Date of Hearing: July 14, 2021

ASSEMBLY COMMITTEE ON APPROPRIATIONS
Lorena Gonzalez, Chair
SB 596 (Becker) – As Amended June 28, 2021

Policy Committee: Natural Resources Vote: 11 - 0

Urgency: No State Mandated Local Program: No Reimbursable: No

SUMMARY:

This bill requires the California Air Resources Board (ARB), by December 31, 2022, to develop a comprehensive strategy for the state's cement sector to achieve net-zero greenhouse gas (GHG) emissions as soon as possible, but not later than December 31, 2045. In developing the strategy, this bill requires ARB to:

1) Define a metric for GHG intensity and evaluate data submitted by cement manufacturing plants for the 2019 calendar year and other relevant data to establish a baseline from which to measure reductions.

2) Assess the effectiveness of existing measures, identify modifications to those measures, and evaluate new measures to overcome the market, statutory and regulatory barriers inhibiting achievement of the objectives described by the bill.

3) Prioritize actions to reduce adverse air quality impacts and support economic and workforce development in communities neighboring cement plants.

4) Include provisions to minimize and mitigate potential leakage and account for embedded emissions of GHGs in imported cement similar to those for cement produced in-state, such as through a border carbon adjustment mechanism.

5) Coordinate and consult with state agencies and other stakeholders.

6) Evaluate measures to support market demand and incentives to encourage the production and use of low-GHG cement, as provided.

Additionally, this bill requires ARB to establish interim targets for GHG reductions in the intensity of cement used in the state relative to the GHG intensity of cement used within the state during 2019, with the goal of reducing greenhouse gas intensity of cement used in the state to 40% below the 2019 average by December 2035. The bill requires ARB by July 1, 2028 to evaluate the feasibility of achieving the interim targets, and authorizes ARB to adjust the targets upward or downward. If ARB makes a downward adjustment, it must submit a report to the Legislature on feasibility constraints and recommended measures, including statutory changes, to overcome those constraints.

FISCAL EFFECT:

1) ARB estimates initial costs of $720,000, including $500,000 in contracting funds, in the first year and $220,000 annually thereafter (Cost of Implementation Account). to develop a strategy, including developing lifecycle GHG reporting and tracking mechanisms for all cement and concrete used in California, measuring the GHG intensity of concrete used in 2019 to establish a baseline, and identify modifications to existing measures and develop new measures to achieve the objectives.
2) Unknown but significant ongoing cost pressure (special fund) for ARB to implement any program that may be developed as a result of identified strategies.

COMMENTS:

1) **Purpose.** This bill is intended to identify policies and strategies to attain net-zero or net-negative emissions of GHG from the cement sector. According to the author:

> This bill aims to create the right supportive policy environment to achieve that goal of carbon neutrality by 2045, with interim targets to spur near term action and a goal of a 40% reduction from 2019 levels by 2035. It directs the Air Resources Board to develop a strategy for achieving these targets and to adopt the necessary regulatory measures to drive demand for low-carbon materials and to create incentives for reducing emissions while protecting producers who do so from unfair competition from out-of-state producers who are not subject to the same rules. This is an opportunity to put one of our "hard-to-decarbonize" industries on a path toward a carbon neutral future.

2) **Background.** Concrete is a mixture of cement (a binder usually made from lime or calcium silicate), aggregates (sand, rock, etc.), water and air. In a typical mix, the cement represents 10% to 15% of the material by volume but 80% to 90% of the life cycle CO_2 emissions for the concrete. Cement is made by grinding clinker, an intermediary nodular material produced from heating limestone and clay in a rotary kiln to about 2700 °F. Most of the energy used in cement manufacturing is in clinker production. The remainder of emissions comes from quarrying, transporting, and preparing the other raw materials.

   Cement accounts for 1.8% of California's GHG emissions and 7% of CO_2 emissions worldwide. California is the second largest cement producing state after Texas, accounting for 10% to 15% of the cement production and industry employment in the US as of 2009.

   ARB currently regulates GHG emissions from the nine cement plants in the state through the AB 32 cap-and-trade program. About 40% of GHG emissions from cement plants are due to fuel combustion and about 60% are especially challenging to reduce because they are inherent to the chemical transformation of limestone into cement.

   The AB 32 scoping plan update due in 2022 will evaluate how to further decarbonize large energy intensive industries such as cement.

3) **Timing and Other Issues.** The deadlines in this bill are inconsistent with when ARB would be able to receive funding to for implementation. The deadline for the strategy is the end of

calendar year 2022, however ARB would not receive resources until mid-2022 at the earliest following the signing of the fiscal year 2022-2023 budget.

Further, requiring this bill to be part of the next scoping plan update is likely problematic from a workload perspective. The author may wish to consider giving ARB longer than one-year to develop the first strategy as required by the bill, which could be updated in later versions of the scooping plan.

Lastly, this bill does not explicitly require ARB to implement the strategy, although the inclusion of interim targets and the ability for ARB to adjust the targets based on changes in progress implies that ARB should be implementing the strategy and monitoring its effectiveness. The author may wish to clarify intent regarding this issue.

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