A shorter economics of terrestrial carbon sequestration

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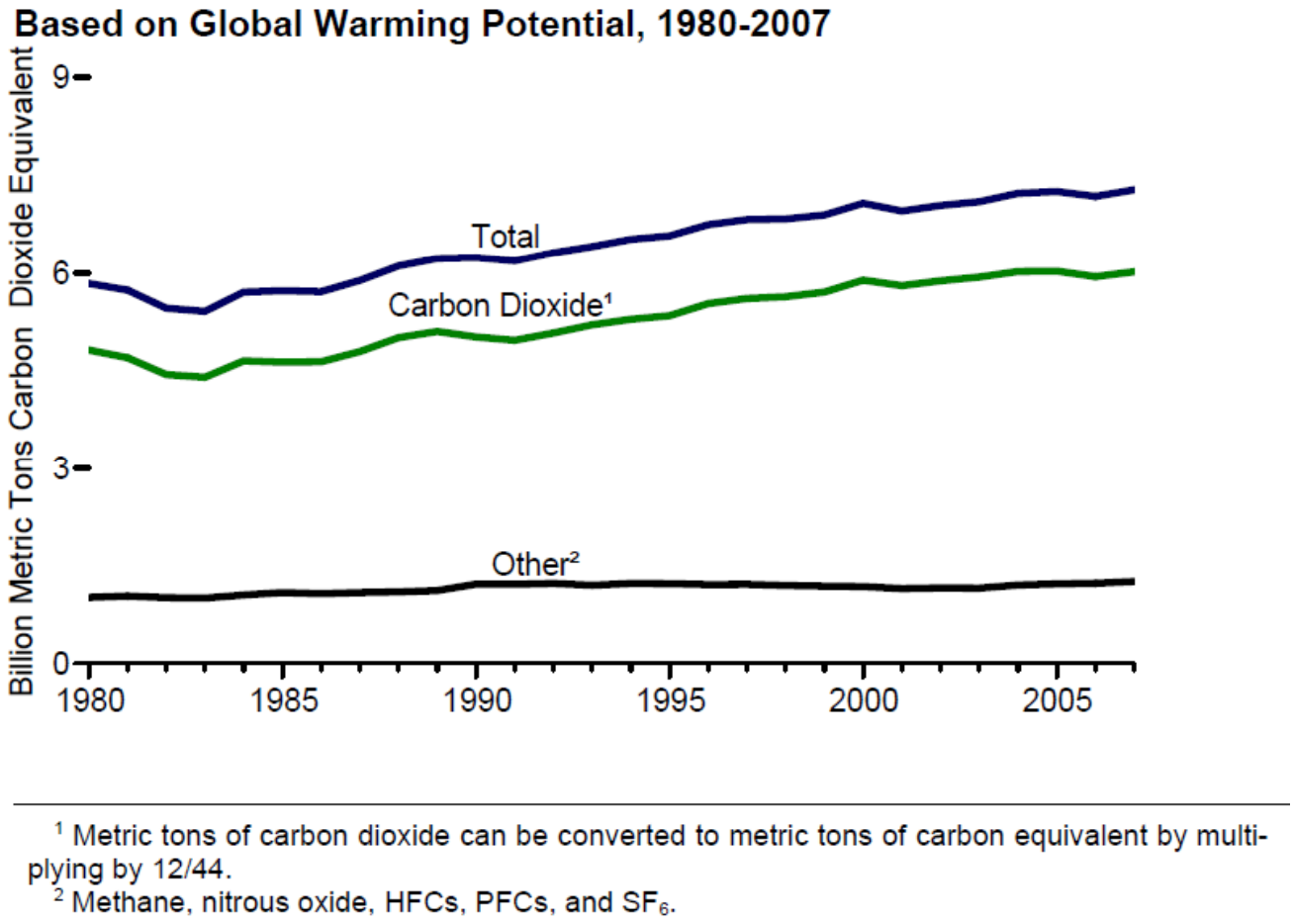
It’s all about…

- Supply
- Demand
- Markets
- Policy

What is it we are trying to reduce?

