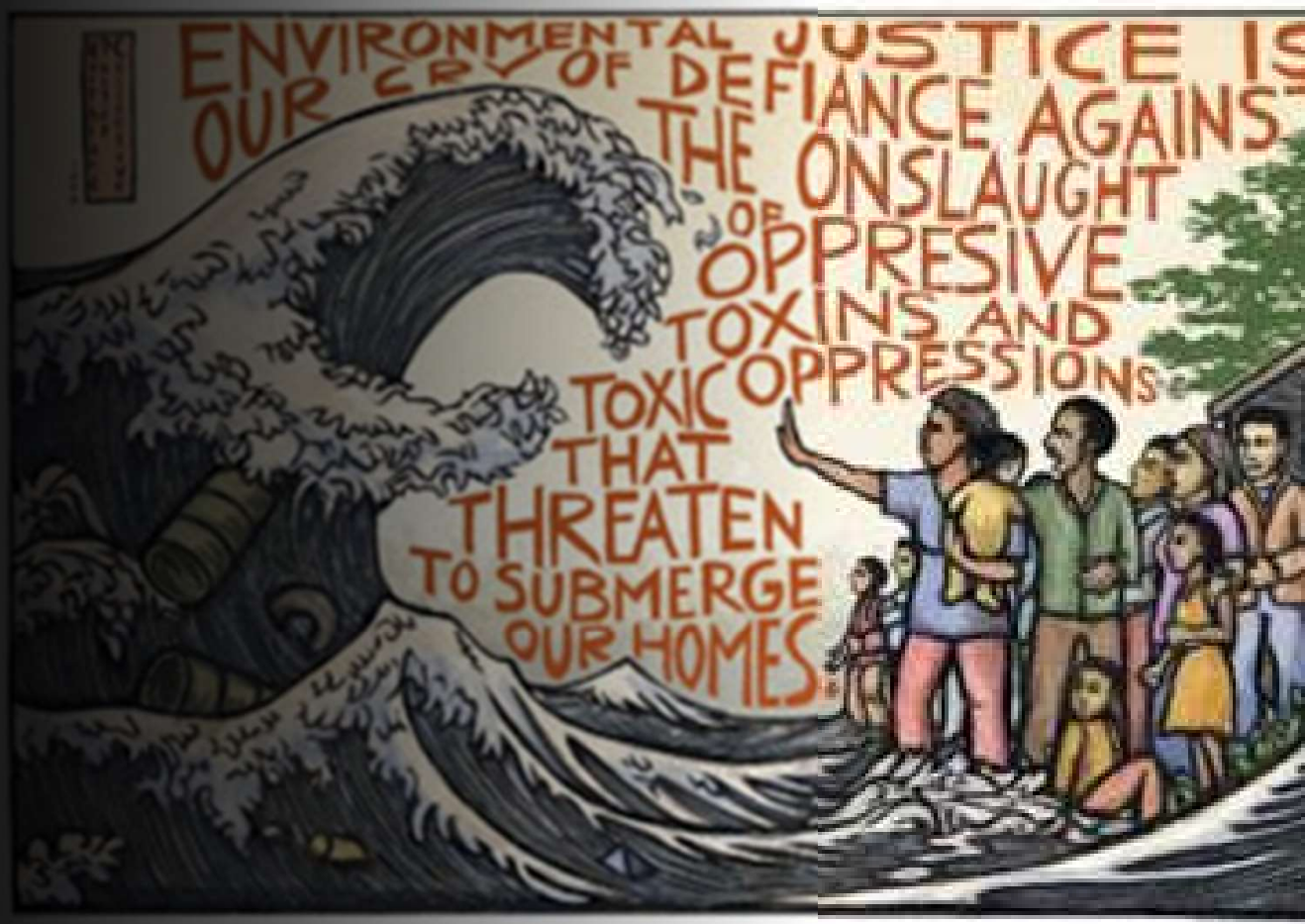
CCUS and DAC: Climate Risks and Needed Community Protections



Climate Risks of DAC and CCUS

- Use carbon for EOR (as the state's LCFS and federal 45Q incentivize)
- Opportunity cost—generally very expensive
  - DAC and CCS are unlikely to benefit much from economies of scale

Climate Risks of DAC

Moral hazard/mitigation deterrence

Unless DAC is done with solar/wind and storage, most likely net positive; uses a *ton* of energy. At scale, would deny these resources to the grid.

