Looking Ahead at Climate Policy: The Role of Forestry and Agriculture

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Role of Forestry and Agriculture in Climate Policy

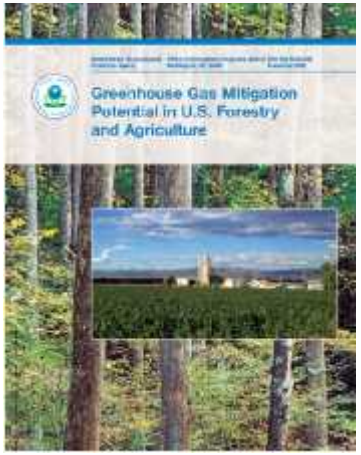
- Forestry and agriculture recognized for potential low-cost GHG mitigation, generally through the form of an offset or biofuel feedstock
- Some policies have proposed to limit offsets
  - MMV, leakage, and additionality uncertainty
  - Concern over flooding the market
- There have been policy suggestions to address this:
  - Discount or exclude practices
  - Cap number of offsets
  - Provide allowance set-asides
- Also, recent concerns regarding leakage from domestic biofuels policy causing land use change abroad
  - Questions on what, where and how much land will be converted and GHGs released as a result
- Ideally, we want to get more input from modeling community on how to address these issues and reduce uncertainties

General Thoughts on Offsets

- Experience with cap and trade for SO_2 and NO_x demonstrates the need to ensure integrity in the cap to guarantee environmental objectives
- Offsets should be seen in this context, while recognizing the role they can play in cost containment and leveraging reductions in sectors outside the cap
- EPA has developed protocols for forestry and agriculture in context of Climate Leaders program:
    - Have protocols for afforestation/reforestation and manure management
    - Developing protocol for forest management, including harvested wood products
- Even with significant expertise, it will take time and resources to effectively implement a large offsets program

Models are a Core for Applying Program Knowledge to Economic Analysis

- EPA reports on mitigation opportunities and costs for non-CO_2 gases and agriculture and forestry
  - Engineering cost curves
  - U.S. and Globally
  - Gas by gas, sector by sector
- EPA data integrated into most climate economic models
- Substantial improvement in analytical ability
  - How many tons are available?
  - At what cost?
  - In what sectors and regions?



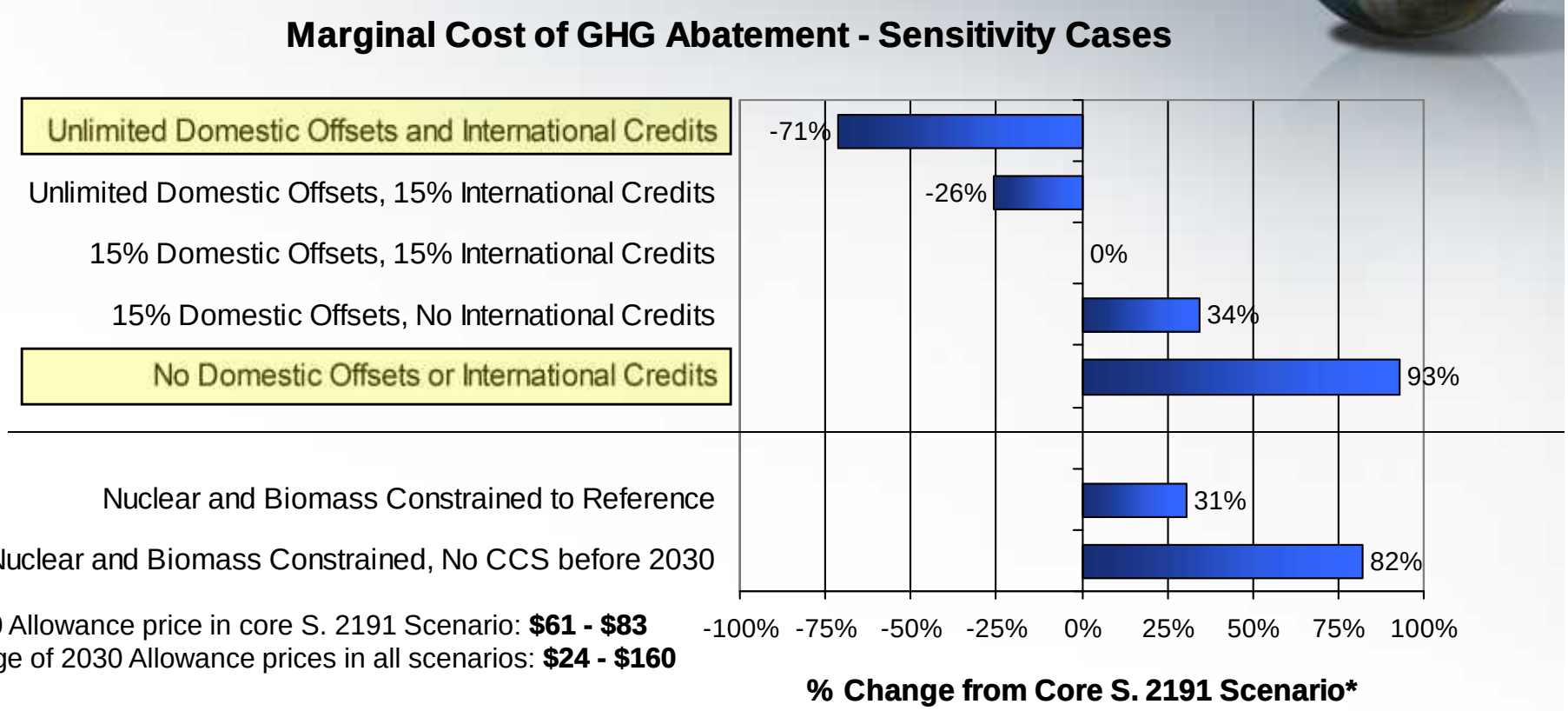
Offset Provisions of Bills Analyzed by EPA