	amount	Carbon	Carbon Dioxide	CO2 Equivalent
Carbon Dioxide	1	0.27	1	1
Nitrous Oxide	1			310
Methane	1			21
other GHG	1			
SCORE		0.27	1	332

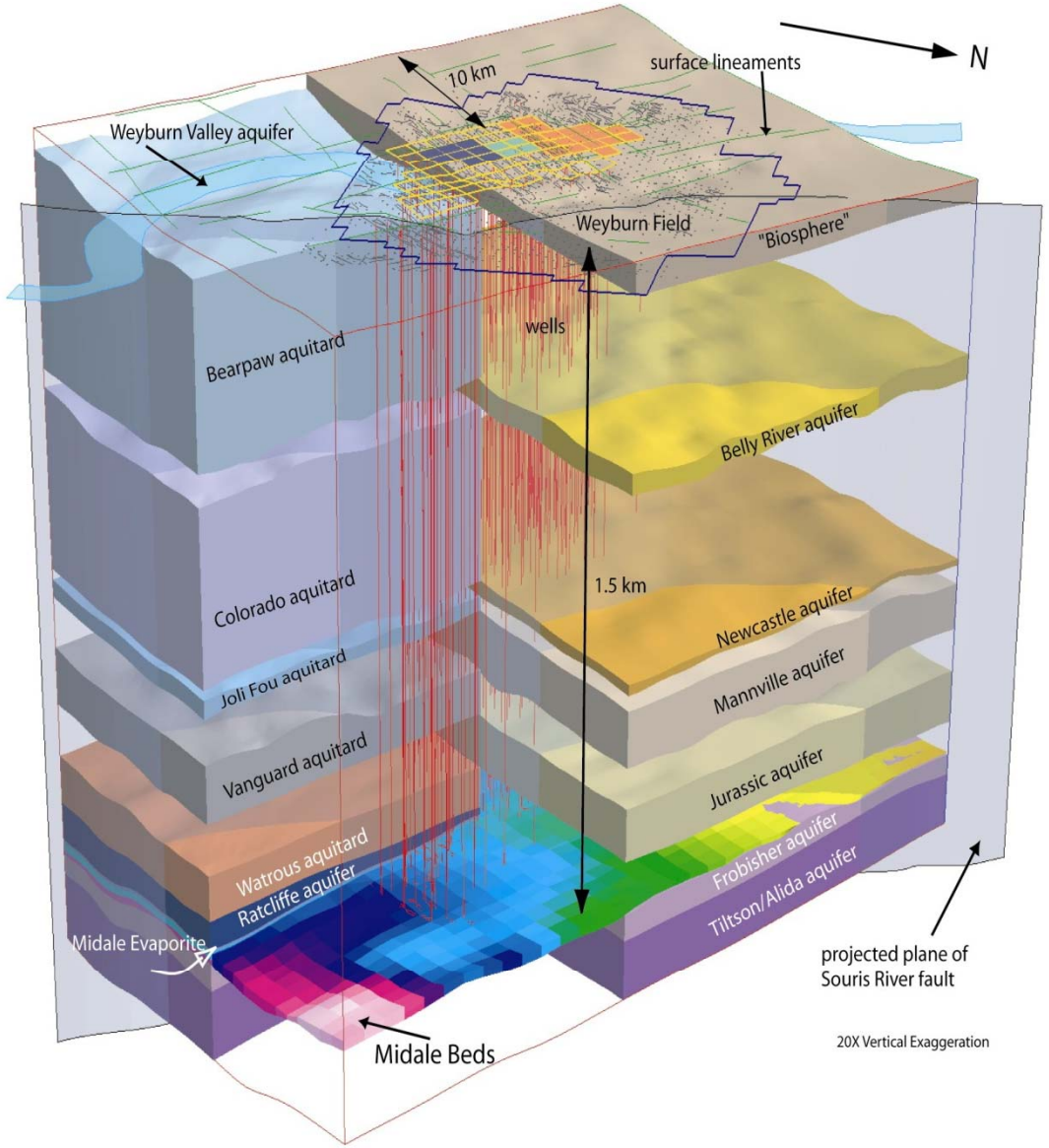
How much are we producing?



