



December 15, 2023

Ms. Rajinder Sahota
Deputy Executive Officer
California Air Resources Board
1001 I Street,
Sacramento, CA 95814

Sent via upload to:

<https://ww2.arb.ca.gov/public-comments/joint-california-quebec-public-workshop-cap-and-trade-regulation-nov-16>

Re: Comments regarding November 16, 2023 CARB Public Workshop on potential amendments to the Cap-and-Trade Regulation

Dear Ms. Sahota,

We are writing to provide comments on the California Air Resources Board (CARB) Public Workshop on potential amendments to the Cap-and-Trade Regulation hosted on November 16, 2023. California Resources Corporation (CRC) is an independent energy and carbon management company committed to energy transition. CRC has some of the lowest carbon intensity oil and natural gas production in the US and we are focused on maximizing the value of our land, mineral and technical resources for decarbonization by developing carbon capture and storage (CCS) and other emissions reducing projects.

As a company exclusively invested in California, CRC is committed to the success of California's climate goals, including transitioning the economy to meet net zero greenhouse gas emissions by 2045. CRC announced a Full-Scope Net-Zero Goal in November 2021, which includes eliminating our Scope 1 and 2 emissions and permanently storing captured greenhouse gas emissions in a volume equal to our Scope 3 emissions by 2045. CRC aims to develop California's first commercial-scale CCS project.

2030 Allowance Budget Scenarios – 40%, 48% or 55% reduction from 1990 Baseline

As CARB emphasized in the 2022 Scoping Plan Update (Update), it will not be possible to meet the 2045 carbon neutrality target without the deployment CCS and carbon dioxide removal (CDR) technologies at significant scale.

The Update further determined that the 2030 GHG reduction target should be accelerated from 40% to 48% to meet the AB 1279 target of 85% below 1990 levels by 2045. However, the Update recognized that achieving this level of reductions is dependent on the deployment of CCS and CDR at scales of 20 MMTCO_{2e} by 2030 and 100 MMTCO_{2e} by 2045.

With the stated necessity of CCS implementation to meet any target exceeding the "business as usual" (BAU) case of 40% reduction by 2030, excluding CCS from the Cap-and-Trade credit cost modeling presented by UC Davis uses scenarios that were discarded in the 2022 Scoping Plan as infeasible.

The results, unsurprisingly, point to credit costs reaching the statutory maximum or ceiling price as a price control. When a price control limits the cost of anything in a functioning marketplace, it indicates a failure of the marketplace to supply a demand. We also note that the ceiling price as depicted (on page 34 of the Staff presentation) is overly optimistic. The ceiling price is set by AB398 as \$61 in 2021 increased each year by 5% plus the consumer price index (CPI). According to CARB, the 2023 ceiling price is \$81.50, reflecting year on year increases of 11.2% for 2021 and 12.7% for 2022, or CPI increases of 6.2% and 7.7% respectively. The graph on page 34 titled “Modeled Prices under Different Scenarios” shows a ceiling price in 2030 of \$115, which would only be possible if CPI increases were 0% over the 2023-2030 timeframe. CPI increases are averaging 4.2% year-on-year over the first eight months of 2023 and long-term targets are near 2%, not zero. **CRC recommends updating the ceiling prices used in analyses to reflect actual and projected increases in CPI.**

Under the cost-at-ceiling scenarios, the annual revenues to the Greenhouse Gas Reduction Fund (GGRF) would certainly benefit in multiples, but at the expense to Californians who are already burdened with the highest energy costs in the country. We note that the Cap-and-Trade costs for a gallon of gasoline or diesel would be over a dollar at the ceiling price, exacerbating the premium Californians pay for energy compared with the rest of the country. Increased energy costs for California businesses will ripple through the economy, increasing leakage of manufacturing, agriculture and energy production.

Considering the importance of implementing CCS and CDR and the centrality of CCS to the proposed Cap-and-Trade targets, **CRC recommends that CARB freeze the reduction of allowance caps under the current Cap-and-Trade Program until at least one large-scale CCS project has been successfully implemented.** Once a permitting of CCS in California has been demonstrated and a roadmap has been provided for permitting and infrastructure development, CARB could use the projected rate of CCS deployment along with other market signals to determine the appropriate rate of cap reductions to avoid market failure. This approach would result in a non-linear reduction in the cap, beginning with gradual reductions in the immediate years and leading to more rapid decreases in the later years of the program when CCS projects come online.

Without this strategic flexibility, the implementation of accelerated emission reduction targets will both decrease the number of credits available in the market and decrease the production allocations that businesses in the state receive. These two actions together will increase costs of energy to consumers in the state and drive emissions leakage toward states and countries without Cap and Trade. To that end, **CRC recommends that CARB study the effects of the modeled ceiling level Cap-and-Trade prices on leakage and take steps to mitigate and minimize that leakage as is required under AB 32.**

The failure of the Cap-and-Trade market to stabilize credit pricing as described above points to the necessity of including CCS/CDR technology roll out in the economic modeling. CRC has been a leader in the developing CCS market and has real-world economics developed from arms-length transactions that would be useful as inputs to the modeling. We noted the comment by staff



that the price point for CCS should be in the \$60/MT range. This price is not in line with actual economics for these projects. Further, including the impacts of federal subsidies contained in the Inflation Reduction Act on injection pricing needs to be fully detailed as they depend on the application, have varying timeframes, and are generally divided in some way between the producer and receiver. Further, the cost of capture and technology choice is highly dependent on the source of the CO₂. CRC is offering to work with CARB staff to provide real-world data on the economics of CCS in California and informed by various academic or other publicly available studies.

CARB should not wait for SB905 issues to be fully resolved to take steps to make CCS part of Cap and Trade or to model the impact of CCS on credit pricing

Carbon Capture and Sequestration is necessary to achieve the reductions envisioned in the Update. As noted in the Update, approximately 10% of the power generation in California in 2045 will be gas-fired plants fitted with CCS, a proven technology, to provide firm baseload and dispatchable power to fill in the power generation gaps left by wind, solar and batteries. The same technology can also reduce greenhouse gas emissions from cement, biofuels and other hard-to-decarbonize industries not amenable to electrification or hydrogen use. The implementation of CCS should be a base assumption going forward.

CRC renews the call to include CCS in Cap and Trade

Currently, neither the Mandatory Reporting Regulation (MRR) nor emission-based Cap-and Trade program recognizes emission reductions through CCS. The exclusion of CCS under Cap-and-Trade represents a disconnect between the major implementing regulations of AB 32 (i.e., MRR, LCFS, Cap-and-Trade) and California's carbon neutrality goals. Currently under Cap-and-Trade, an entity would have to pay cap and trade when not emitting any CO₂ into the atmosphere because there is no mechanism to allow it to subtract captured and geologically sequestered carbon dioxide from its compliance obligation, even when the entity satisfies the requirements of CARB's CCS Protocol to generate LCFS credits. This disconnect means that a CCS project would be treated under Cap-and-Trade as an uncontrolled source and be required to account for and acquire allowances or offsets for all captured CO₂.

Thank you for the opportunity to provide comments on upcoming revisions to the Cap-and-Trade regulation. We look forward to working with CARB on this and other future rulemaking that is spurred by the Update.

Regards,

Chris Gould
Chief Sustainability Officer
California Resources Corporation