

SCAG Energy and Environment Committee, Oct. 6, 2022

There was one action item on the agenda, and two informational items.

RECOMMENDED ACTION FOR EEC: The Energy and Environment Committee (EEC) voted to recommend the Regional Council (RC) adopt a Water Action Resolution of the Southern California Association of Governments (No. 22-647-3). The resolution affirms a drought and water shortage emergency in the SCAG Region and calls on local and regional partners to join together to reduce water use; improve water conservation, reuse, and efficiency; and enhance water systems health and resilience.

INFORMATION ITEMS:

1. Southern California Energy Outlook, Transition to Renewable Energy

In preparing for 2024 Connect SoCal Plan, SCAG must set a vision for the region's growth, including the future of the transportation system, housing, and other land uses. As the region grows, a sustainable and reliable energy supply will be critical. SB 100, passed in 2018, set a 2045 goal of powering all retail and state agency electricity needs with renewable and zero carbon resources, and a target of 60% renewables by 2030. An increase in decarbonization and electrification of buildings and the transportation network will bring an increased demand for storage of intermittent renewable resources. Energy providers must also plan grid resilience as the climate continues to warm. Further, the Advanced Clean Cars II Rule has mandated that 100% of new passenger vehicle sales will be zero emissions by 2035. AB 2127, passed in 2018, requires the CEC to biennially assess the electric vehicle charging infrastructure needed to meet the state goal of 5 million EVs by 2030 and reducing greenhouse gas emission to 40% below 1990 levels by 2030.

By 2045, population and economic growth will result in peak loads to the state's electrification system. As such, the energy sector will need to quickly resolve energy storage issues using sustainable and emerging technologies, to meet the state's 2030-2045 goals. Energy storage will be essential as most carbon-free generation sources are intermittent. The grid must have sufficient capacity and modernize to harness the full potential of distributed energy resources. In 2021, the CEC completed the SB 100 report¹, which evaluated the state's future energy demands. The report provides analysis of energy and infrastructure needs and associated costs. According to the report, hydro, geothermal, nuclear, and biomass will be phased out as energy sources, and a greater dependence will be placed on wind and solar. This reliance on renewable sources will result in a timing imbalance that exists between solar generation and daily peak load, also known as the "duck curve." To mitigate the "duck scale" effect and hit our decarbonation goals, energy storage will have to be constructed by a factor of eight (8), while solar and wind energy sources will have to be constructed by a factor of three (3).

To meet the state's obligations by 2045, solutions are needed for additional energy storage. Initial forecasts suggest adequate supply to meet the scaling up of electric vehicles, though continued investment in distribution and interconnection and programs to better manage load will be important. Research is being done to evaluate technologies for energy storage and integration and electric vehicles

may be part of the solution. SCAG will continue to identify and evaluate programs which promote energy resilience and provide periodic updates to the ECC.

2. Lithium-Ion Battery Reuse, Recycling and Safe Disposal - Findings from the CA Lithium-Ion Battery Recycling Advisory Group .

Alissa Kendal, Professor, Department of Civil and Environmental Engineering, UC Davis, gave a presentation covering the activities of the Lithium-Ion Car Battery Recycling Advisory Group. The committee addressed the need for sound policies to support end of life reuse, recycling, and safe disposal for the batteries in zero emission battery electric vehicles and submitted a report with policy recommendations to the state legislature earlier in 2022. The SCAG legislative platform, approved by the Regional Council on February 3, 2022, includes a principle that supports taking a life cycle approach to the development and deployment of zero emission and alternative fuel vehicles and their supporting infrastructure. This principle specifically states that for electric vehicles SCAG shall “support policies that ensure that proper battery reuse, recycling, and disposal are in place.” Dr. Kendal offered additional background and shared recommendations on this challenge.

Battery end of life management requires attention for several reasons. Zero Emission Vehicles/ZEVs have different characteristics than conventional combustion engines and a lithium-ion battery can be dangerous if disposed of improperly. The minerals and materials (often referred to as critical materials) used within a lithium-ion battery are rare and the extraction processes could be damaging to the environment and surrounding communities. Currently, the majority of critical materials are extracted overseas and California and the Nation as whole may potentially face supply issues, due to increasing global demand, uncertainty in trade agreements, and supply chain/logistical problems (as witnessed during the COVID-19 pandemic). To mitigate logistical uncertainties and environmental impacts from extracting raw materials, there is a potential to recycle and extract critical materials from retired lithium-ion batteries. In 2018, AB 2832 dictated a process for selecting participants for the composition of the Advisory Group and required submission of a report at the end of the process. As such, the Advisory Group submitted policy recommendations to the Legislature to ensure “...that as close to 100% as possible of lithium-ion batteries in the state are reused or recycled at end-of-life.” SCAG staff, Alison Linder, Senior Regional Planner, served as a committee member and chair of the Reuse Subcommittee from November 2019 – March 2022. The committee developed recommendations in four primary areas including: • Designation of end of life responsibility • Access to battery information • Economic opportunities around reuse and recycling industry development • Safe and efficient reverse logistics .