

# EPA Offsets Analysis

Bill Irving  
Climate Change Division  
U.S. Environmental Protection Agency

March 6, 2009



# EPA offsets experience and activities



- Program experience
- Economic analysis
- Offsets policy, design and implementation

# On-the-ground Experience: Voluntary programs



- Non-CO<sub>2</sub> programs, domestic and international
  - AgSTAR, GasSTAR, Coal Mine Methane Outreach Program, Landfill Methane Outreach Program, M2M
  - source-specific experts who identify candidate sites, conduct feasibility studies, and bring parties together
- Energy efficiency
  - Energy STAR

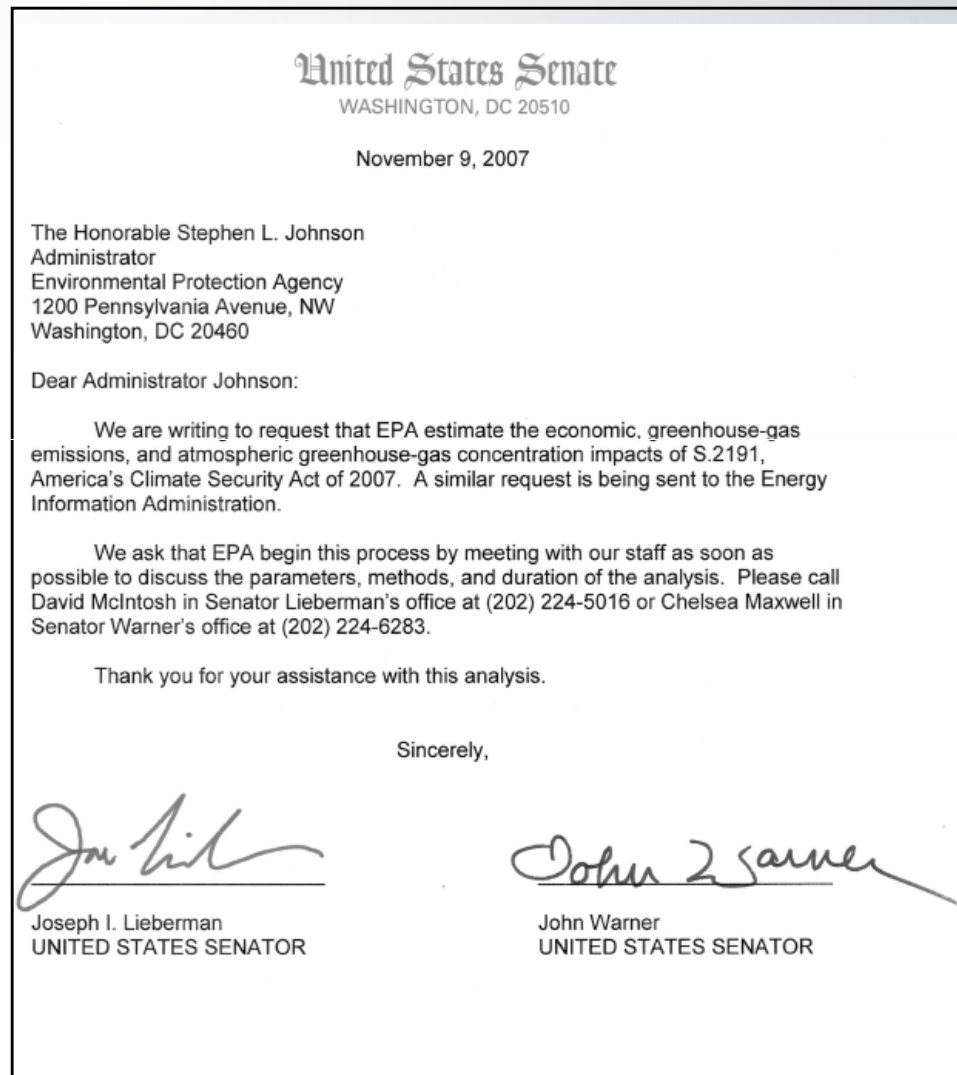
# EPA Policy/Technical Experience Relevant to Offsets



