

# Caps vs. Standards: Cap Carbon, and We Can All Go Home

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Based in part on material from [Carbonomics](#)

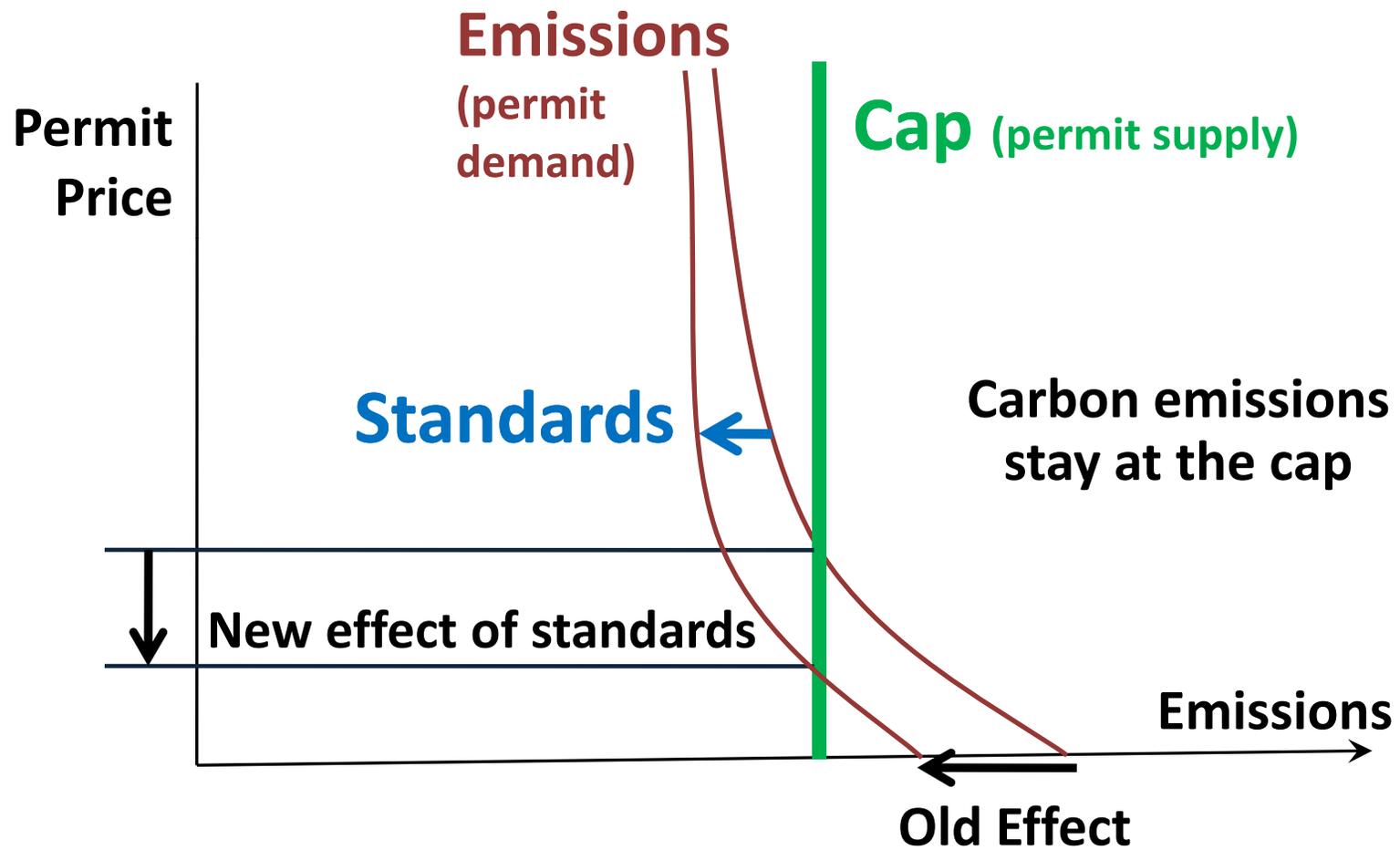
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March 31, 2009

[stoft.com](#)