- Lieberman-Warner, "Climate Security Act of 2008" (S. 2191)
  - Domestic offsets may be used to meet 15% of compliance obligation
  - International credits may be used to meet 15% of compliance obligation
  - Set-asides for agriculture and forestry sequestration as well as landfill and coal mine CH_4

- Bingaman-Specter, "Low Carbon Economy Act" (S. 1766)
  - Unlimited specified domestic offsets can be used to meet the emission cap level
  - Specified offset project categories include CH4 from landfills, coal mines, and animal waste, and SF6 from electric power systems
    - For other offset project categories, the President may distribute less than 1 credit for each ton of greenhouse gas emissions reduced or sequestered.
    - Our analysis assumes that only offsets from specified project categories are allowed.
  - The President can implement an international offset program, allowing not more than 10% of compliance to be met through this program
  - Set-asides for agriculture sequestration

- Lieberman-McCain, "Climate Stewardship and Innovation Act"(S. 280)
  - Domestic offsets & international credits can be used to meet up to 30% of compliance obligation

Offset Provisions of S. 2191 Significantly Influence Costs

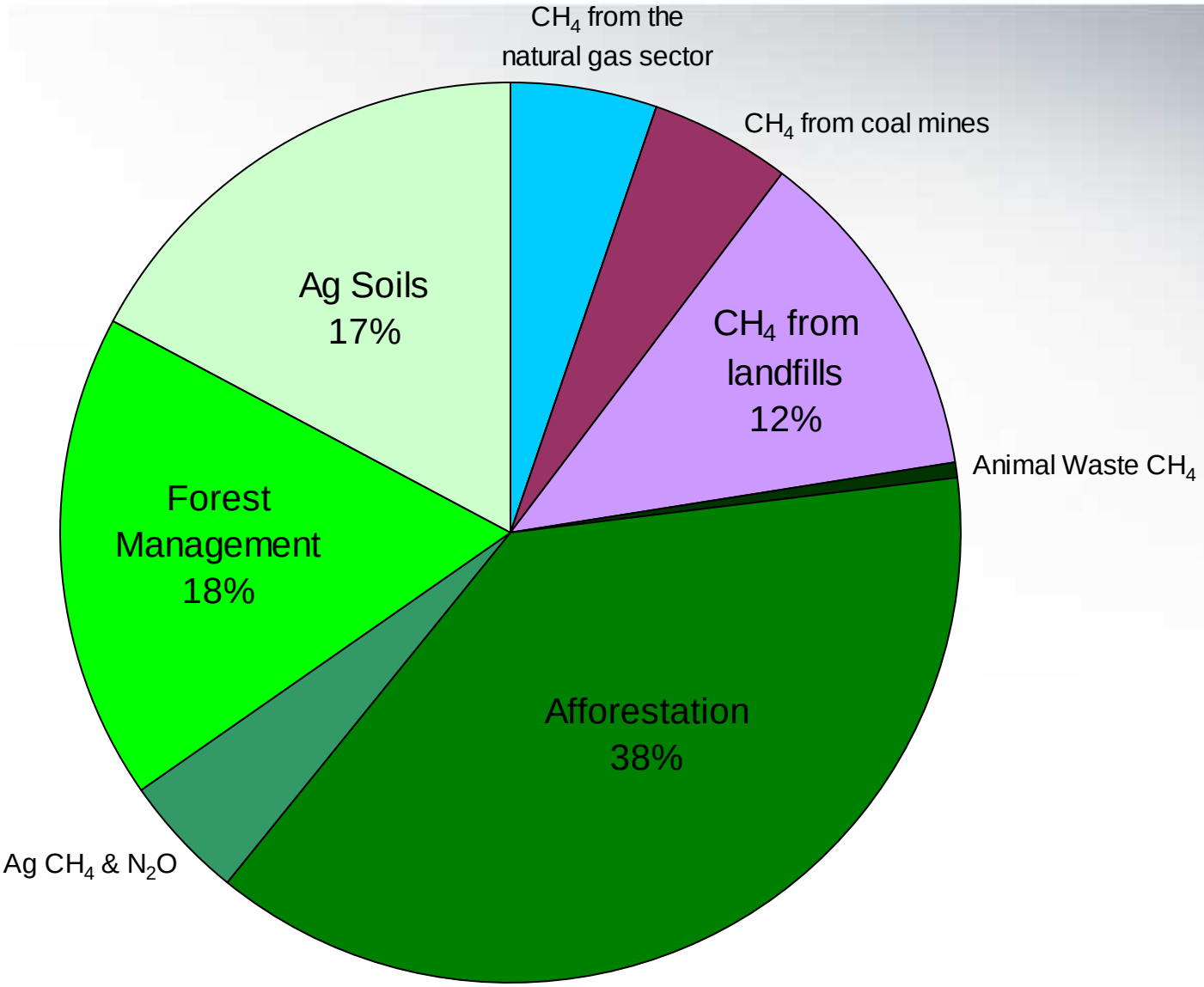


2030 Allowance price in core S. 2191 Scenario: **$61 - $83**
Range of 2030 Allowance prices in all scenarios: **$24 - $160**

Recent EPA analysis of Lieberman-Warner Climate Security Act (S.2191) has shown that offsets can significantly reduce cost of economy-wide climate policy

Source: EPA's analysis of the Lieberman-Warner Climate Security Act of 2008 (S. 2191), http://www.epa.gov/climatechange/economics/economicanalyses.html

S. 2191 – Sources of Domestic Offsets (Cumulative 2012-2050)



- The total quantity of abatement from domestic offsets is limited to 15% of allowance submissions in each year.
- The quantity of abatement from international credits is similarly limited to 15% of allowance submissions in each year.

Quantity of Offsets Under S. 2191

Offsets, International Cedits, and Allowance Set-Aside

	MtCO2e	Payments (Billion '05 $)
D		*30*
		12
		$2
		$1
		15
A		
		16
		$3
		19
International Credits		
International Credits Total	**596**	**$12**

Challenge: How do we effectively implement this?

