Date of Hearing: June 26, 2023

ASSEMBLY COMMITTEE ON TRANSPORTATION
Laura Friedman, Chair
SB 800 (Caballero) – As Amended June 19, 2023

SENATE VOTE: 40-0

SUBJECT: Advanced Air Mobility and Aviation Electrification Committee

SUMMARY: Requires the California Department of Transportation (Caltrans) to establish the Advanced Air Mobility and Aviation Electrification Committee (committee), in coordination with the Office of Planning and Research (OPR), and the State Air Resources Board (CARB). Specifically, **this bill**:

1) Requires the committee to assess all of the following:

    a) Pathways for feasible implementation of electrification goals for the aviation industry;
    b) Consideration of the inclusion of aircraft fuel in the Low Carbon Fuel Standard protocols;
    c) Current state law and local ordinances and any potential changes that are needed to facilitate the development of urban air mobility (UAM) operations and infrastructure in the state; and,
    d) Pathways for promoting equity of access to Advanced Air Mobility (AAM) infrastructure to ensure open access and prohibit the monopolization of AAM infrastructure ownership and operations.

2) Requires committee membership as follows, taking into consideration geographic diversity:

    a) One member each appointed by the Senate pro Tempore, the Assembly Speaker, and the Governor; and,
    b) Members appointed by Caltrans meeting the following specifications: representatives from Caltrans, CARB, OPR, the Energy Resources Conservation and Development Commission (California Energy Commission, CEC), the general aviation industry, state and local law enforcement, UAM industry, transportation experts, climate reduction experts, aircraft engineering experts, representatives of commercial airports, vertical takeoff and landing operators, representatives from local governments, representatives of the general public, and representatives of electric utilities.

3) Requires the committee to hold public hearings, receive comments, and report to Caltrans and the Legislature no later than January 1, 2025 findings and recommendations on any goals established related to electrification of the aviation industry, and the potential changes to state law and local ordinances to facilitate the development of air mobility operations and infrastructure.

EXISTING LAW:

1) Establishes the State Aeronautics Act with the purposes of, among other things, encouraging the development of private flying and general use of air transportation, fostering and promoting safety in aeronautics, effecting uniformity of laws and regulations consistent with federal laws and regulations, providing for cooperation with federal authorities, and

protecting people living in proximity of airports from noise. (Public Utilities Code (PUC) 21001 & 21002)

2) Defines "aeronautics" as the science and art of flight, including transportation by aircraft; the operation, construction, repair, or maintenance of aircraft and aircraft power plants and accessories; or the design, establishment, construction, extension, operation, improvement, repair, or maintenance of airports or other air navigation facilities. (PUC 21011)

3) Grants the state power to regulate the intrastate rates of common carriers by air, but otherwise recognizes the authority of the federal government to regulate the operation of aircraft and to control the use of the airways. (PUC 21240)

4) Requires Caltrans to encourage, foster, and assist in the development of aeronautics in the state and encourage the establishment of airports and air navigation facilities. (PUC 21241)

5) Authorizes Caltrans to draft and recommend necessary legislation to advance the interest of the state in aeronautics and to make and amend general or special rules, regulation, and procedures and establish minimum standards for aeronautics. (PUC 21242 & 21243)

FISCAL EFFECT: According to the Senate Appropriations Committee:

1) Caltrans indicates that costs to convene the Committee and implement the bill are unknown at this time, but could be significant. Staff estimates one-time costs could be in the low- to mid-hundreds of thousands of dollars until 2024-25, including administrative staff to coordinate meeting times, assist with travel and logistics, and record meeting notes, analytical staff to conduct research and policy development, and draft the report, as well as higher-level staff time to perform strategic planning and engagement with stakeholders and the public, and to respond to public inquiries regarding the Committee's activities and recommendations. Ongoing staffing costs are likely to be relatively minor following the release of the report, but there could be additional cost pressures to implement the report's recommendations. (Aeronautics Account)

2) CARB estimates costs of $212,000 annually for 1.0 PY of staff time to support the work of the Committee, including conducting an assessment of the feasibility of including aircraft in the Low Carbon Fuel Standard. Staff notes that a full PY of staff beyond the issuance of the report is likely unnecessary. (Aeronautics Account)

3) OPR estimates costs of approximately $42,000 annually to support the Committee, including conducting research on aviation electrification. (General Fund)

COMMENTS:

Aircraft jet engines emit a mixture of carbon dioxide (CO_2), water vapor, oxides of nitrogen (NOx), particulate matter (PM), carbon monoxide, and other pollutants. 90% of the emissions from a flight occur at altitudes above 3,000 feet, with the remaining 10% being released during taxiing, takeoff, and landing. According to the U.S. Energy Information Administration, California's total 2020 jet fuel consumption was about 59 million barrels, or roughly 2.5 billion gallons. The international aviation market is responsible for about 2% of the world's greenhouse gas (GHG) emissions. Nationwide, aviation emissions make up about 13% of transportation GHG emissions. In California, aviation accounts for 1% of all transportation-related GHG

emissions. The aviation sector is considered difficult to decarbonize, and the primary alternative fuels are sustainable aviation fuels (SAF), derived from biomass sources.