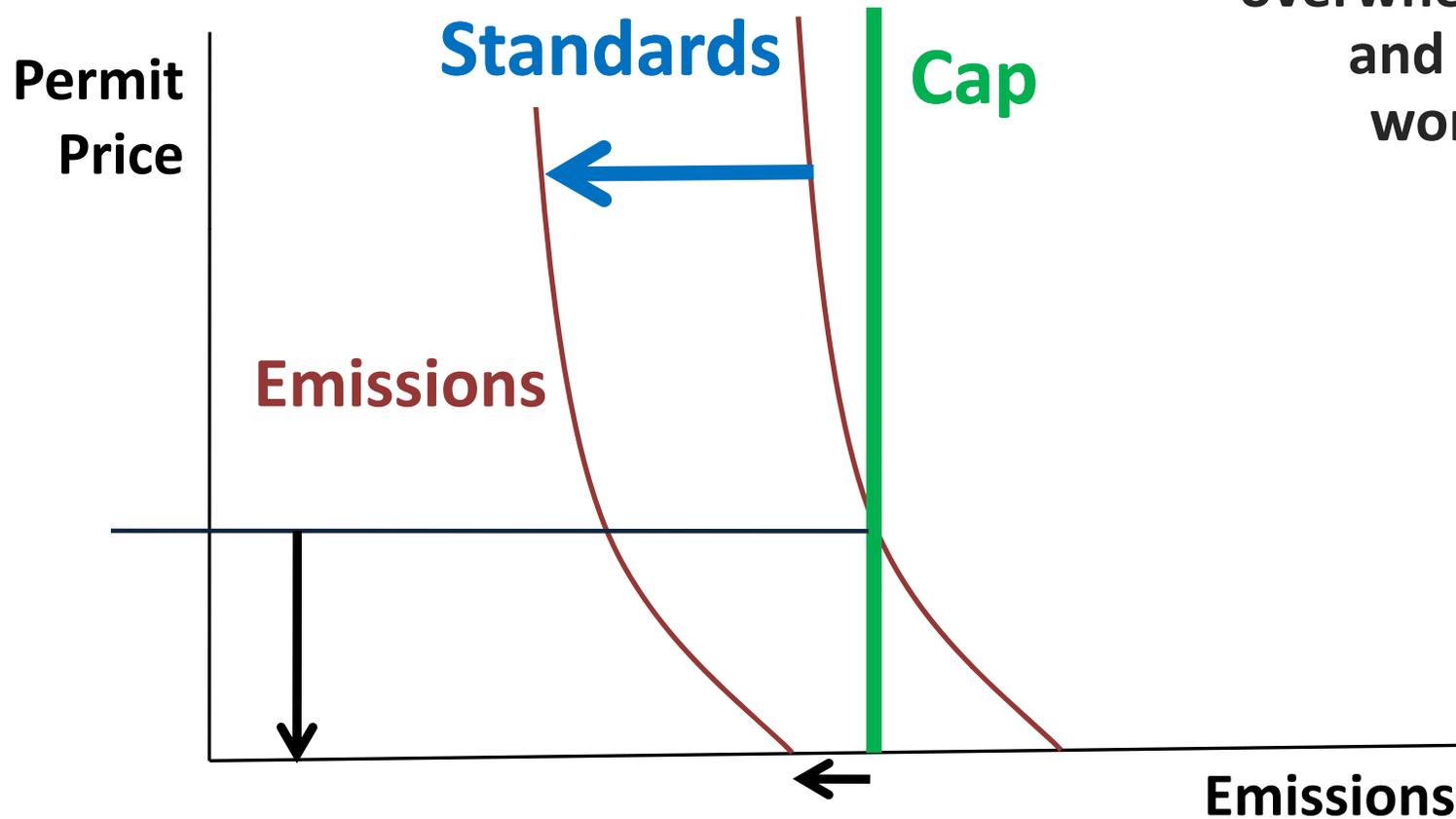
# Standards Reduce Permit Prices

( not rocket economics )



# Standards Can Reduce Carbon

if the cap is overwhelmed and stops working.



# Overwhelm the Cap?

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- Not likely with a cap that cuts carbon 83% in 39 years.
- If not overwhelmed: Emissions = The Cap.
- So,

**There's nothing anyone can do  
to change carbon emissions  
that are covered by the cap.**

# *Funny Cap Effects*

# California's Fuel-Efficient Cars

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- Under a national cap, no carbon is saved
  - California saves carbon, so other states emit more.
  - Why do they emit more?
  - Cheaper permit prices.
  - How do they emit more? Coal plants and Hummers.
- ➔ So Californians spend more on hybrids so that Texans can drive Hummers.