[1] Metric tons of carbon dioxide can be converted to metric tons of carbon equivalent by multiplying by 12/44.
[2] Methane, nitrous oxide, HFCs, PFCs, and SF_6.

Source: US EIA 2008

Why not just stick it into the ground?



Would changing land use be cheaper?

Grassland /CRP

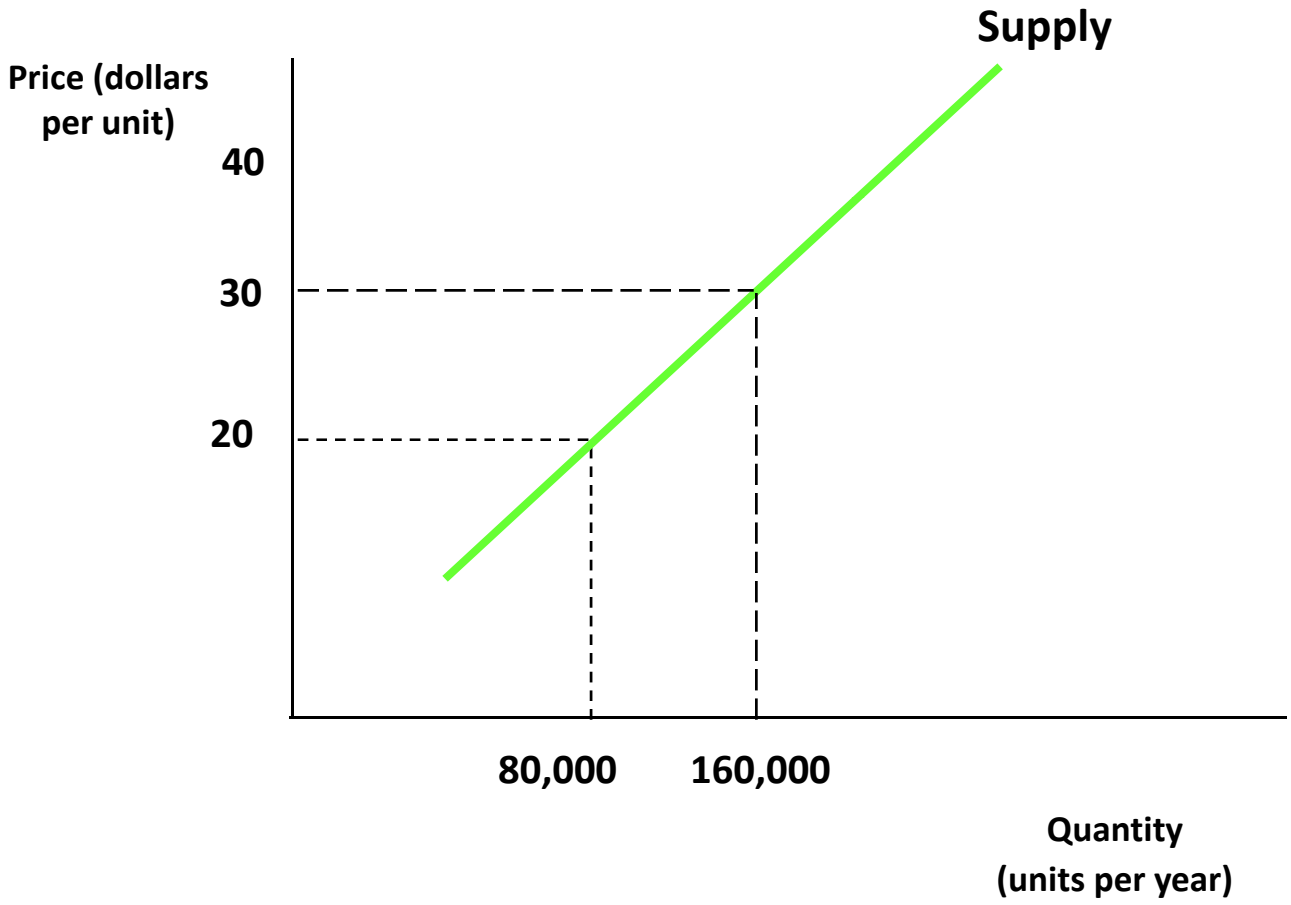
Wetland Restoration

Afforestation: Pine

