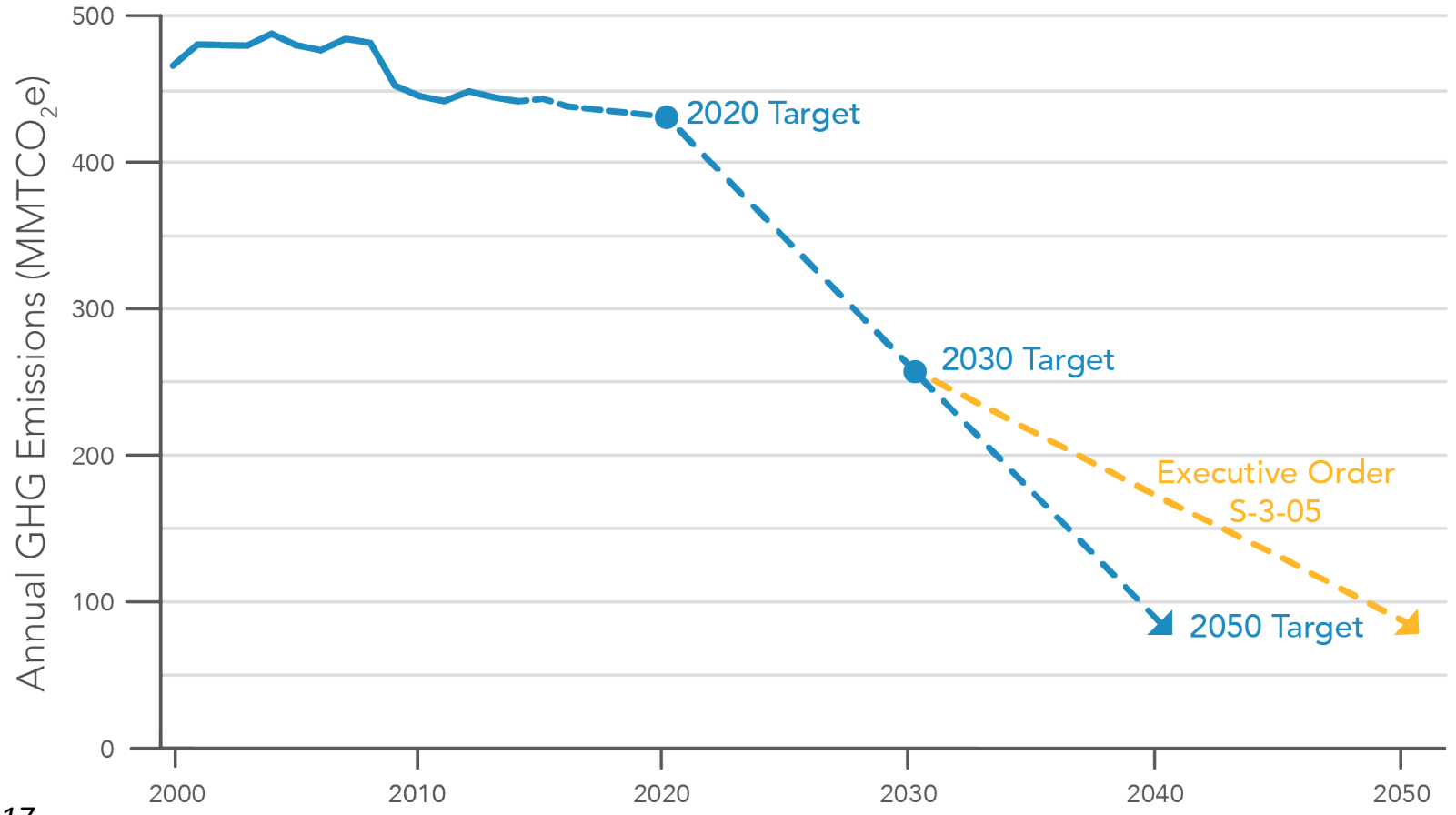
Achieving Carbon Neutrality in California: A Report by E3

CALIFORNIA
AIR RESOURCES BOARD

Webinar Logistics

- Presentation and link to submit and view informal comments: https://ww2.arb.ca.gov/our-work/programs/carbon-neutrality/carbon-neutrality-meetings-workshops
  - Comment docket open Aug 19 - Sept 9
- Register to participate in workshop: https://attendee.gotowebinar.com/register/5604587208339132431
- Click the “Raise Hand” button in the gotowebinar control panel to signal that you’d like to ask a question during the Q&A session

California GHG Emissions Reduction Targets



Source: CARB, 2017

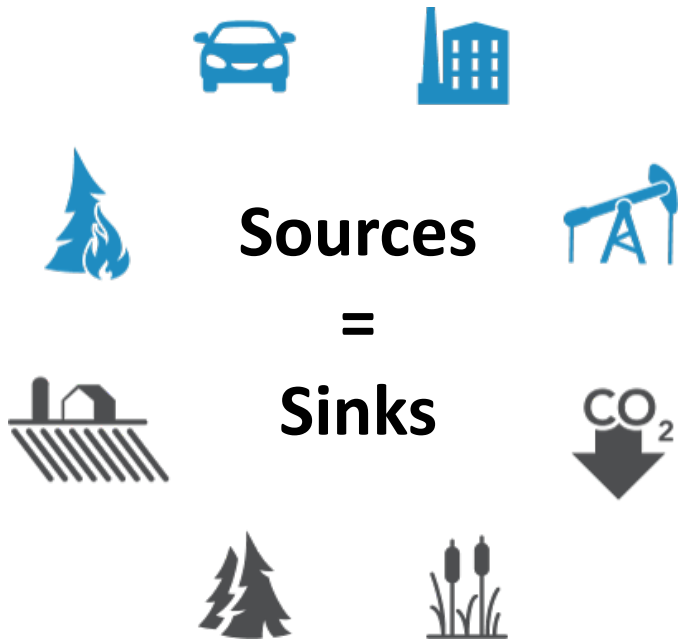
Mid-Century Carbon Neutrality (CO2e)