# Germany Did the Experiment

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Spiegel Online notes, “Experts have known about this situation for some time, but it still isn’t widely known to the public.”

“Dear Daniel, sorry, but **the renewable energy law won’t do anything for the climate** anyway.” That’s from an internal eMail obtained by Spiegel from Germany’s Green Party.\*

“Despite Europe’s boom in solar and wind energy, CO<sub>2</sub> emissions haven’t been reduced by even a single gram [of carbon]. ... **German wind turbines... simply allow Eastern European countries to pollute more.**”

\*[www.spiegel.de/international/business/0,1518,606763,00.html](http://www.spiegel.de/international/business/0,1518,606763,00.html)

# How the Cap Works in Germany

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- **Wind generators make clean electricity.**
- German coal plants burn less coal, so the owners have unused carbon permits.
- They sell all their extra permits.
- Some go to other German businesses and some to Poland, Slovakia, and other places.
- **Polish and Slovakian plants burn more coal.**

**But do they say thank you?**

# Renewable Electricity Standards

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- Suppose the permit price is \$20 (indirect subsidy).
  - The production credit (etc.) subsidy is \$20.
  - New RES wind projects cost  $> \$40$  / ton saved.
    - Otherwise they wouldn't be new (additional).
  - The permit price will fall until an equal amount of non-wind projects are cancelled.
  - The cancelled carbon savings was costing  $< \$20$ .
- ➔ Net cost is  $> \$20$  to shift carbon savings to wind and save **zero** tons of carbon.

# Is a National RES Bad?

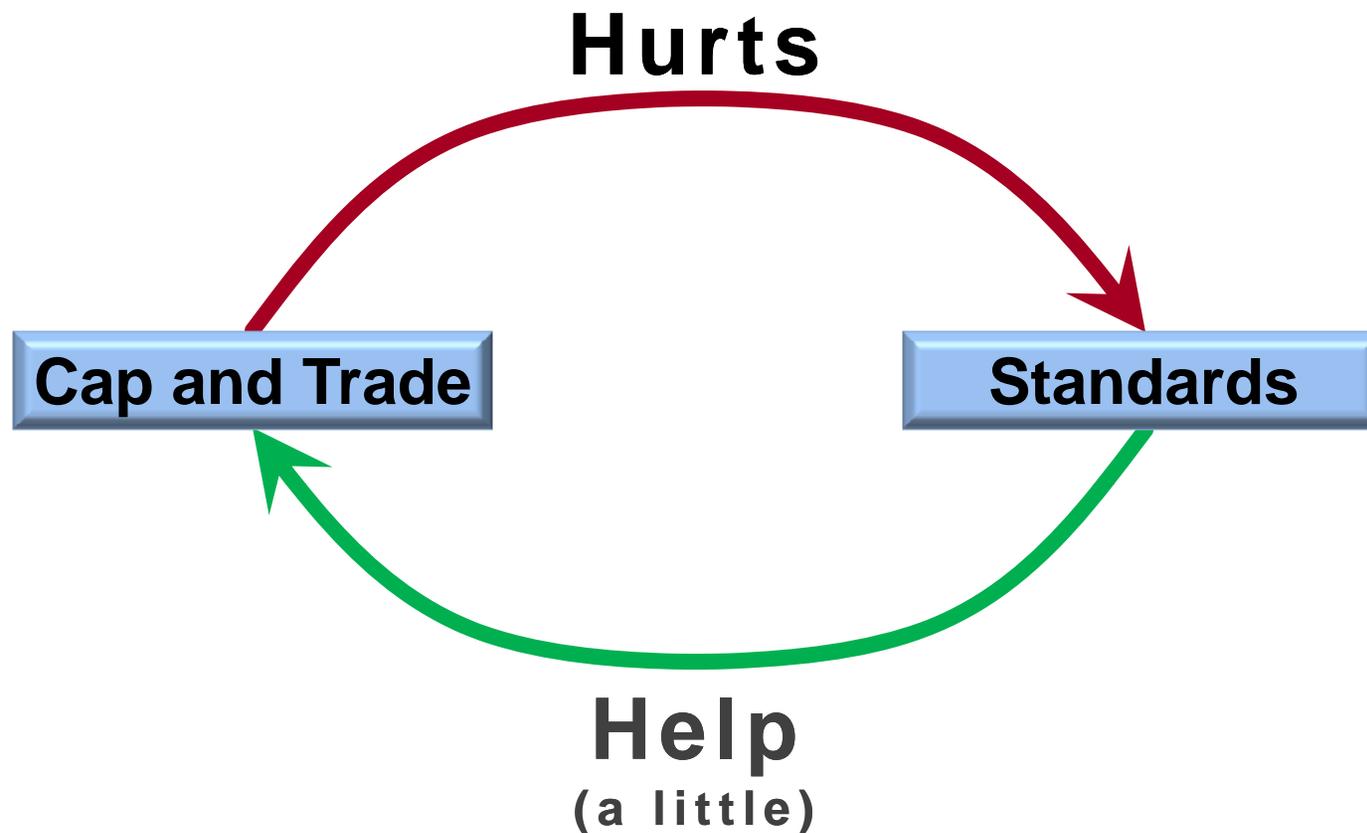
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- That depends on if (A) more wind turbines are a lot better than (B) more of whatever they will knock out.
- The decision that A is better than B is being made without looking at B.