Cover crop Adoption

Agroforestry: Poplar

The simple logic of supply

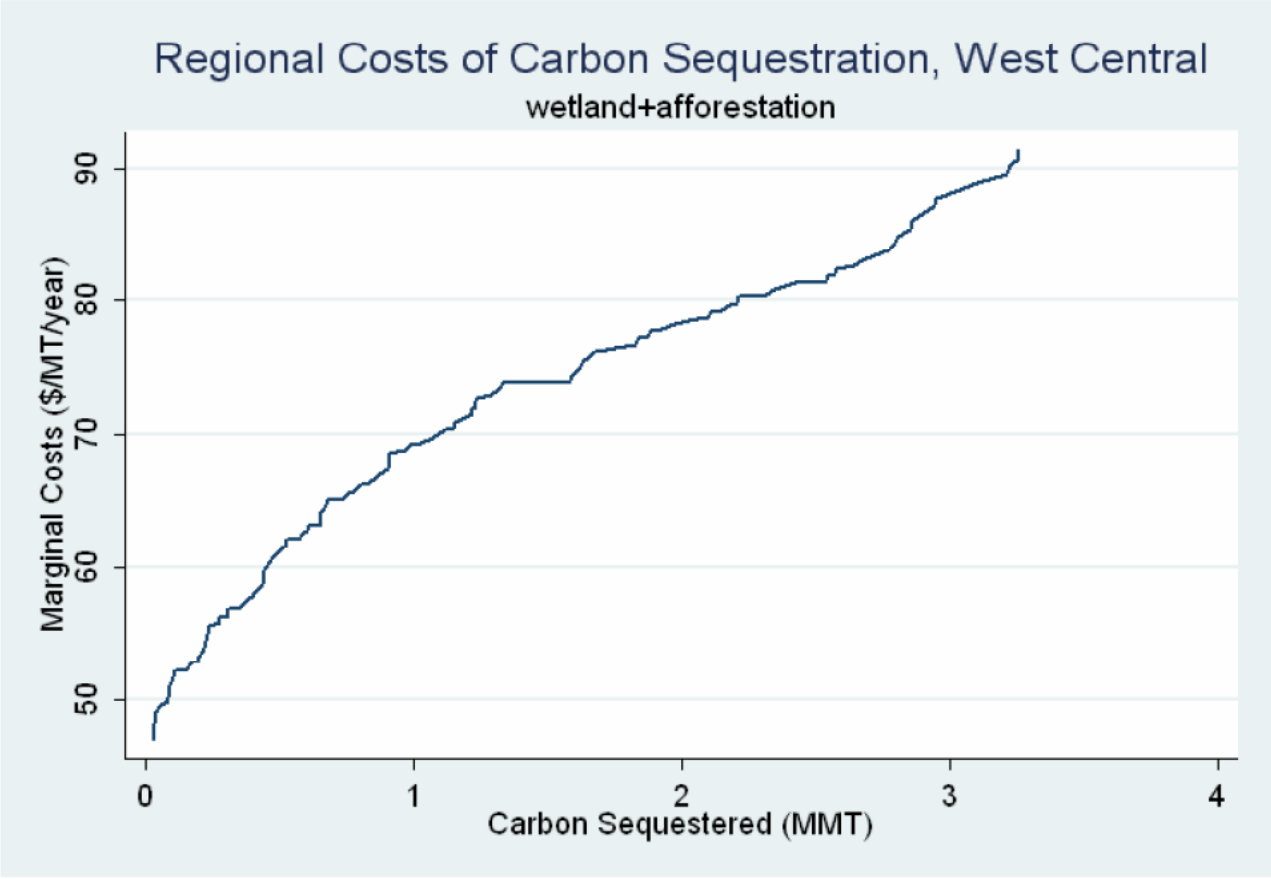


Maximum profit, not just profit

	Yield per acre	Price per unit	Cost per acre	Profit per acre	choice
peonies	120	3	250	110	
kale	2	**50**	40	60	**peonies**
kale	2	**80**	40	120	**kale**

Source:

How much might we have to pay for terrestrial sequestration?



