

4 Should I Stay or Should I Go? The Challenge of “Leakage”

This brief discusses findings that emerged through a series of interviews held in the spring of 2021, and a virtual workshop held in June 2021, in which over 115 stakeholder participants discussed Pathways to Carbon Neutrality in California.

Driving Carbon Producers Out of State Doesn’t Solve the Problem.

Achieving net zero carbon by 2045 will require changes to virtually every aspect of California’s economy. To the extent these changes affect the industrial and business sectors, there is a risk that this energy transition could cause “leakage” by motivating private sector entities to move some activities out of California.

MANY PARTICIPANTS SPECIFICALLY identified leakage as a risk. When business activity moves out of California, the emissions simply move to another location, and there is no overall reduction in carbon. As one participant put it, driving emissions out of state doesn’t solve the problem.

Leakage is not specific to decarbonization. Businesses have long argued that California’s regulations, costs, taxes, traffic, etc. make doing business in California so unattractive that some firms will choose to leave the state. Economists have debated these issues without achieving consensus, and the energy transition will add much (non-fossil) fuel to those fires. Our purpose in this brief is not to participate in this debate, but rather to identify specific areas where decarbonization policy and subsidy design might increase the risk of leakage.

DECARBONIZATION HAS POTENTIAL TO INCREASE LEAKAGE PRESSURE

If the consequences of decarbonization were to cause a business or business activity to become uneconomic, that business could not long remain in California. If the consequences were to cause a business or business activity to become less economic, that business may choose to leave California in order to retain acceptable profitability. ***Is the risk of forcing some business activity out of state being adequately considered?***

LOWER STANDARDS IN OTHER STATES

If a business activity moves to a region with lower carbon standards than California, carbon emissions of the activity might actually increase, since other states tend to have higher percentages of fossil-fired electricity than California. Products produced in another state for California would still be shipped into California thus increasing transportation carbon emissions. ***Is the risk of increased emissions in other states and related transportation activities due to leakage being adequately considered?***

SPECIFIC LEAKAGE RISKS

Listed below are some leakage risks identified by participants.

HOMEBUILDING

It is well-known that California is not building enough homes. Participants indicated that it is much easier to construct new housing in other states, and that, for example, a builder’s return on investment in Idaho (which has much lower carbon standards than California) is almost 3 times higher than in California. ***Can the energy transition catalyze efforts to make homebuilding more attractive in California?***

POPULATION

Participants pointed out that when a person moves out of California, which has relatively low carbon emissions per capita¹, their carbon usage is likely to increase. Policies that make California less attractive to live in are problematic for overall carbon reduction. ***Is the challenge of homebuilding and risk of population loss or stagnation being adequately considered?***

TRUCKING AND WAREHOUSING

Participants indicated that the trucking industry has faced sustained pressure to replace diesel trucks with more expensive natural gas or electric vehicles. In southern California the warehouse industry faces costly mandates related to the number of diesel truck trips. The possibility that trucking and warehouse firms will accelerate the movement of California-serving operations to just over the state border merits consideration as decarbonization moves forward. ***Could regulations and subsidies for trucking and warehousing be designed and coordinated to achieve carbon and pollution goals while minimizing disruption to firms?***

FARMING

Participants indicated that many forces are reducing farming in California, with some farmers leaving even though “the land is harder to farm” in some other states. Participants indicated that these forces include high labor cost, high equipment cost (partly due to California-specific regulations), regulations (especially CARB), development pressure on farmland, and water shortages. Participants stated that small farms are the most vulnerable because they find it more difficult to address the regulatory burden.

DAIRY FARMS

Participants noted that dairy cow numbers are decreasing in California because the cows are moving out of state. Participants perceived that anaerobic digestors needed for decarbonization face excessive permitting and integration challenges (too many permits from too many agencies; too difficult to link anaerobic manure gas production into natural gas infrastructure). Participants expressed concern that because big dairies have economies of scale, the government is in effect subsidizing large dairies to get bigger.

BEEF RANCHING

Participants indicated that cattle need to be processed near where they are fattened up, but that California has been “leaking” processing plants for years, causing “many cattle” to be shipped out of state for slaughter and then shipped back for consumption. ***Are the cumulative impacts on farming and ranching being adequately considered?***

CEMENT

Participants pointed out that cement is an internationally-traded commodity, and if decarbonization substantially increases costs, cement production will likely leave the state. ***Is the impact on the cement industry being adequately considered?***

¹ We note that CO₂ emissions per capita in Texas are 2.7 times higher than in California (2017 data).

Leakage in the Future

Leakage has and will continue to shape California’s economy. The energy transition might cause additional unexpected leakage of business activity. It is difficult to predict in advance, or to prove in retrospect, the extent to which business relocations are caused by decarbonization. ***How can the potential for leakage be balanced with other factors as decarbonization proceeds?***