

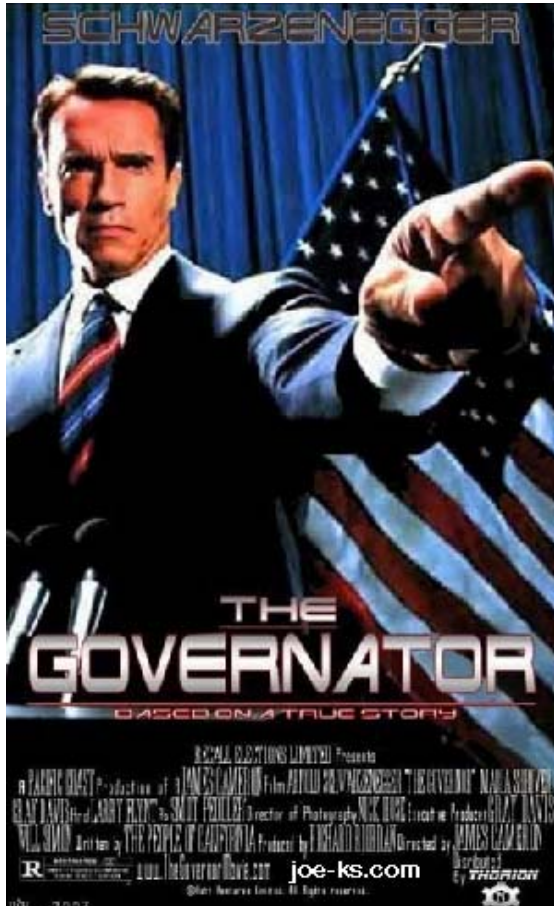
Opportunities for CCUS-EOR in CO2 Markets

Presented to



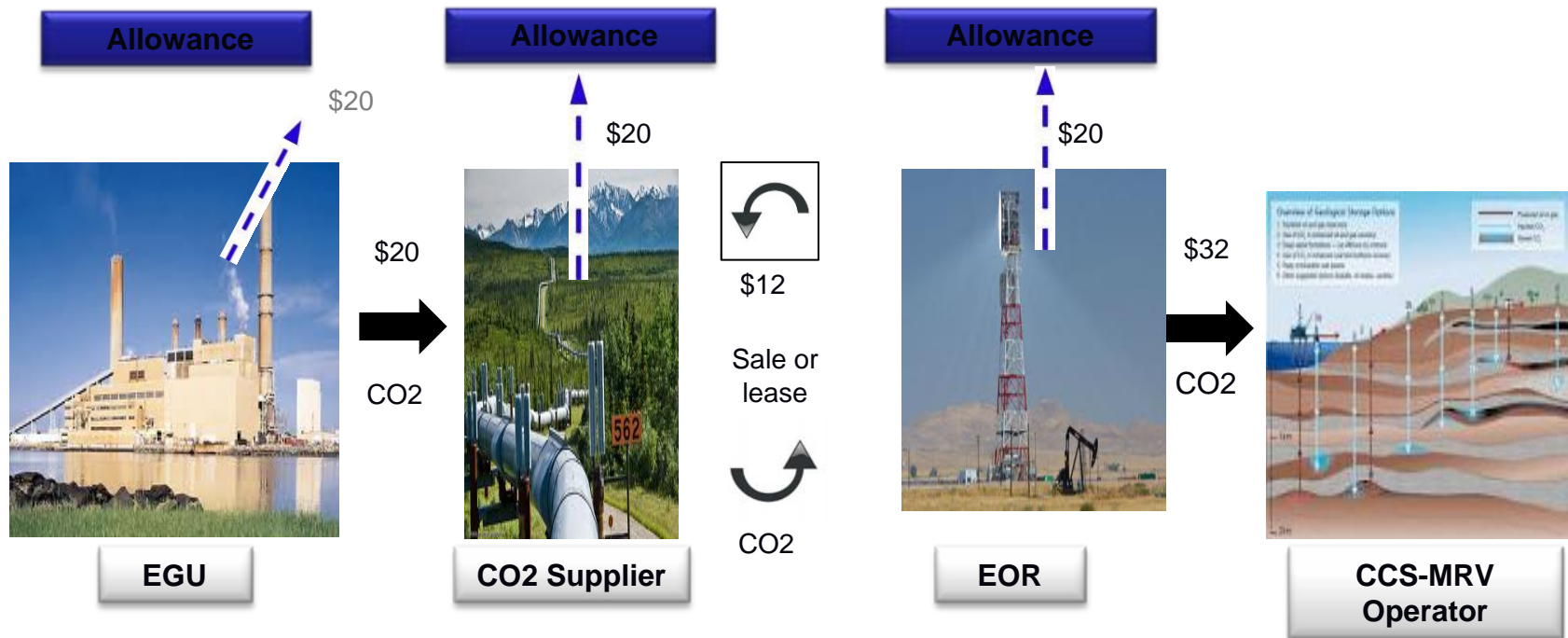
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California's Carbon Market Rules



