The Case for a National Low Carbon Fuel Standard

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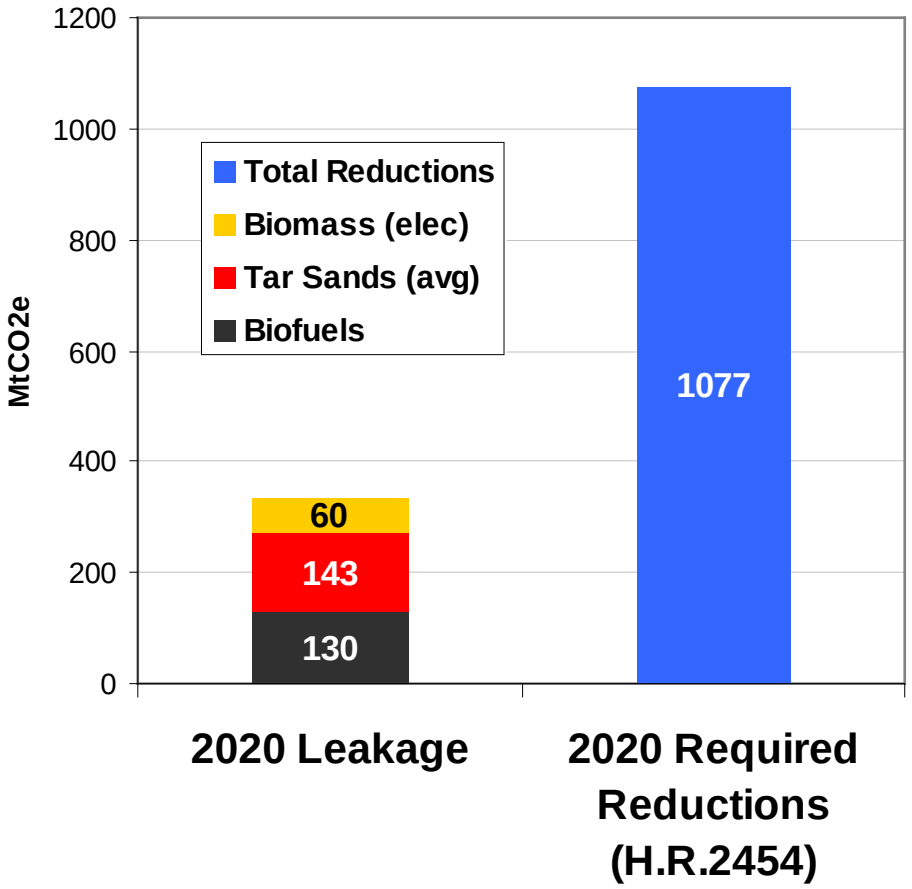
Role of LCFS in a National Cap & Trade System

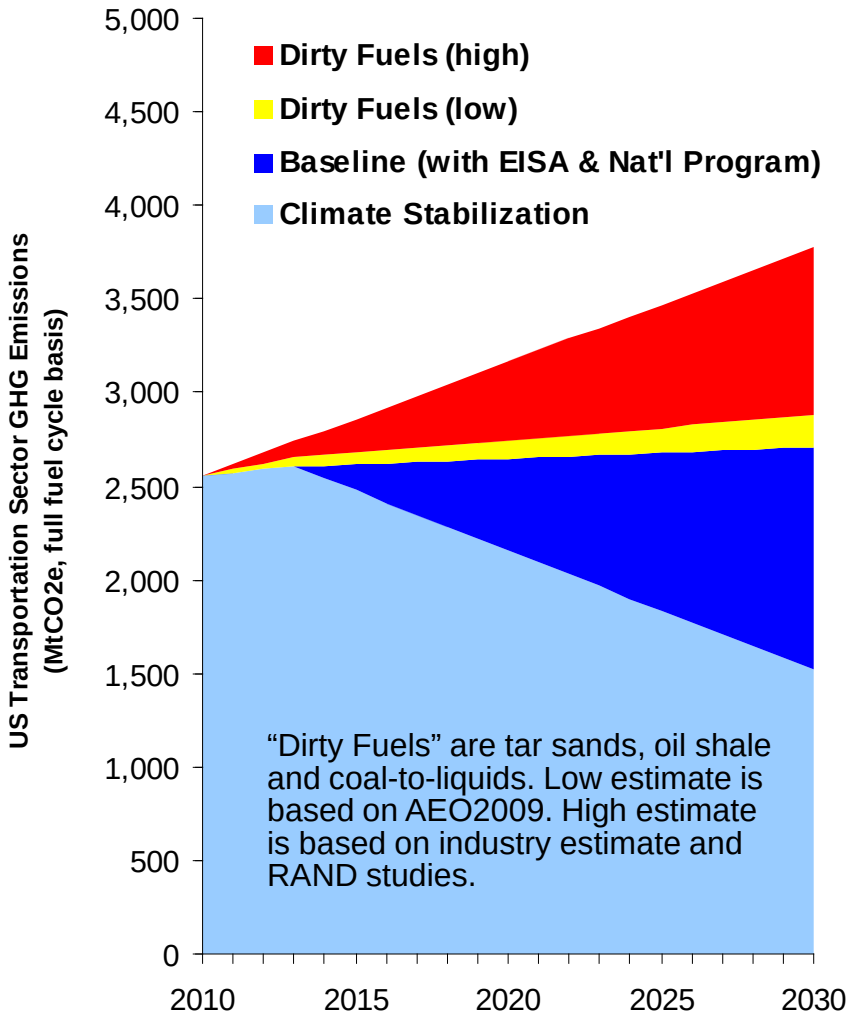
- LCFS must be part of overall economy-wide GHG control program that includes Cap & Trade and other complementary standards and measures
- LCFS performs three critical functions in such a program
  1) If biofuels are not in cap (e.g., HR 2454), serves a critical accounting function for uncovered emission sources. Protects against domestic and global emissions leakage primarily due to unconventional oil and biofuel carbon footprints.
  2) Provides flexible framework for fuel providers to manage carbon liability of High Carbon Fuels. Development of high carbon fuels undermines attainment of GHG reduction if not directly managed by fuel providers.
  3) Promotes Low Carbon Fuels in performance-based, technology-neutral manner. Provides direct signal to fuel providers that is needed to overcome market barriers and other obstacles to low carbon fuels on pace and scale necessary to meet GHG reduction goals.