- Have some idea about how to do this domestically
- Larger uncertainty on international side
- Key elements include:
  - Efficient project certification and processing
  - Assessment of environmental integrity
  - International cooperation

- U.S. forest and ag mitigation projects will generate nearly **$30 billion** of payments in 2030
- Payments will go to **10,000's** of ag / forestry projects on **10,000,000's** of acres in U.S. alone
- Likely at least as many projects abroad

Other Challenges

- International offsets
  - Modeling shows that there are billions of tons of offsets available annually from forestry and agriculture sector
  - But, similar concerns over MMV, additionality, leakage, etc.
  - Who has role in approving and monitoring credits?
- Biofuels and indirect land use change
  - Significant modeling effort needed to properly assess the global impacts of U.S. biofuels policy
  - Lack of global datasets and comprehensive model framework has made analysis more difficult
- Models for regulatory impact assessments (RIAs) require rigorous analysis and peer review
- Policymakers needs also encompass regulatory efforts such as the response to Supreme Court on vehicles, RFS, and potential Clean Air Act regulations that might generate demand for biomass energy

Looking Forward

- Providing technical support to new EPA leadership
- Providing policy-neutral technical assistance to Congress upon request
- Engaging with stakeholders to understand views on offsets
- Continue with international discussions
- Continuing to work closely giving technical guidance to external groups (e.g., CCAR)
- Explore possible pathways to effectively implement offsets program
- Continuing to work with Climate Leaders partners

Final Thoughts

- Forest and agriculture modeling community made considerable headway since 1st Forum in 2001
- But there is still room for improvement
  - International land use modeling
  - Accounting for transaction costs
  - Incorporating climate impacts and adaptation into the baseline
- From a policy standpoint, need to include land use sector
  - Offsets, set-asides, biofuels
- Efficient program implementation is key to achieving the cost-effective benefits of offsets

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