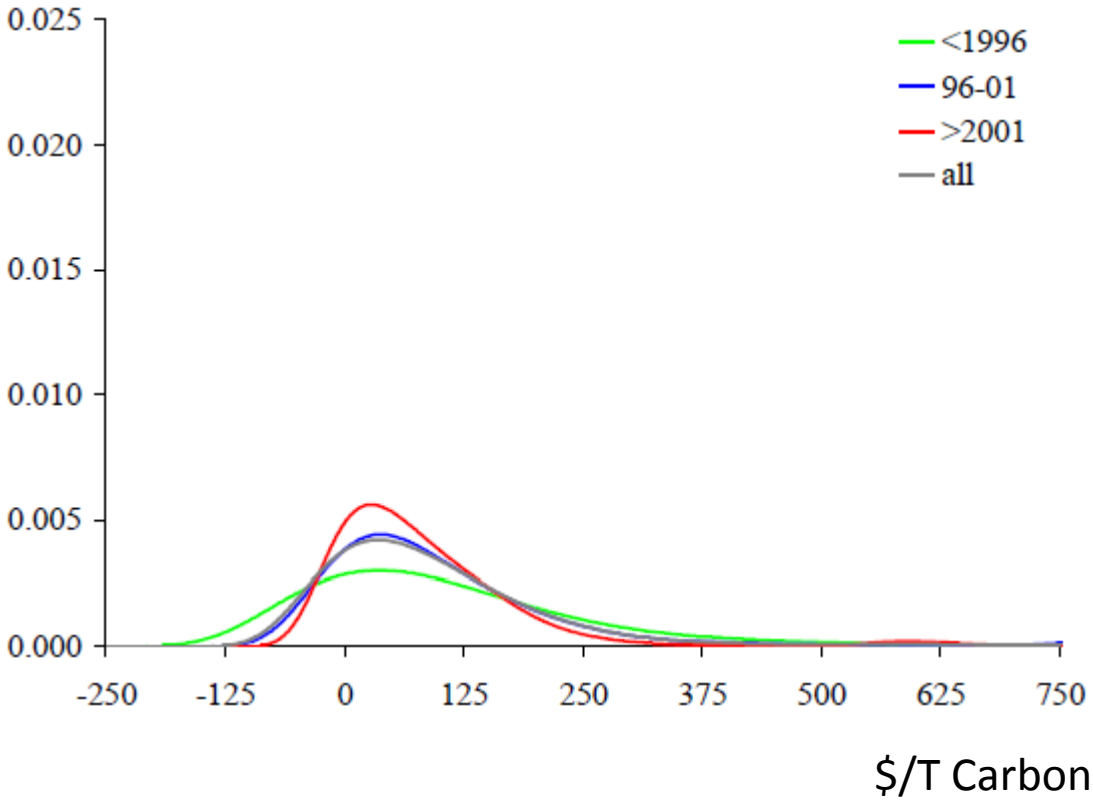
Source: Liu and Polasky, 2006

Demand

- Avoided damages
- Alternative strategy costs

What is the value of avoided Carbon damage through sequestration?

