

According to [Illinois law](#), benefits in the TRC test should include quantifiable societal benefits. Avoided costs shall include reasonable estimates of the cost of greenhouse gas legislation or regulation.

“A total resource cost test compares the sum of avoided electric utility costs, representing the benefits that accrue to the system and the participant in the delivery of those efficiency measures, **as well as other quantifiable societal benefits**, including avoided natural gas utility costs, to the sum of all incremental costs of end-use measures that are implemented due to the program (including both utility and participant contributions), plus costs to administer, deliver, and evaluate each demand-side program, to quantify the net savings obtained by substituting the demand-side program for supply resources. In calculating avoided costs of power and energy that an electric utility would otherwise have had to acquire, **reasonable estimates shall be included of financial costs likely to be imposed by future regulations and legislation on emissions of greenhouse gases.**”

Utilities and stakeholders thus must judge which societal benefits are quantifiable, how these benefits should be quantified, and the likely financial costs of regulation of global warming pollution.

1. Which societal benefits are quantifiable?

NRDC recommends that the Illinois Stakeholder Advisory Group (“SAG”) focus on the out-of-pocket costs that consumers and utilities avoid as a result of implementing energy efficiency measures. The goal here is not to artificially raise the TRC, it is rather to ensure that the TRC accurately represents the quantifiable benefits of energy efficiency. California’s Standard Practice Manual includes a list of potential “adders” that includes: the benefit of avoided environmental damage (for electric utilities, the avoided air pollutant emissions from power plants), the benefit of avoided transmission and distribution costs, the benefit of increased system reliability, non-energy benefits such as water savings and reduced waste streams from energy efficient industrial processes, and the benefits of fuel diversity. NRDC recommends that utilities quantify and include in the TRC:

- Water savings from energy efficiency measures
- Avoided environmental damage from air emissions from electric power plants
- Avoided transmission and distribution system investments (Ameren-IU already does this, and this is properly considered as a utility system benefit, rather than a societal benefit)

2. How should these benefits be quantified?

- Water savings should be based on a measure’s water savings and water tariffs in each utility’s service territory. Recognizing resource constraints, utilities should choose one water

utility in their service territory for this analysis: the City of Chicago for ComEd and Peoria for Ameren-IU.

- Avoided environmental damage should be included by matching, on an hourly basis, a measure’s energy savings with the marginal generating unit’s air emission permit costs per unit of energy. This will ensure that energy efficiency’s ability to avoid baseload coal emissions is quantified.

3. What are the likely financial costs of the regulation of global warming pollution?

In 2009, the U.S. House of Representatives passed H.R. 2454, the American Clean Energy and Security Act. The bill would place a declining cap on global warming pollution, issue permits to emitters, and allow trading of these permits. The U.S. Senate is currently considering a different cap and trade bill sponsored by Senators Kerry and Lieberman. Regardless of whether these bills become law in 2010, greenhouse gasses are likely to be regulated in the near future and the costs of global warming pollution are already a factor in prudent utility planning and should be considered in the TRC. Several analyses have recently been conducted about the likely price of carbon emissions under a cap and trade regime.

In the Environmental Protection Agency (“EPA”) analysis of H.R. 2454, the price of CO₂ equivalent in the core scenario was \$13/metric ton in 2015 and \$16/ton in 2020. Across all scenarios, and varying assumptions about international offsets, CO₂ equivalent ranged in price from \$13-\$24/metric ton in 2015 and from \$16-\$30 in 2020.¹

In the EPA analysis of Kerry and Lieberman’s American Power Act, the price of CO₂ equivalent in the core scenario was \$16-17/metric ton in 2013 and \$23-24/metric ton in 2020. With limits on the amount of international offsets, CO₂ equivalent ranged in price from \$12-41/ton in 2013 and \$13-59/ton in 2020.²

In 2008, the consultancy Synapse Energy Economics produced a CO₂ price forecast.³ Their Mid CO₂ price forecast starts at \$15/ton (2007 dollars) in 2013 and rises to \$53/ton by 2030. Their Low forecast starts at \$10/ton in 2013 and rises to \$23/ton in 2030. Their High forecast starts at \$30/ton in 2013 and rises to \$68/ton in 2030.

NRDC recommends that utilities use the EPA’s American Power Act core scenario price to reflect the likely cost of future regulation of global warming pollution. This CO₂ price should be considered in a similar way as those recommended for other environmental externalities: they should be added to the price of the hourly marginal unit that energy efficiency is displacing.

¹ http://energycommerce.house.gov/Press_111/20090623/hr2454_epaanalysis2.pdf

² http://www.epa.gov/climatechange/economics/pdfs/EPA_APA_Analysis_6-14-10.pdf

³ <http://www.synapse-energy.com/Downloads/SynapsePaper.2008-07.0.2008-Carbon-Paper.A0020.pdf>

NRDC proposal to Illinois SAG on “quantifiable societal benefits” and discount rate
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What discount rate should be applied to the TRC’s costs and benefits?

Illinois utilities currently plan to use their weighted average cost of capital (“WACC”) in discounting future costs and benefits of energy efficiency programs. NRDC recommends against this. The WACC is an average of a variety of utility system investments from the least to most risky. Energy efficiency, post-evaluation, is one of the least risky investments in the utility system: it reduces the cost and volatility of customer bills and it avoids the construction of power plants and other projects of uncertain expense and lead time. Investments with lower risk should be evaluated using a lower discount rate.

NRDC recommends the use of a 3% real discount rate (net of inflation) to evaluate future costs and benefits. This aligns with the discount rate used by the federal government in evaluating energy efficiency standards⁴, and with historic returns of low-risk investments.

⁴ See U.S. Department of Commerce, Energy Price Indices and Discount Factors for Life-Cycle Cost Analysis, Publication # NISTIR 85-3273-19, April 2004, Page 1.