Climate Risks of CCUS (General)

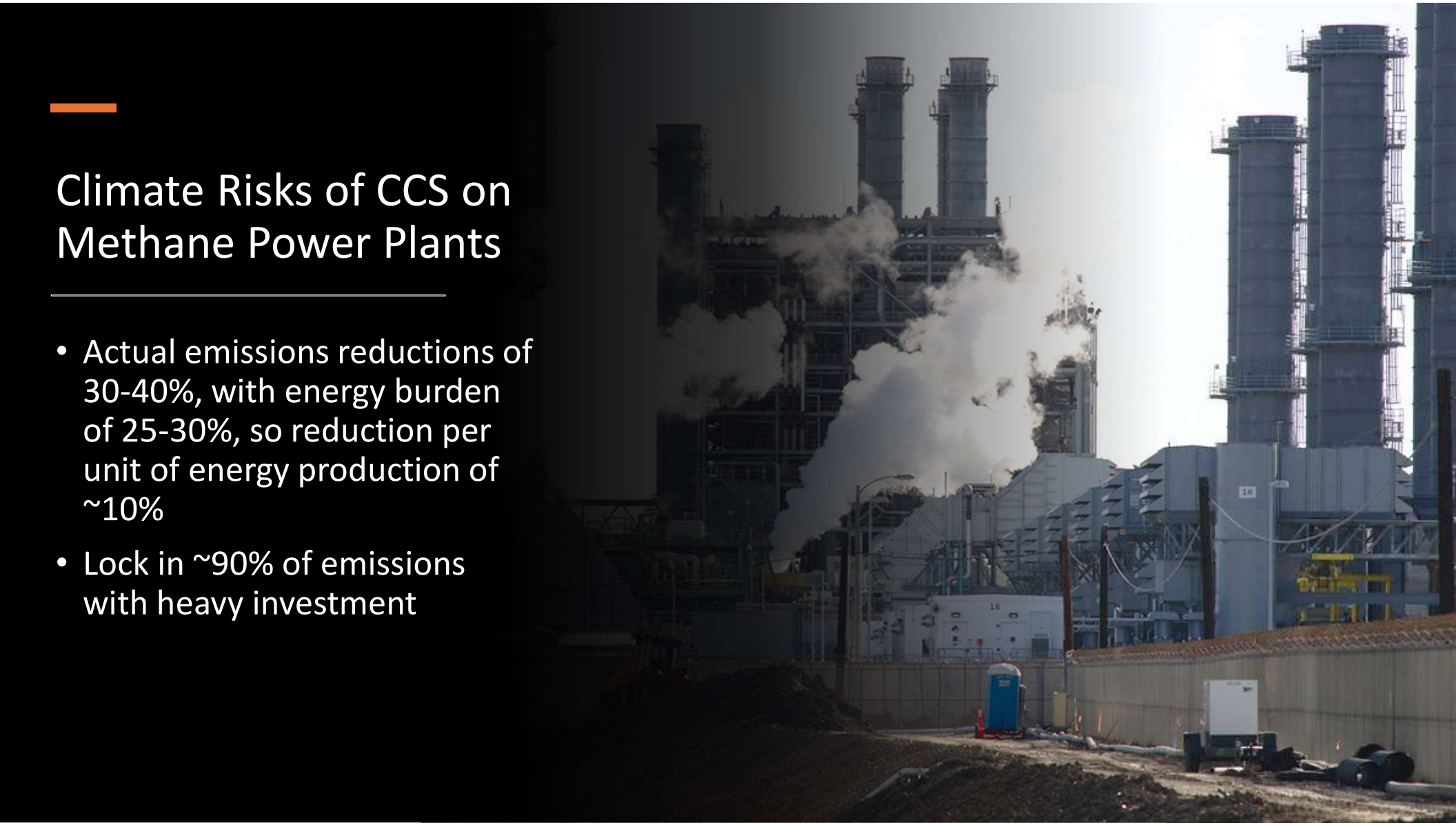
- Distraction and delay
- Lock-in effects
- (The IPCC does **NOT** recommend smokestack CCUS!)