- Assembly Bill 32
- Cap-and-trade starts January 1, 2013
- Affects 360 businesses with 600 facilities; 80% of emissions
- 163MM ton annual cap (2013); 394MM tons when fuels added (2015)
- 2.7b allowances; \$10/ton floor
- Trading, banking, offsets (8%)
- “Free” allowances transitioning to auction
- 2 lawsuits so far (offsets and Chamber)

Regulation of CCUS-EOR in California



Opportunities for CCUS-EOR: California

- CCUS must be credited under AB32 market rules (allowances or offsets)
 - Methodology required
 - ARB lacks bandwidth
 - SB 1139 (Rubio) failed in 2012, but would accelerate methodology
- Allowance auction revenue – \$billions must be spent on CO2 reductions – including CCUS-EOR?
- Budget deficits softening opposition to EOR, hydraulic fracturing in California.



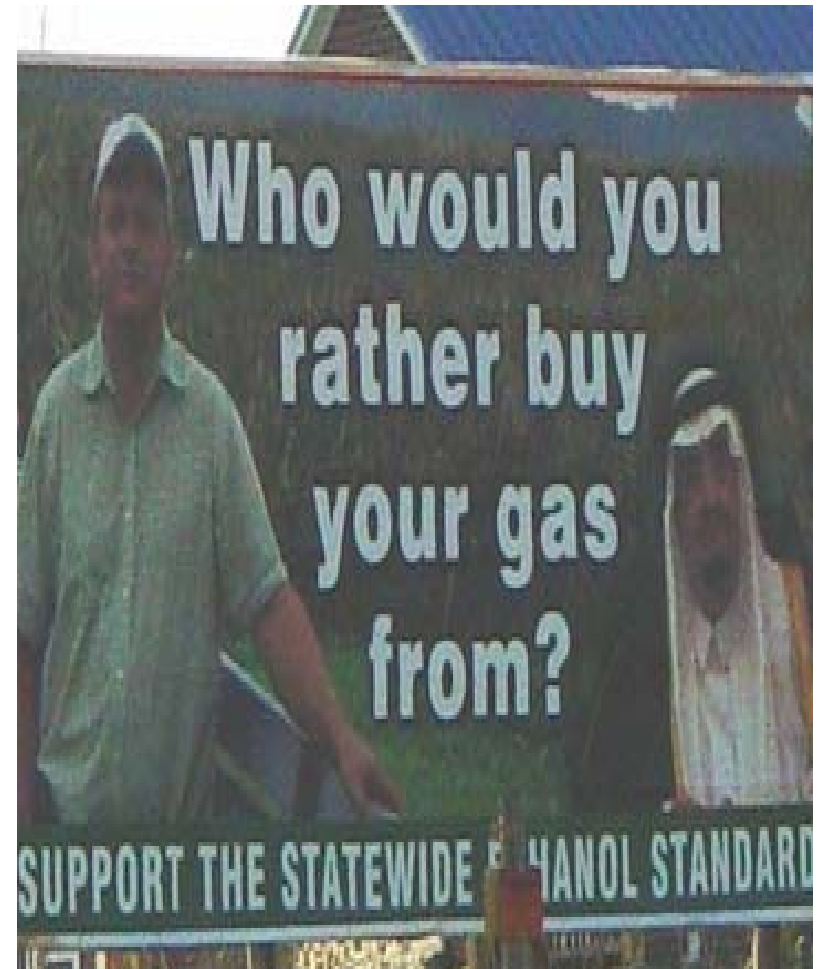
California Low Carbon Fuel Standard

- LCFS requires 10% lower carbon footprint.
- Challenged in court by Midwest ethanol producers.
- Opportunities for EOR-derived fuels untested?



EPA Renewable Fuel Standard

- Quotas for biofuels in U.S. fuel supply (36B gal. by 2022).
- Requires GHG footprint 50-60% below conventional.
- API declares war on RFS (issues: blend wall, RIN fraud, food v fuel).
- NYU Law petition for EPA low carbon fuel standard under Clean Air Act authority.
- Credits for low-carbon EOR domestic production?



Questions?

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