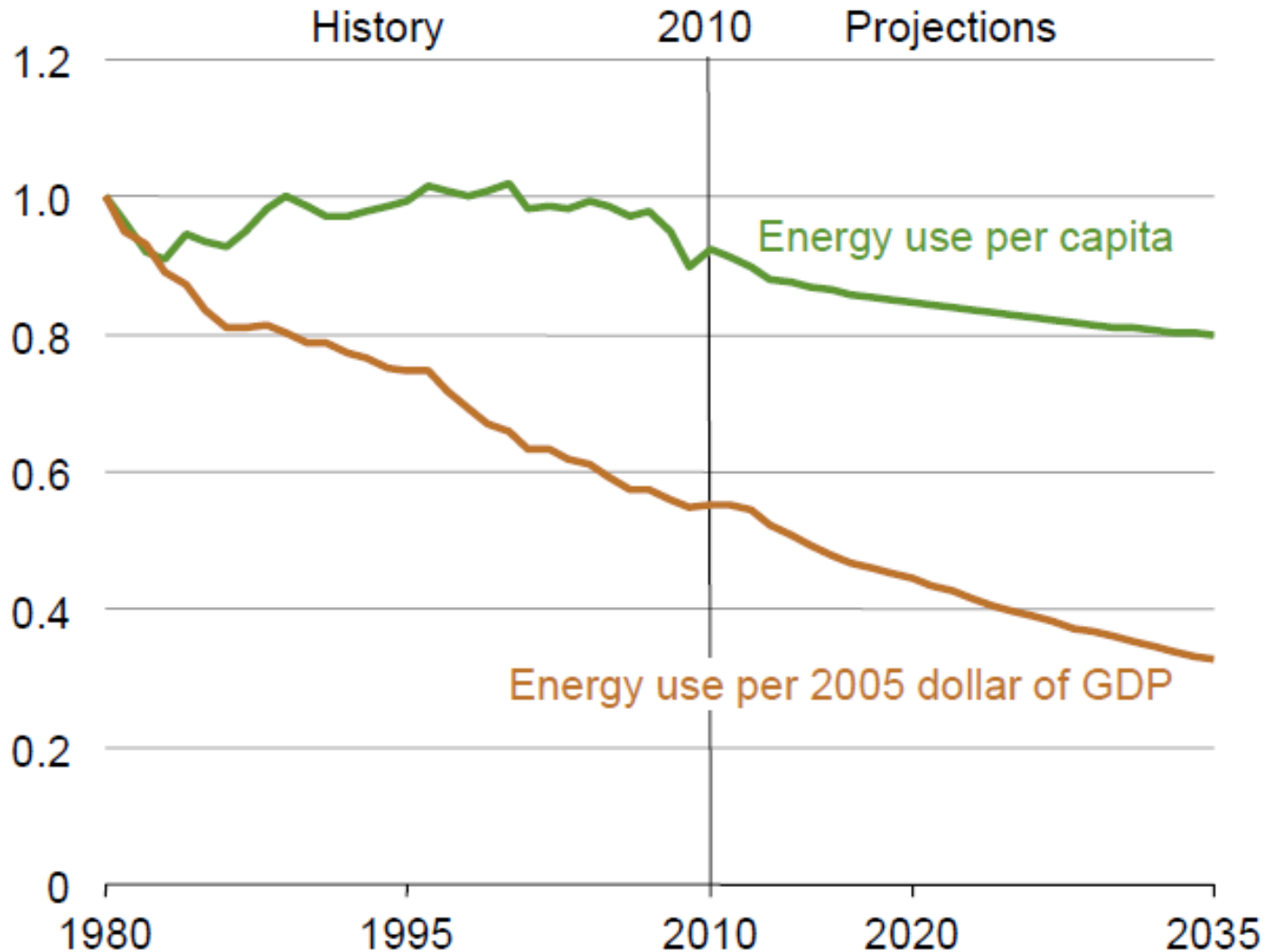
- ❑ Early days we had a lot of junk
 - De-lamping
 - 34w T-12
 - CFL 1.0
 - Solid State Ballasts (harmonics, failures, etc.)
 - HPS, LPS lighting
 - First generation EE Motor failures

Technology Has Gotten Better

- ❑ Technology has more than caught up and offers much more than just efficiency
- ❑ Codes and standards play a bigger role

- ❑ BUT
 - We still have market failures
 - We still get incremental gains (cream skimming)
 - We still pay \$\$ for CFL's

Energy Productivity Forecast



A lot Has Changed Since 1983



While lots could be debated about TRC and other tests, the point of this JOLT is to ask:
Is there a better way to evaluate NZE projects ???

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