

**Session Title: Energy System Integration**

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**Abstract title: Integration of Different Clean Firm Resources for Decarbonization of California's Power System**

Decarbonizing the electricity sector is a critical step in reducing economy-wide emissions. In recognizing this, California established Senate Bill 100, which establishes a goal to reach a 100% clean energy grid by 2045. This analysis shows the value of clean firm resources in cost-effective decarbonization of the electricity sector in California. Various clean firm resources, including nuclear, gas with carbon capture and storage, and zero carbon fuels, are all resources that result in cost-effective decarbonization. Furthermore, having multiple clean firm resources in the system results in the most cost-effective system relative to having a single or no clean firm resource.