Step 1: Strive for zero emissions from all sources

Fossil Energy

Industrial Processes

Natural and working lands



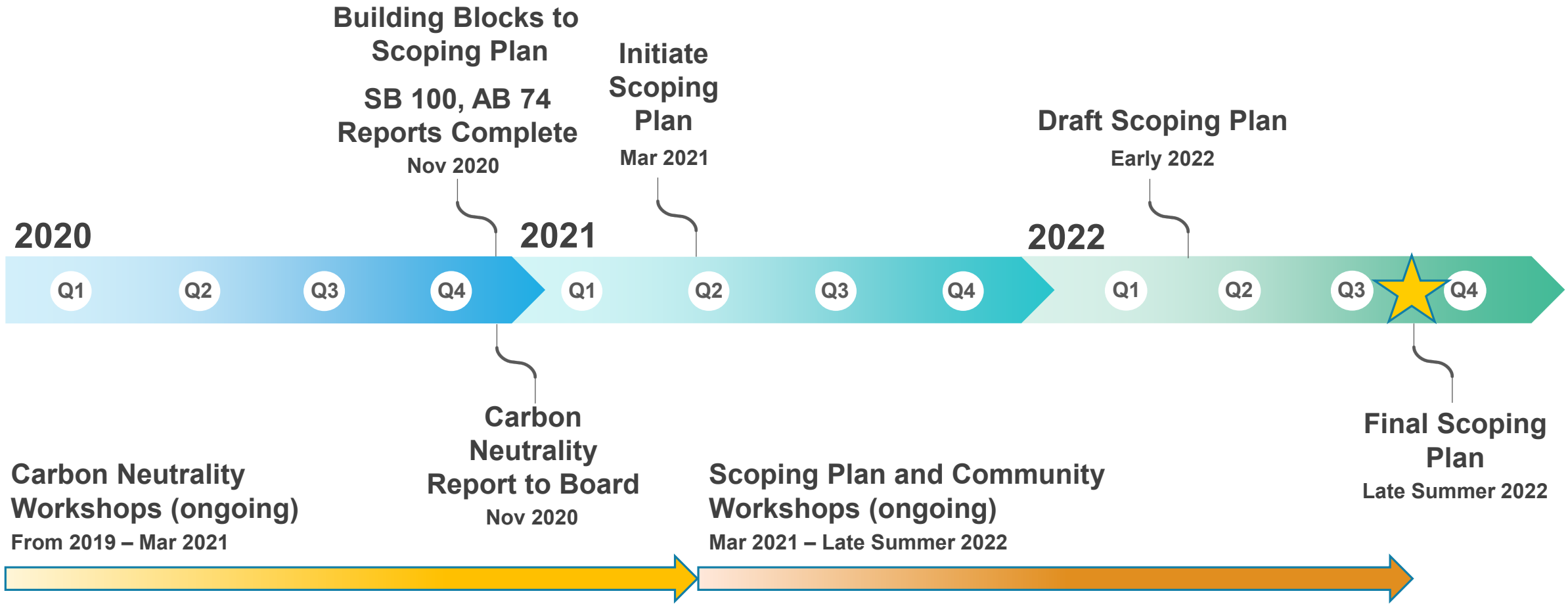
Step 2: Maximize Sequestration

Carbon capture and sequestration

Direct air capture

Natural and working lands

Charting the Path to Carbon Neutrality



Ongoing Multi-Agency Efforts

CARB interagency collaborations

- AB 74 - Transportation Carbon Neutrality
  - Studies will evaluate how to reduce demand for fossil fuels in the sector and how to manage the subsequent decline for supply
- SB 100 - Zero Carbon Electricity Retail Sales by 2045
- SB 1440 – Consideration of annual biomethane procurement targets for each gas corporation
- Continued efforts to reduce emissions from Natural and Working Lands

Context for E3 Study

- CARB contracted study to help start planning for 2022 Scoping Plan Update
- Focus on technology and fuel transformations to achieve 80 percent reduction from 1990 levels by 2045
- Additional work to be included in the 2022 Scoping Plan Update
  - More stringent scenarios of carbon neutrality by 2045
  - Convene Environmental Justice Advisory Committee
  - Emissions sources and sinks in the natural and working lands
  - Economic and environmental analyses

Key Study Questions

- What are the common fuels or technologies across the different scenarios for going beyond 80x50 to help achieve carbon neutrality by 2045?
- How should California consider the tradeoffs between achieving additional energy-sector greenhouse gas reductions, beyond 80x50, versus relying on carbon dioxide removal?
- How do different mitigation scenarios compare on the basis of fuel combustion (implying air quality and health impacts), climate change mitigation risk, and technology adoption and implementation risk?
- What are least regrets fuels and technologies that are likely to be indispensable in working towards carbon neutrality that could be implemented now?

Additional Resources

CARB, 2017: California's 2017 Climate Change Scoping Plan

Energy and Environmental Economics, 2020: Achieving Carbon Neutrality in California