- Implementing cap and trade programs for SO<sub>2</sub>/NO<sub>x</sub>
- National inventory work
  - US inventory
  - UNFCCC reporting, reviews
  - IPCC methodological development
- Mandatory reporting of GHGs
- Capacity building in developing countries
  - particularly for agriculture, land-use change and forestry



# Request for EPA Analysis



- In November 2007, Senators Lieberman and Warner requested that EPA estimate the economic impacts of the S. 2191, the 'Climate Security Act of 2007'
- The analysis was conducted by EPA's Office of Atmospheric Programs  
Contact: Reid Harvey.  
Email: [harvey.reid@epa.gov](mailto:harvey.reid@epa.gov)
- The analysis of Lieberman-Warner has since been updated and will be released soon
- Other climate legislation analyzed by EPA
  - Lieberman-McCain
  - Bingaman-Specter

# S.2191 Domestic Offsets & International Credits: Highlights

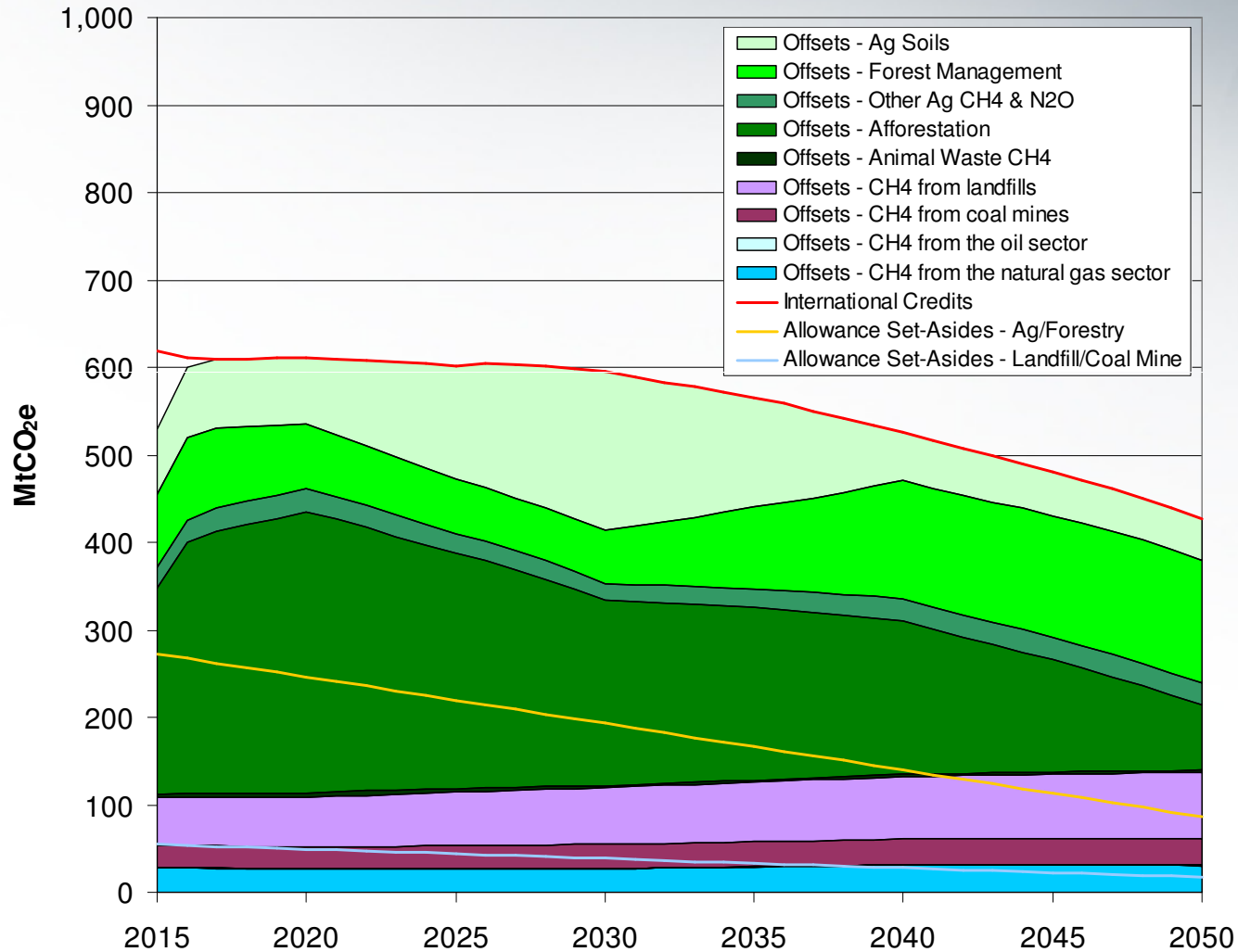


- EPA developed mitigation cost schedules for 24 offset mitigation categories
- EPA disaggregated broader categories to specific mitigation options
  - Based on EPA's emissions inventory & mitigation program expertise
  - Options evaluated both domestically, internationally (by region group), and over time
  - Captured responses to rising carbon prices
  - Capped sector non-CO<sub>2</sub> and bio-energy emissions reductions are also modeled.
  - For the individual mitigation options that were determined to be eligible, no further discounting was assumed.

# Results: Scenario 2 - S. 2191



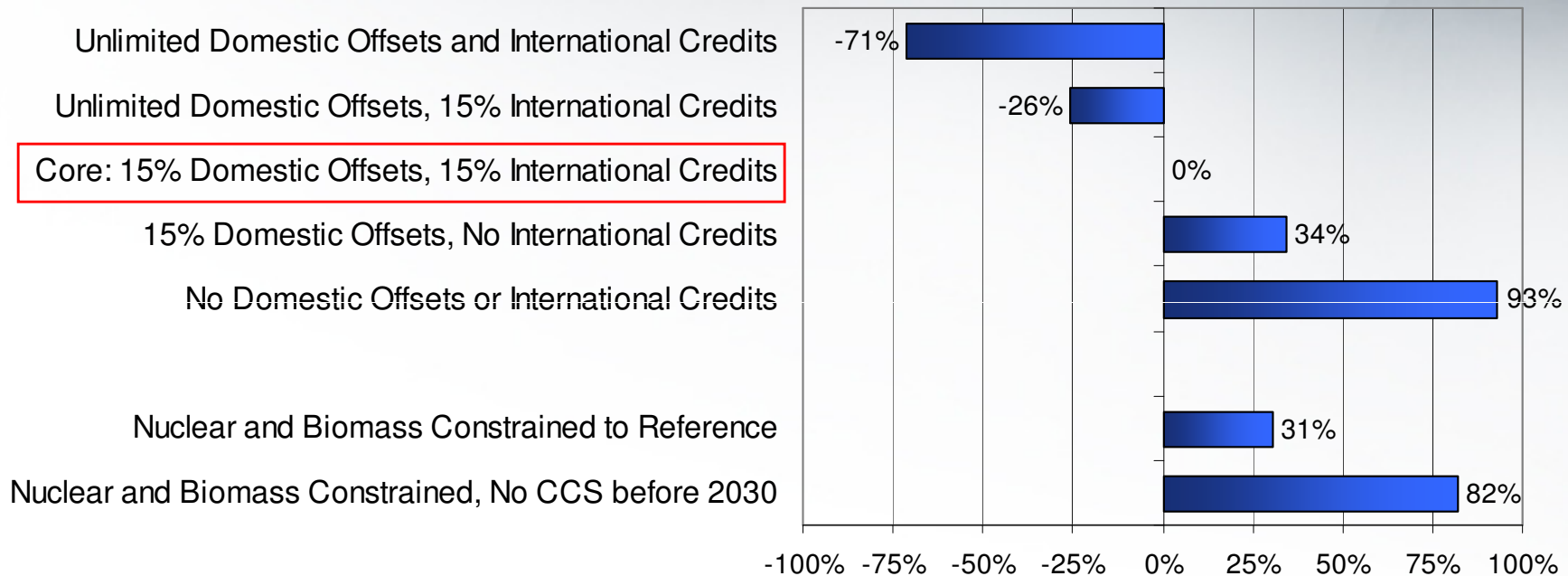
## Allowance Set-Aside, Offset, and International Credit Abatement (IGEM)