Climate Risks of CCS on Refineries

- Of hundreds of emissions streams, each needing CC apparatus, only 1-2 good candidates for capture
- CARB has modeled 70% reductions, which is impossible, delaying needed phaseout

Climate Risks of CCS on Methane Power Plants

- Actual emissions reductions of 30-40%, with energy burden of 25-30%, so reduction per unit of energy production of ~10%
- Lock in ~90% of emissions with heavy investment

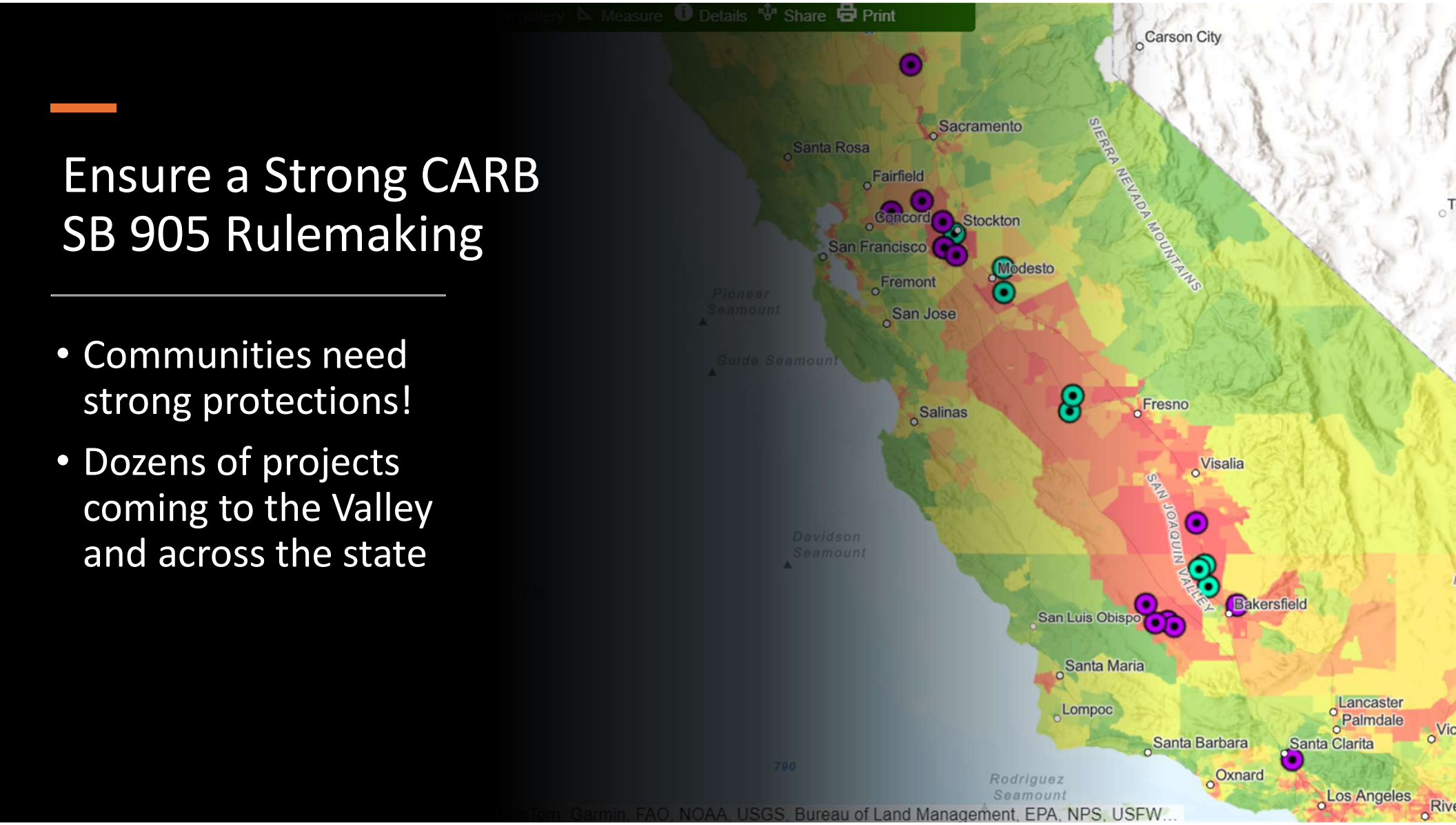


Climate Risks of BECCS

- A shell game with unrealistic assumptions
- Very expensive and inefficient
- Phony “reductions” that hide real emissions

Ensure a Strong CARB SB 905 Rulemaking

- Communities need strong protections!
- Dozens of projects coming to the Valley and across the state



Per SB 905:

39741.1. (a) The state board shall…(3) Ensure that all [CCUS/DAC] projects include the following, as appropriate:

- (A) Strategies to minimize, to the maximum extent technologically feasible, copollutant emissions from [CCUS/DAC] facilities…
- (B) Strategies to ensure that [CCUS/DAC] projects minimize, to the maximum extent technologically feasible, local water pollution or air pollution from construction- and transportation-related impacts…

…

(c) The state board shall adopt regulations to implement this section.