Proportion of all studies

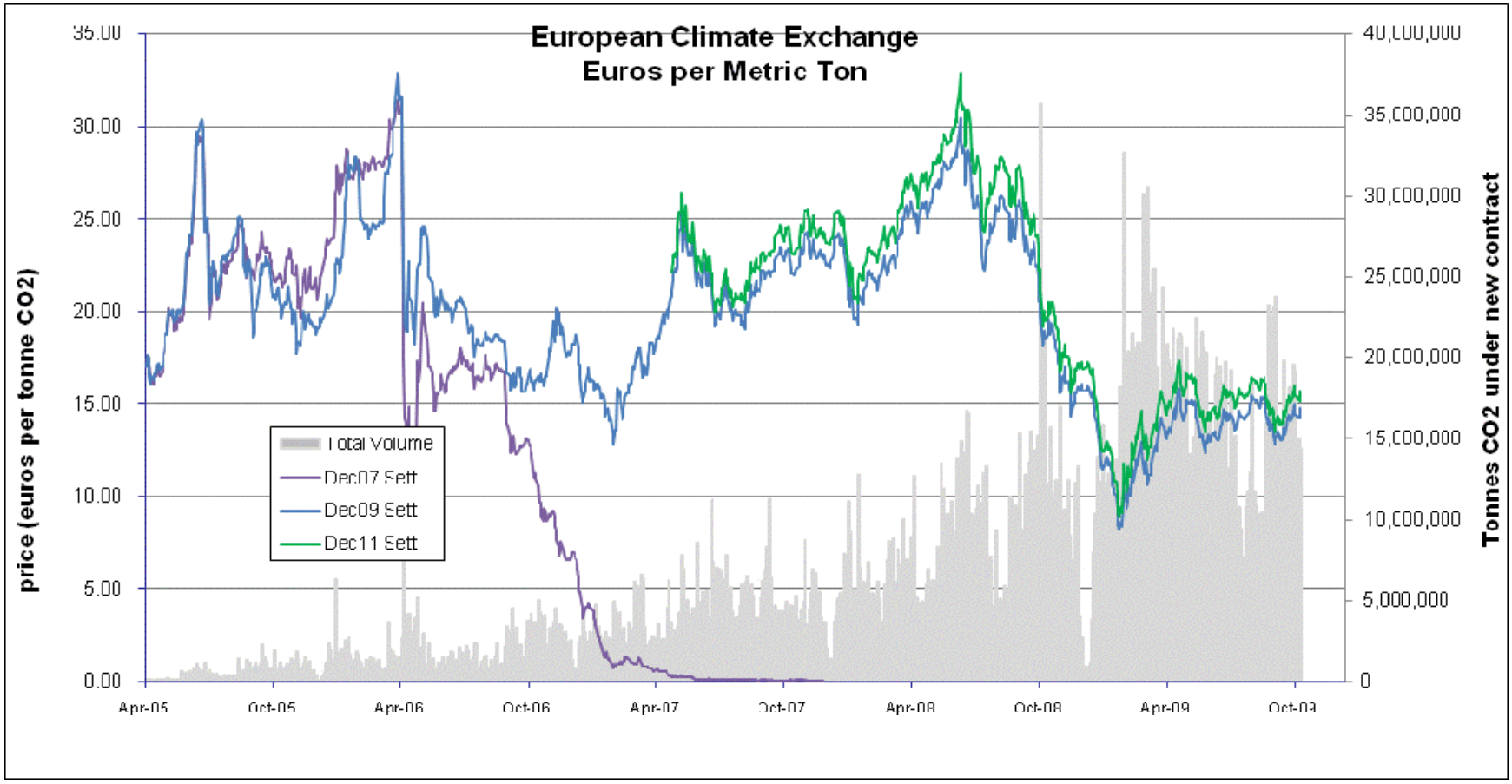


Source: Tol, 2007

The logic of Markets: How do we make GHG emissions into a "commodity"

- Piece of paper
- Score requires compromise
- Initial allocation, then market takes over
- Attach to:
  - Product
  - Fuel
  - Activity
- Price is up to market

Does this market provide evidence of "the real cost of Carbon?"



Source: ECX 2009

Carbon markets require Policies

- Set demand
- Codify supply
- Sanction market activity

Policy choices

- Which measure of “GHG”?
- Do you credit protection, or only changes?
- Who gets to set the “score”?
- Do you pay for reduction AND charge for increase? (at plant; in field)
- How often do you revisit your numbers?