# Offset Provisions of S. 2191 (L-W) Significantly Influence Costs



## Marginal Cost of GHG Abatement in 2030 - Sensitivity Cases



- 2030 Allowance price in core S. 2191 Scenario: \$61 - \$83
- Range of 2030 Allowance prices in all scenarios: \$24 - \$160
- Scenario 2 from EPA's analysis of S. 2191: S. 2191 as written (15% of compliance obligation from domestic offsets, 15% from international credits), assumes 150% increase in nuclear power between now and 2050, assumes CCS available after 2015.
- Provisions for Nitrous Oxide/Methane set aside allowance dropped in the Substitute Amendment to S2191; the 15% limit on offsets is now applied to the annual overall quantity of emissions allowances rather than individual compliance obligations.

# General Thoughts on Offsets



- Experience with cap and trade for SO<sub>2</sub> and NO<sub>x</sub> 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 advocated a top-down performance standard approach for the CDM during early negotiations
- Redirection of efforts after Kyoto
  - Development of offsets in context of Climate Leaders program
  - Providing policy-neutral technical input to external offsets programs (e.g., CCAR, WRI etc.)
  - Studying implementation of CDM and other programs

# Offsets in USEPA Climate Leaders Program



- ***Climate Leaders*** is an EPA industry/government partnership that works with companies to develop comprehensive climate change strategies
  - Partner companies (numbering more than 200) commit to setting aggressive greenhouse gas reduction goals and annually reporting progress to EPA
- An important objective of the ***Climate Leaders*** program is to focus corporate attention on achieving cost-effective reductions within the boundary of the organization
- Partners may also use reductions and/or removals that occur outside of their corporate boundary (i.e., external reductions or offsets) to help to meet their goals
- EPA's Climate Change Division has developed offset guidance based on a top-down performance standard approach to address additionality and to select and set the baseline

# Performance Standard Approach



- Top-down, standardized methodology
  - Comprised of performance threshold (additionality determination) and baseline, and monitoring options
- Program defines additionality for each project type based on an analysis of a relevant sector in a specific spatial area
  - Assessment of performance of similar, recently undertaken or planned practices, activities or facilities in a relevant geographic area to determine BAU/performance threshold
  - Emissions rate, practice standard, technology standard
  - Proxy for barriers, financial decisions and “intent” tests

# Advantages of Performance Standard Approach



- Project developers are aware of the accounting “rules” in advance
  - Methodologies prepared for specific set of project types
  - Equations needed for estimating and calculating emissions and reductions/removals are provided
- Reduces the complexity, cost and subjectivity of constructing individual project-specific arguments and subsequent review
- In general, consistent with WRI/WBCSD GHG Project Protocol, CCAR, RGGI
- Can be used for a variety of project types (sectors and geographic areas)
- Minimizes risk of accepting a project that is not additional or rejecting a project that is additional

