Carbon Capture: Environmental Justice Considerations

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Carbon capture is a very expensive and highly experimental field. Data shows projects have highly variable rates of capture or permanence, and most carbon captured in the United States is being used to increase emissions through enhanced oil recovery. There have been documented harms to communities in proximity to these projects, and increasing questions about safety that we have yet to answer. Legislation requires that we prioritize cost effective, direct emissions reductions that provide meaningful co-benefits to communities that are expressly protected under AB 32 (2006).

AB 32 also requires certain standards be met for all climate programs in California:

- ☐ Maximum technologically feasible and cost-effective reductions
- ☐ Complementary to other strategies
- ☐ Strategies are non-duplicative of other efforts
- ☐ Reductions are real, permanent, quantifiable, verifiable, and enforceable

Each step of the carbon capture process raises concerns that warrant strong oversight:

- Capture - What chemicals are used, and how are they stored and disposed of? How much water and energy is needed to fuel the overall process? What is the conservative estimate for the rate of capture compared to the emissions generated along a project's lifecycle–including feedstocks–and how do we ensure that is a positive reduction (and not an increase, as we see in bioenergy with carbon capture and storage or BECCS projects)? Will local air pollution increase as a result of the process? Will this application of carbon capture cause us to sink costs into infrastructure that should instead be phased out to meet climate and air quality goals? What are the opportunity costs and moral hazards?
- Transportation - Given that the safest form of carbon transport (dedicated carbon pipelines) is still very risky, who will oversee the siting, maintenance, and liability for those facilities? Pipelines are dangerously under-regulated and they may or may not be regulated at all for the dominant supercritical fluids. In a state that experiences earthquakes, does the technology exist to ensure pipelines won't rupture? Are there sufficient locations for pipelines that would be far enough from communities to ensure minimal risk?
- Storage/Use - Who will evaluate and oversee storage projects for leakage or other geological risks? Who will monitor to ensure any leakage is detected, and

what would that mean for anyone who received “credits” for that carbon? Who is responsible for evaluating any groundwater risks? What happens when storage leaks, and who is responsible? What are safe, permanent, and effective forms of storing carbon, if any?

Key Questions for Carbon Markets:

1. Who will pay for the exorbitant costs of carbon capture? How do we protect consumers?
2. How do you quantify the emissions “reduced” by carbon capture when the actual capture rate and storage permanence is so variable and unpredictable project-by-project?
3. How do you ensure that carbon capture is used strategically and where no other options exist, rather than in a manner that extends the life of a traditional industrial practice that needs to be phased out or dramatically reconfigured to ensure California meets our climate targets (i.e. natural gas power plants, waste incinerators, ethanol production, or refiners)?
4. How can we implement and enforce sufficient financial assurances from project developers?
5. What oversight mechanism could ensure that carbon captured is only sold/counted once?

Current CCUS Projects - California