# Assume All Standards Are Good

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- OK, Let's forget the problem with RES.
- The point is: **The problem is the cap.**
- My case is stronger if all standards are good under a cap (which CAFE, building and appliance are).
- Then everything the cap hurts is good.
  
- Let's assume they are *all good*.
- So there's no need to argue about standards.



**Proving “Help” does not disprove “Hurts.” Both are true.**

**“Standards are good” does not disprove “Caps are bad.”**

# Caps Will Cause Arguments

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- Many of those concerned with climate think it's more important to use less coal than to use less oil.
- so, **let's use less coal.**
- So, "build more wind to save coal." But the cap will get others to use **more** everything: coal and **oil**.
- The net effect is to use less coal but **more oil**.
- Those concerned with energy security will say, "Hey, those wind turbines are hurting energy security."
- And they will be absolutely right.

# No, Let's Use Less Oil

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- Those concerned with energy security think it's more important to use less oil than to use less coal.
- So they will say—tighten CAFE standards. But the cap will get others to use **more** everything: oil and **coal**.
- The net effect is to use less oil but **more coal**.
- Those concerned with climate will say, “Hey, wait a minute, you're making us use more coal.”
- And they will be absolutely right.

# No More Carbon Footprints

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- Buy a plug-in hybrid—save no carbon.
- Buy a Hummer—cause no emission increase.
- Now a little amateur psychology.
- When SUV owners start ridiculing hybrid owners for spending good money just to subsidize their SUVs, this will discourage the early adopters that make it easier to introduce new technologies.

# What's the Point?

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- Assume **all standards are good** even with a cap.

## **We have a choice:**

- Price carbon with a cap and open ourselves to these (perfectly true) criticisms:
  - This standard is expensive, and it saves no carbon.
  - That standard costs me a lot just so Texans can drive SUVs.
- Price carbon with a carbon tax.

Is There Life Without Caps?

# Some People Think So

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- “If it's going to be cap and trade, I'd rather nothing came out of Copenhagen. I'd rather take another year or two and get it right.”
- “It takes about 10 years to negotiate it and get all the countries on board, and then you make all sorts of compromises, so it turns out to be very ineffectual.”
- “If the United States accedes to the ineffectual ‘goals’ and ‘caps’ approach, a continuation of the Kyoto Protocol approach, it will practically guarantee disastrous climate change.”

# And One More

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- The previous slide's quotes are from James Hansen.
- The Kyoto principle makes no sense to the developing countries which ask:
  - “By what right are the developed countries entitled to pollute more than we are, simply because they polluted more in the past?”
    - Joseph Stiglitz, Nobel economist and specialist in international development.

# Top Economists (and others) Prefer\* a Tax

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- "A growing number of economists, particularly from the academic world (W. Nordhaus, P. Samuelson, J. Stiglitz, P. Krugman, P. Volcker, L. Summers, G. Mankiw, S. Stoft) have defended the use a carbon tax as an instrument which is both efficient and equitable."