Protections Needed for CCUS and DAC

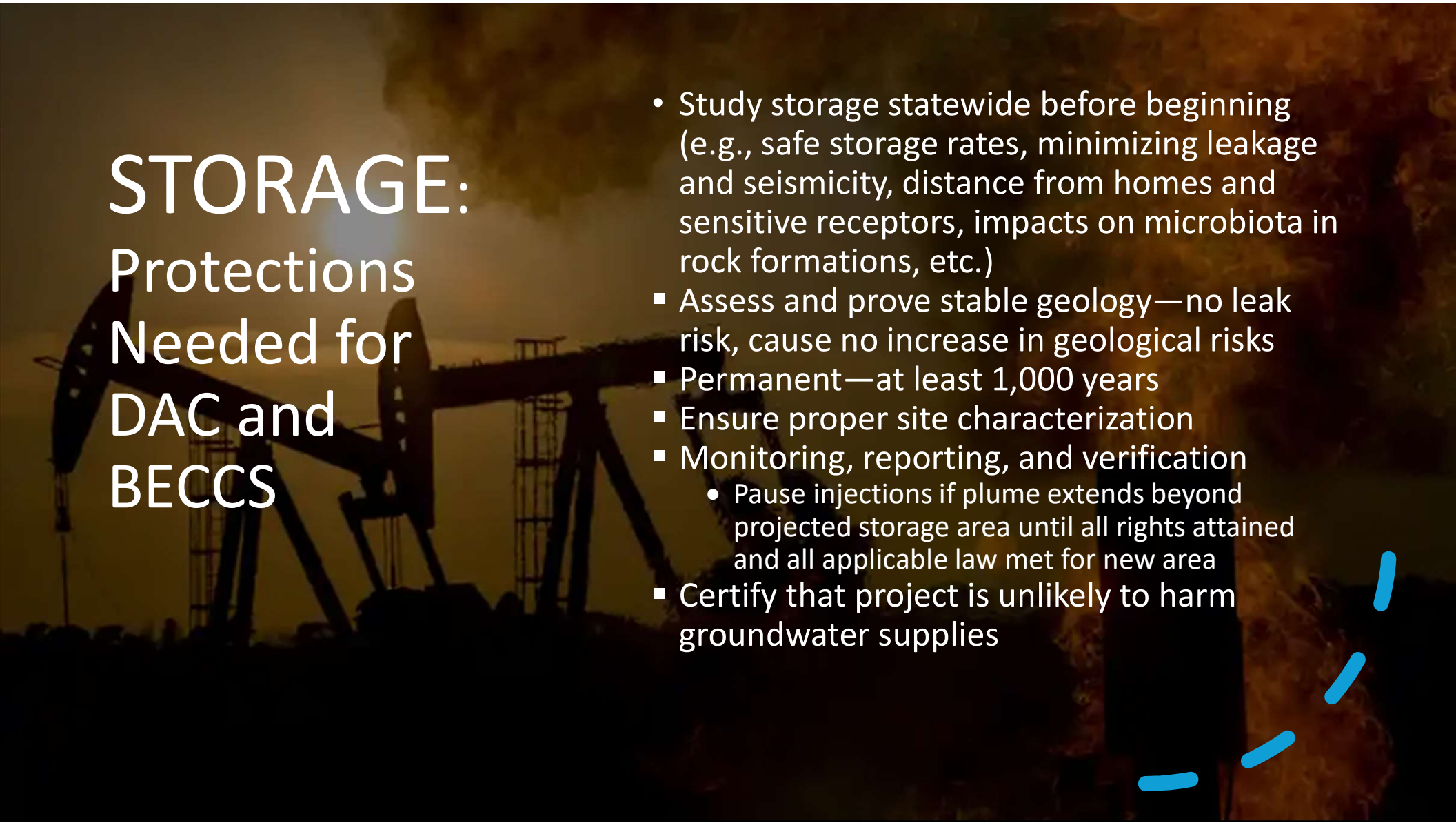
- Can’t increase local air and water pollution
- At least 10 miles between homes and capture, storage, or pipelines
- Powered by excess, clean, renewable energy
- Financial assurances that do not count on a company maintaining strong fiscal health for over a century (bonds, 3rd party ins)
  - Responsive to continuous reevaluation of costs of closure, remediation, and leaks/other harms

Protections Needed for CCUS and DAC

- Government process
  - Ensure it's not used to drag our heels on direct emission reductions (e.g., no LCFS or other offset crediting)
  - Ensure additionality
  - Polluter pays, not consumers through increased utility rates or gas prices

Protections Needed for CCUS and DAC

- Informed consent and good process
  - Notify community members at least 6 months before permit application
  - At least 3 public workshops before gov decisions made
  - Community benefits required
  - Full EIR on all projects
  - Require worst-case scenario modeling



STORAGE: Protections Needed for DAC and BECCS

- Study storage statewide before beginning (e.g., safe storage rates, minimizing leakage and seismicity, distance from homes and sensitive receptors, impacts on microbiota in rock formations, etc.)
- Assess and prove stable geology—no leak risk, cause no increase in geological risks
- Permanent—at least 1,000 years
- Ensure proper site characterization
- Monitoring, reporting, and verification
  - Pause injections if plume extends beyond projected storage area until all rights attained and all applicable law met for new area
- Certify that project is unlikely to harm groundwater supplies

TRANSPORTATION:
Protections Needed for DAC and BECCS

- **Keep moratorium in place**
- Add odorant (or colorant)
- Community burdens and resources must be considered during siting
- Prove stable geology where projects are to be sited
- CO2 regulatory definition must apply to all phases
- Do not convert old pipelines to CO2
- Require pure CO2 streams
- Don’t use other modes of transportation