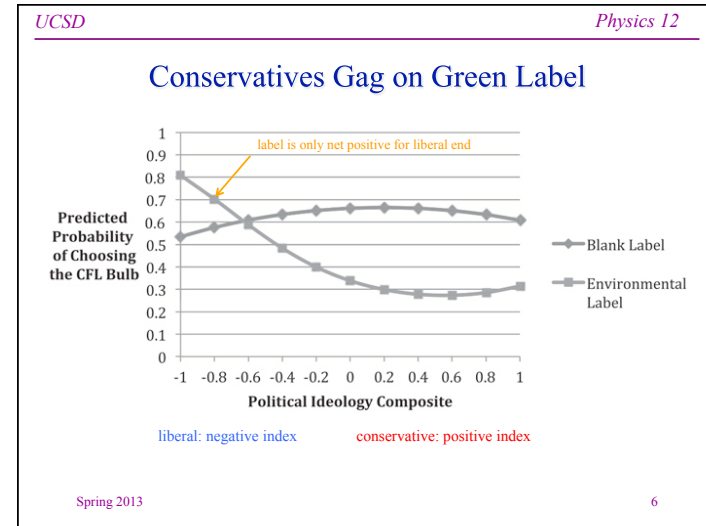


UCSD Physics 12

What Have You Conserved For Me Lately?

- Climate Desk article
 - reports on academic study published in Proc. Nat'l. Acad. Sci.
 - “one recent [study](#) found that giving Republican households feedback on their power use actually encourages them to use *more* energy.”
 - “Why do conservatives, who should have a natural inclination toward conservation, have a beef with energy efficiency? It could be tied to the political polarization of the climate change debate.”

Spring 20135



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Life After Oil and Gas

- NYT: 2013-03-23; Rosenthal
 - “Thirteen countries got more than 30 percent of their electricity from renewable energy in 2011”
 - “many of the European countries that have led the way in adopting renewables had little fossil fuel of their own, so electricity costs were already high.”
 - article reports blueprint for New York State to get all electricity from wind, solar, and hydro
 - skeptics say it’s too costly as yet
 - proponents say payback in < 20 years, esp. if carbon tax
 - “Sounds good on paper, but even Europe is struggling a bit with its renewable ambitions at the moment.”

Spring 20137

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Europe Faces a Crisis in Energy Costs

- NYT: 2013-04-17; Reed
 - Up to 23% renewable electricity; up from 13% in 2002
 - But costs are up nearly 20%
 - and during persistent economic downturn
 - Spain slashing backing of solar/wind
 - Steel production down 30%
 - New car sales lowest since 1995
 - Manufacturing moving to cheaper energy markets

Spring 20138

Revisiting the Facts on Fracking

- “...use a highly speculative estimate of the gas supply in the Marcellus shale of Eastern America that prevailed for years at the U.S. Energy Department. Using actual results from drilled wells, in 2011 U.S. government geologists slashed the Energy Department figures by about two-thirds.”
- controversy over leakage rates of fracking sites

Gas Drilling and Our Energy Future

- NYT Letters: 2013-04-20
 - lighting kitchen faucet
 - assurances ring hollow; exempt from Clean Air Act, Clean Water Act, Safe Drinking Water Act
 - fugitive methane may make climate change *worse*
 - reports of groundwater contamination widespread
 - “We can decide not to allow fracking, but we can’t ignore the choices that confront us. Would we rather have fracking, or level a mountaintop for the coal?”
 - I call that a false choice

Dark Side of Energy Independence

- NYT: 2013-04-27; Alter and Fishman
 - “By some estimates, the United States is on track to overtake Saudi Arabia as the world’s largest oil producer as early as 2017, start exporting more oil and gas than it imports by 2025, and achieve full energy self-sufficiency by 2030.”
 - enthusiasts extrapolate recent uptick and take their pants off and dance around for joy, imagining a glorious future of the U.S. as an oil exporter
 - point of article is that U.S. energy independence will cause some problems in other parts of world from which we can’t realistically isolate ourselves

Announcements

- HW due today
- Quiz due by 11:59 PM tonight
- Midterm Monday
 - bring red half-sheet scan-tron and #2 pencil
 - calculator okay (not vital)
 - study guide online
 - front page formulas online
 - transmitter questions and answers online
 - on TED can review HW solutions and Quizzes
 - quiz questions via gradebook:grade:calculated-grade