

# Allocating Emission Allowances

*Learning from EU & US Experiences*

Harvard Electricity Policy Group

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# The Big Picture:

## Allowances as *Licensed Property*

- “Private Rights in Public Resources”
- Created *by government* to capture many aspects of private ownership, especially excludability and use
- Not necessarily tradable!
- Revocable - a license, not full ownership

# Examples of *Licensed Property*

<i>Types of Licensed Property</i>					
<u><i>Kind of Right</i></u>	<u><i>Date Created</i></u>	<u><i>Resource Owned</i></u>	<u><i>Length of Term</i></u>	<u><i>Relative Liquidity</i></u>	<u><i>Relative Security</i></u>
Unpatented Mining claim	1866 - 1872	public land	perpetual	strong	very strong
Broadcast License	1927	Electromag. frequencies	eight years	moderate	moderate
Grazing Permit	1934	range forage	up to ten years	moderate	strong
Fishery ITQ (U.S.)	1976	fish stock	no fixed limit	strong	strong
SO <sub>2</sub> Allowance	1990	atmospheric sink capacity	no fixed limit	strong	moderate

# **“Grandfathering”**

*The politically “inevitable”  
allocation strategy...*

*That is rarely used!*

## Final Allocation vs. Grandfathering 1985 emissions by State

State	Final Allocation 2001-2009	Pro-Rated 1985 emissions	Difference	% Difference
MISSOURI	287,111	543,860	(256,749)	-47.2%
<b>OHIO</b>	<b>686,279</b>	<b>1,254,440</b>	<b>(568,161)</b>	<b>-45.3%</b>
TENNESSEE	266,257	453,724	(187,467)	-41.3%
<b>INDIANA</b>	<b>516,632</b>	<b>846,459</b>	<b>(329,827)</b>	<b>-39.0%</b>
<b>GEORGIA</b>	<b>415,525</b>	<b>564,753</b>	<b>(149,228)</b>	<b>-26.4%</b>
<b>ILLINOIS</b>	<b>439,179</b>	<b>591,141</b>	<b>(151,962)</b>	<b>-25.7%</b>
WEST VIRGINIA	425,154	538,262	(113,108)	-21.0%
WISCONSIN	174,435	214,829	(40,394)	-18.8%
PENNSYLVANIA	546,427	664,089	(117,662)	-17.7%
KENTUCKY	381,507	443,146	(61,639)	-13.9%
ALABAMA	320,386	302,359	18,027	6.0%
NEW JERSEY	64,162	57,581	6,581	11.4%
MASSACHUSETTS	162,996	138,907	24,089	17.3%
NEW YORK	274,995	233,677	41,318	17.7%
MARYLAND	146,673	122,013	24,660	20.2%
SOUTH CAROLINA	123,260	88,175	35,085	39.8%
MICHIGAN	373,444	231,288	142,156	61.5%
NORTH CAROLINA	319,668	194,227	125,441	64.6%
KANSAS	124,535	75,512	49,023	64.9%
<b>FLORIDA</b>	<b>515,600</b>	<b>300,544</b>	<b>215,056</b>	<b>71.6%</b>
VIRGINIA	130,327	74,236	56,091	75.6%
WYOMING	138,627	77,743	60,884	78.3%
NORTH DAKOTA	160,029	81,895	78,134	95.4%
MINNESOTA	123,516	62,871	60,645	96.5%
ARIZONA	129,149	63,574	65,575	103.1%
TEXAS	647,651	316,331	331,320	104.7%
COLORADO	100,040	46,451	53,589	115.4%
OKLAHOMA	128,194	51,438	76,756	149.2%
LOUISIANA	120,780	44,824	75,956	169.5%
NEBRASKA	74,539	27,107	47,432	175.0%
<b>MONTANA</b>	<b>29,549</b>	<b>9,138</b>	<b>20,411</b>	<b>223.4%</b>
NEVADA	75,411	22,959	52,452	228.5%
UTAH	69,272	13,176	56,096	425.8%
CALIFORNIA	92,242	2,503	89,739	3584.7%
<b>TOTALS</b>	<b>8,583,551</b>	<b>8,753,233</b>	<b>(169,682)</b>	

← 'Big Dirties'  
are the  
losers here!

← Clean and  
Growing  
States are  
winners!