—Center for Strategic Analysis, French Government

- William Nordhaus = perhaps the top energy economist for 30 years.
- Paul Samuelson = perhaps the top economist of 20<sup>th</sup> century.

\* Usually because a cap-and-trade risks serious market failures.

# But A T-A-X Is Impossible!?

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- Globally, cap and trade is impossible.
- Everyone from *Mother Jones* to *Rush Limbaugh* now knows a cap is a tax.
- So James Hansen, Dan and I favor an “**untax.**”

**Tax carbon and refund all the revenue  
On an equal-per-person basis.**

# With a Carbon Tax, Everything works

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- Plug-in hybrids save carbon.
- Appliance standards save carbon.
- So do building standards and CAFE standards.
- No need for an oil-vs.-coal fight.
- California's programs will actually work instead of just subsidizing the rest of the country to goof off.
- Renewable Electricity Standards will work instead of subsidizing Europe to goof off—remember we will join the European cap.

# Summary and Conclusion

# Two Kinds of Standards

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- Ones for saving consumers money.
  - Appliance standards
  - Building standards
  - CAFE standards
- Ones for saving carbon because it's worth it.
  - Renewable electricity standards
  - Extra-strict fuel-efficiency standards
  - Regional carbon caps

# If There's a Real Cap

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- Money-saving standards:
  - Still save money
  - No longer save carbon (lose one)
  - Now reduce permit prices (win one)
- Carbon-saving (cost-increasing) standards:
  - No longer save carbon (lose one)
  - Reduce permit costs (a deceptive win)
  - If regional, they subsidize those outside the region
- Individual carbon saving measures
  - Subsidize everyone else, but don't save carbon

# If There's a Safety Valve

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- Then we have part cap and part tax.
- Standards will likely save some carbon.
- You're hybrid will likely save some carbon.

*The End*

# What about Permit Banking?

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- Permits will be good for future years.
- Some will likely be saved for future use.
- Initially emissions will be less than the annual “cap.”
- This is because the annual “cap” is not a cap at all.
- It’s the annual allocation.
- With banking, there’s one total cap for the whole banking period.
- Total Emissions = Total Cap

# Case #1: MIT, Robert Stavins

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- Total cap from 2010 – 2050 (linear 0% – 80% reduction).
- Banking only within those years.
- Save a lot early, reduce emissions only by 50% in 2050.\*
- An extra first-year carbon action causes:
  - No total change in emissions
  - A first year reduction in emissions
  - A 39 year increase in emissions (probably front loaded).
- A 40-year action (a long-life wind-turbine) causes:
  - No total change in emissions
  - A minor and uncertain shift in timing of emissions.

\*2007 MIT study of Congressional cap-and-trade proposals.

# Case #2a: Permanent Banking

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- Permits are good forever.
- Total permit allocation is finite.
  - For example, after 2050 linear decline continues
  - For example, after 2050 exponential decline
- Same conclusions as for #1.

# Case #2b: US Trades with World

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- Again, permanent banking, and finite total permit allocation.
- Now US emissions are not limited to our finite total cap—external purchase allowed.
- If rest of world is capped:
  - US emission reduction is controlled by our total cap.
- If rest of world is under a carbon tax:
  - US standards will increase the US contribution to world carbon reduction.

# What about Offsets?

(permits obtained outside the cap)

	Emissions	Capped Savings		Uncapped	Emissions
	BAU	Wind	Other	Offsets	Total
Before Cap	6,000	0	0	0	6,000
Cap at 5,700	6,000	100	200	0	5,700
Cap w/ Offsets	6,000	75	150	75	5,700
Cap w/ REC	6,000	200	100	0	5,700
Cap w/ Both	6,000	170	85	45	5,700

A carbon-saving standard will reduce the price of permits.  
So fewer offsets will be purchased unless we are up against the offset limit in both cases.

But a standard will still not save any carbon unless the offsets are, to some extent, fraudulent.

# Which Is More Market Based?

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- Cap and Trade, or a Carbon Tax?
- “There is an alternative framework for approaching the reduction of emissions that employs the market mechanism more directly.”

—Joseph Stiglitz

- Either can be.
- So a tax is OK.