1. Potential for Carbon Fuels Leakage



- "Leakage" in 2020 due to uncapped sources of biofuel and tar sands emissions roughly equal to 273 MtCO2e or 25% of total reductions required from H.R. 2454 (+60 MtCO2e for biomass for electricity or 6% of total)
- Ideal policy is to also put biomass in the cap (e.g., require fuel providers to hold carbon allowances for all uncovered sources of full fuel cycle emissions, international and domestic)

2. High Carbon Fuels Undermine Carbon Targets



- By 2030, transportation sector emissions could rise 6-33% over baseline, assuming fixed conventional petroleum carbon intensity (roughly 170 to 900 $MtCO_2e$)
- Under C&T system, some high carbon fuels emissions are covered thereby forcing other sectors to make deeper cuts. However, some emissions are not covered and results in leakage.
- Investments in high carbon fuels are to large extent irreversible; huge sunk costs in facilities and pipelines creates "carbon lock in".

LCFS Promotes Energy Security and Treats High Carbon Fuels Fairly

- **LCFS addresses energy security in a proactive and responsible manner**
- **LCFS promote ES by reducing oil dependency which in turn reduces the market power of OPEC and other oil exporting nations, deprives potentially unfriendly nations of revenue, and helps insulate economy from oil price volatility**
- **LCFS does not “ban” high carbon fuel, but provides fuel providers with a high degree of flexibility to use high carbon fuels as long as carbon liability managed (thru CCS, renewable energy inputs more low carbon fuels, refinery efficiency, etc.)**

Tar Sands, LCFS and Energy Security

- Canadian Tar Sands face enormous constraints to expanded production: climate, natural gas, and water
- Accessing Asian markets is difficult at best: significant opposition to pipeline, moratorium on marine tankers in BC, and large sunk investments in pipelines and refinery upgrades in U.S.
- Canadian government has committed in writing to Gov Schwarzenegger to reduce tar sand emissions to levels “comparable to light crudes* which would eliminate any LCFS disincentive to importing tar sands. However, their current policies would have to be considerably strengthened to accomplish this goal and will require the support of the Alberta government.

* See letter from Honorable Lisa Raitt, Minister of Natural Resources Canada to Hon Gov Schwarznegger, April 21, 2009. “meeting this target will require mandating emission reductions from industrial sources, including oil sands facilties…Under the federal climate change plans, GHG emissions will continue to decline and life-cycle emissions from oil sands production will be reduced to levels comparable to ligher crudes.”

"Oil Sands and Energy Security" (Council on Foreign Relations, May 2009)

- Benefits are modest at best because oil is global commodity
  - "The energy security benefits of Canadian oils sands production are real but because oil is traded on a global market, not as large as some intuitively assume. Oil sands exploitation will not fundamentally change the global oil picture."
  - The study concludes the greatest ES benefit is thru diversion of resources from unfriendly gov'ts but no reduction in US vulnerability to oil price volatility and OPEC price manipulation, and no reduction in military commitments.
- Even if LCFS results in shuffling tar sands to China, no effect on energy security
  - Primary benefit of diversion of resources accrues even if shipped to China
- Significant climate tradeoff in a world where US and Canada commit to reducing emissions by 80% by 2050
  - "Oil sands emissions would then become equivalent to about 10 percent of US emissions by 2050, representing almost all emissions from Canada at that point."

Are There Alternative Policies that are Functionally Equivalent to LCFS?

- Hypothetical minimum alternative package?
  - Full carbon accounting for biofuels under cap (including international and indirect land use change emissions)
  - At minimum border adjustments for imported transportation fuel feedstocks and finished products (either fees or carbon allowances), but direct signal may still be necessary to prevent carbon lock-in
  - “Improved” RFS/Half a LCFS (technology neutral, performance based standard on increasing fraction of low carbon fuel production mandate)
- Note, tough political questions are the same
  - Agricultural sectors reluctance to have full carbon accounting standards on biofuels
  - Oil industry strong resistance to carbon constraints on high carbon fuels, especially tar sands

Conclusions (for discussion…)

- LCFS (or perhaps a policy package that perform the same critical functions) needed to get carbon accounting and signals right in the fuels sector
- LCFS or other policies that might inhibit tar sand imports would have minimal or no impact on energy security under most reasonable scenarios because oil is global commodity
- If tar sands producers control their production emissions to level of light crudes, LCFS is not a disincentive to accessing US market
- LCFS is clearly superior to RFS2 as a structure to promote low carbon fuels and reduce fuels carbon intensity in the most cost-effective manner possible: technology neutral, performance based, full fuel cycle