# Norms as Allocation Constraint

- Political actors self-interested but constrained by *norms*
- **Norms** = widely shared standards of appropriate or moral behavior. “*The Cement of Society*” (Elster 1989)
  - ***Internal Constraint***: Allocations must be consistent with salient **personally held norms**
  - ***External Constraint***: Allocations must be consistent with widely held **norms of others**

# Prominent Property Norms

1. Possession (Hume)
2. Beneficial Use (Locke)
3. Greater Good (Cohen)
4. Egalitarianism (Proudhon)



Ask me!

# A Property Norms Framework

*Political  
Right /  
Collective  
Benefit*

Possessory  
(Hume)

Instrumental  
(Cohen)

*Pre-  
Political  
Right /  
Individ.  
Benefit*

Intrinsic  
(Locke)

Egalitarian  
(Proudhon)

*Secure Right /  
Non-redistributive*

*Insecure Right /  
Redistributive*

# Emissions Allocation: 3 Examples

- SO<sub>2</sub> Emissions and CAAA 1990
- UK Phase I NAP, 2005-2007
- Ad Hoc Group on Berlin Mandate (AGBM Process) 1995-1997

Ask me!

# CAAA 1990 Allocation Rules

- General Pattern: *Historical* energy use combined with variety of *benchmarked* rate factors
- Use of *permitted* rather than *actual* emission rates for clean facilities
- Allocated in *perpetuity*
- Some exceptions for rent seeking (Joskow & Schmalensee 1998)

# Axis of Primary Conflict - US CAAA

*Political  
Right /  
Collective  
Benefit*

Possessory  
(Hume)

Instrumental  
(Cohen)

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*Secure Right /  
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# EU Rules for Allocation Plans

1. NAPs may auction or sell no more than 5% of allowances for the first phase (2005-2007);
2. NAPs must provide access to allowances for new entrants; and,
3. NAPs may not “discriminate between companies or sectors” in violation of EU rules regarding fair competition.

# UK NAP Basic Allocation Rules

1. General Pattern: Sector allocations based on gov't projections of *need*
2. Within sector allocations based on prorated shares of *current energy use* (1998-2003 average, drop lowest year)
3. Reductions beyond this calculation to meet Kyoto target focused on electricity producers

# Axis of Primary Conflict - UK NAP

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Political  
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# US and UK Allocation Rules, 1990 and 2004

<i>Allocation Issue</i>	<i>US 1990 Acid Rain Program</i>	<i>UK 2005-2007 NAP</i>
<i>Basic Rule</i>	Historical Energy Use + Benchmarks	Economic Need + Historical Emissions
<i>Treatment of New Entrants?</i>	Auction only	Free Allocation based on Benchmarks
<i>Closed Installations?</i>	Continued Allocation	No Allocation
<i>Credit for Early Action?</i>	Substantial via Benchmarks	Minimal via choice of annual baseline only

# What Drove EU Allocation?

## *Allocation based on possession*

- Practical: Shorter time frame + limited info
- Normative: “Squatters’ Rights”

## *Allocation based on need*

- Practical: Int’l competition
- Normative: CO<sub>2</sub> emissions seen as “inevitable”

# EU ETS Summary

- Less benchmarking
  - Distinctive nature of CO<sub>2</sub> emissions?
  - Or short time frame?
- Economic need as allocation principle
- Shortage to energy sector
  - Int'l competitiveness concerns
  - Reductions easiest in that sector?
- Expiring allowances + over-allocation =  
Price volatility and collapse at end Phase 1

# Larger Implications

- Beyond “**Piñata**” model of allocation:  
Relevance of norm-based framework
- Few Lockean arguments in climate case
- Relative strength of public ownership /  
egalitarian arguments in climate context
- Instrumental allocations on rise?

# Doing it better?

- Get the cap right!
  - Create scarcity **within** trading system
  - Risk of CDM, other credits flooding market with “cheap paper”
- Periodic reallocation?
  - Probably good idea absent an auction
  - Need to balance fairness against transaction costs, price volatility, perverse incentives

# Doing it better?

- Auctions and benchmarking lower perverse incentives
  - Modeling future needs - choosing winners
  - Rewarding inefficiency
- Auctions and benchmarking viability?
  - Big in US proposals for CO2 cap and trade
  - UK auctioning 7% of phase 2 allowances
  - Possession norms weaker than beneficial use
- Who does deserve allowances, anyway?

# For More Info...

Leigh Raymond. 2003. *Private Rights in Public Resources: Equity and Property Allocation in Market-Based Environmental Policy*. Resources For the Future (RFF) Press.

A. Denny Ellerman et al. 2007. *Allocation in the European Emissions Trading Scheme: Rights, Rents and Fairness*. Cambridge Univ. Press.