# Prioritizing Methodology Development



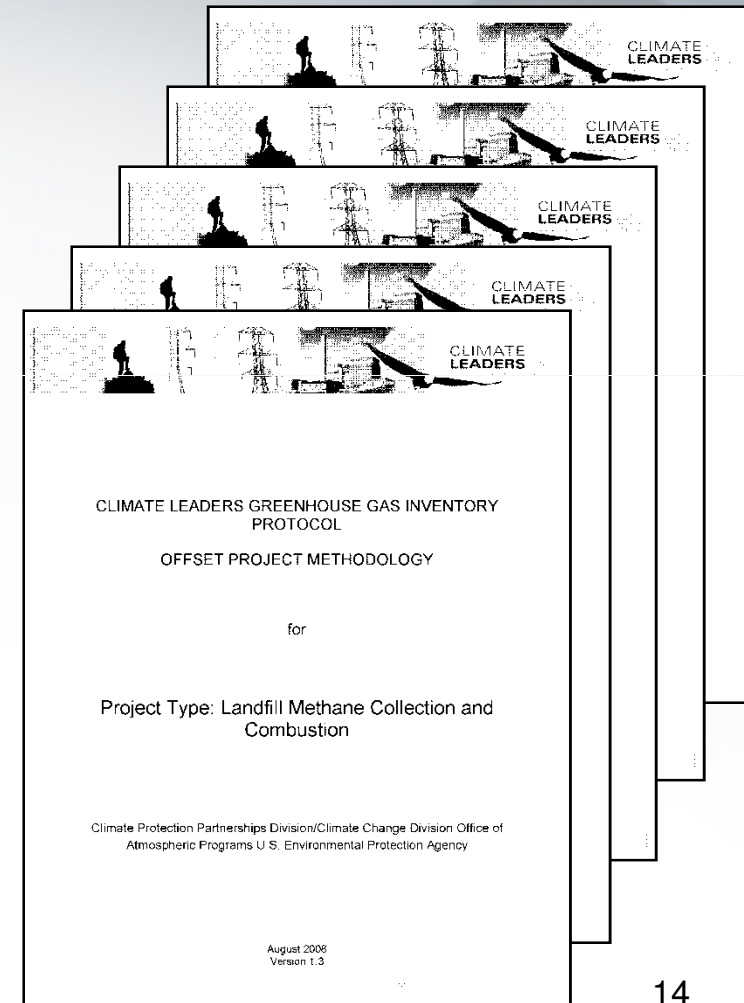
Several factors considered when selecting project types for protocol development

- Monitoring methods
  - Methods at national inventory level
  - Project specific monitoring
- Experience with the project type
  - Monitor EPA voluntary programs and other programs to gain knowledge on potential project types as offsets
- Data set availability
  - Data needed to set performance threshold
- Other issues specific to project type
  - Practical, effective means to address permanence, leakage, environmental/social effects are needed for particular project types



# Offsets Methodologies

- Accounting methodologies:
  - Commercial boiler
  - Industrial boiler
  - Landfill Methane
  - Anaerobic digesters
  - Transportation – Bus fleet
  - Afforestation/Reforestation
  - End-use of methane
  - Forest management (in development)
  - Coal-mine methane (in development)



# Climate Leaders Project Submission/Review Process



- Project types with EPA protocols
  - Submission of Project Checklist and project data for project validation by EPA
- Project types without EPA protocols
  - Project Design Document template allows Partners to propose a project:
    1. Using a new performance standard based methodology for other project types OR
    2. Using an alternate domestic dataset or data for a project outside the U.S.
- Annual emissions reductions achieved by the project reported on Partner's Goal-Tracking documentation

# Looking Forward



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



# Contact Information

- Bill Irving ([irving.bill@epa.gov](mailto:irving.bill@epa.gov))
- Melissa Weitz ([weitz.melissa@epa.gov](mailto:weitz.melissa@epa.gov))
- Kimberly Todd ([klunich.kimberly@epa.gov](mailto:klunich.kimberly@epa.gov))

## Resources

- *Climate Leaders* Offset Methodologies and Guidance ([www.epa.gov/stateply/resources/optional-module.html](http://www.epa.gov/stateply/resources/optional-module.html))
- EPA economic analyses (Lieberman-Warner, etc.) ([www.epa.gov/climatechange/economics/economicanalyses.html](http://www.epa.gov/climatechange/economics/economicanalyses.html))