Electrification of aviation. A 2016 National Academies of Sciences, Engineering, and Medicine study suggests large all-electric commercial aircraft might not become viable until mid- to late-century. However, early stages of aircraft electrification are already underway. Small-scale electric and hybrid aircraft are under development, with small e-aircraft already certified to fly. Internationally, as of February 2020, approximately 170 electric aircraft projects were underway, up 50% since April 2018. These technologies are projected to increase operational efficiency and reduce emissions and noise from a growing aviation sector.

Low Carbon Fuel Standard (LCFS). LCFS sets a declining carbon intensity benchmark for transportation fuels used in California through 2030. In 2018, CARB approved changes to LCFS that authorized alternative, or renewable, aviation fuels to generate LCFS credits; these fuels do not generate deficits like gasoline and diesel do. Producers of alternative aviation fuels are permitted to voluntarily opt into the LCFS program. In 2020, the SAF LCFS pathway generated 0.2% of all LCFS credits for that year. CARB is currently in the informal workshop process in preparation for a formal rulemaking to update the LCFS. One of the concepts under consideration is to add fossil jet fuel used in intrastate flights as a mandatory fuel, which would require those fuels to either reduce their carbon intensity to meet the standard or purchase credits from renewable fuel producers.

What is AAM? The Federal Aviation Administration defines AAM as a transportation system that transports people and property by air between two points in the United States using aircraft with advanced technologies, including electric aircraft or electric vertical take-off and landing (eVTOL) aircraft, in both controlled and uncontrolled airspace. A new generation of eVTOL aircraft have the potential to alter urban and regional aviation. Manufacturers, technology companies, and transportation providers envision the use of electric aircraft to provide cost-effective intra-city, inter-city, and regional air travel in the nation's most congested areas. There is significant global activity with many different prototype aircraft under development, some already having begun test flights.

California's activities related to AAM. Caltrans' 2020 California Aviation System Plan recognizes AAM as a key emerging technology and trend. Caltrans recently released a request for proposals for an AAM Infrastructure Readiness Study and Workplan to "incorporate AAM into its vision for a safe, accessible, low carbon, 21st century multi-modal transportation network." As a part of the study, Caltrans aims to evaluate the readiness of the state's transportation multi-modal network to incorporate AAM in a safe, sustainable, and equitable manner, and develop a three-year workplan to advance AAM at a statewide level.

Staff comments:

Due to the longer-term horizon for electrification of commercial aircraft, most of the committee duties specified by this bill focus on AAM, which is more likely to be operational in the near-term. The proposed activities of the committee related to AAM may overlap with Caltrans' AAM Infrastructure Readiness Study and Workplan. Also, Caltrans has existing authority to draft and recommend necessary legislation to advance the interest of the state in aeronautics. The author may wish to consider how the committee proposed by this bill can leverage the existing resources dedicated by Caltrans to further AAM innovation.

According to the author, "UAM, also known as AAM, is a new, innovative mode of transportation that will galvanize and modernize the future of mobility for passengers and cargo by relying on underutilized aerial transit routes. UAM will reduce the current burden on road infrastructure, decrease traffic congestion, and lower harmful emissions. This new industry will leverage innovative aerial vehicle designs and system technologies and embrace the sharing economy to enable a novel transportation service network. California must have the regulatory framework to develop of this new technology in order to compete with other states. [This bill] would create the Advanced Air Mobility and Aviation Electrification Committee, to assess current federal and state law and any potential changes needed to facilitate the development of operation electrification and infrastructure in California."

In support the California Airports Council writes, "The AAM industry is still in its early stages, but it is rapidly growing and attracting significant investment from both the public and private sectors. The development of AAM technologies is also driving innovation in areas such as electric propulsion systems, battery technologies, and autonomous systems. While there are still regulatory and logistical challenges that need to be addressed before AAM can become a mainstream transportation option, there is no doubt that it has the potential to transform the way we travel and move goods. AAM could provide a safer, faster, and more sustainable alternative to traditional ground transportation methods, helping to create more efficient and connected communities."

REGISTERED SUPPORT / OPPOSITION:

Support

Aircraft Owners and Pilots Association
Association for Uncrewed Vehicle Systems International
Association of California Airports
California Airports Council
California Association for Local Economic Development
California Manufacturers and Technology Association
Center for Biological Diversity
City of Marina
County of Monterey
Helicopter Association International
Monterey Bay Drone, Automation and Robotics Technology Initiative
Monterey Bay Economic Partnership
Mujeres En Accion
Office of Monterey County Supervisor, Chris Lopez
Overair
Rancho Cielo Youth Campus
Salinas Inclusive Economic Development Initiative
Skyports
Supernal

Opposition

None on file

Analysis Prepared by: Christine Casey / TRANS. / (916) 319-2093