



CA Grid Benefits from Electrification of Rideshare/Carshare EVgo California DCFC Load Profile Analysis

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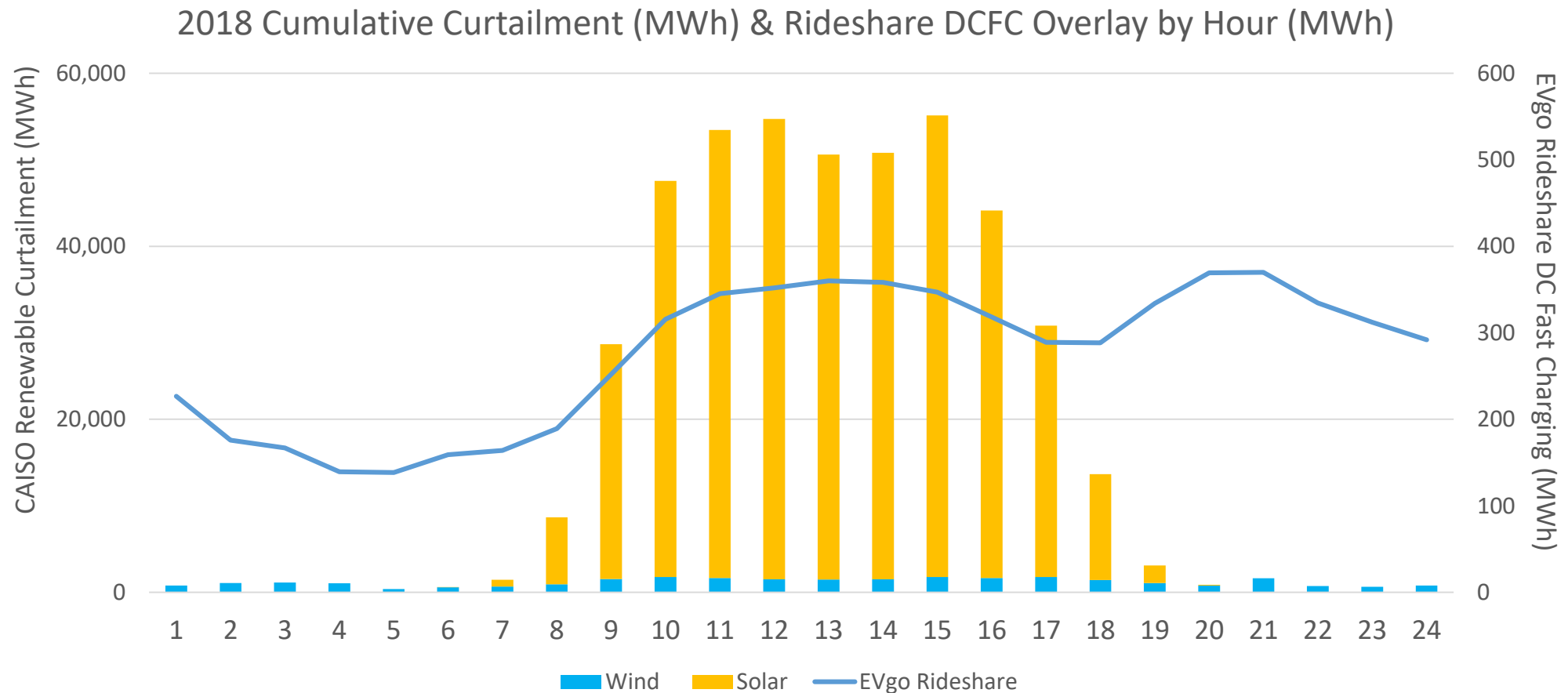
2018 Rideshare Fast Charging: Material CAISO Grid Benefits

DCFC Charging Avoided GWh of 2018 Solar Curtailment

- CAISO concludes EV charging supports maximum renewable potential by:
 - “integrating electric vehicles and encouraging owners to charge when supply is high”
 - Critical adjustment needed: EV Owners => Drivers, including Lessors + Renters for Rideshare
- EVgo 2018 data: CAISO grid benefits from light duty fleet/rideshare
 - Strong alignment between midday EVgo rideshare fast charging and CAISO solar curtailment
 - Alignment without price signals suggests opportunity for further load profile optimization
 - Approximately 25 MM rideshare miles fast charged; ~1/3 of EVgo DCFC delivered GWh
- EVgo: Largest public fast charging (DCFC) network in USA & California
 - DCFC Partner for GM’s Maven Gig EV light duty fleet: 2017+
 - DCFC Partner for local rideshare/carshare: WaiveCar + Others
 - DCFC Partner for Lyft’s Express Drive EV light duty fleet: 2019+

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Sources: CAISO Curtailment http://www.caiso.com/Documents/Wind_SolarReal-TimeDispatchCurtailmentReportDec31_2018.pdf
 Rideshare, 2018 EVgo fast charging operational data



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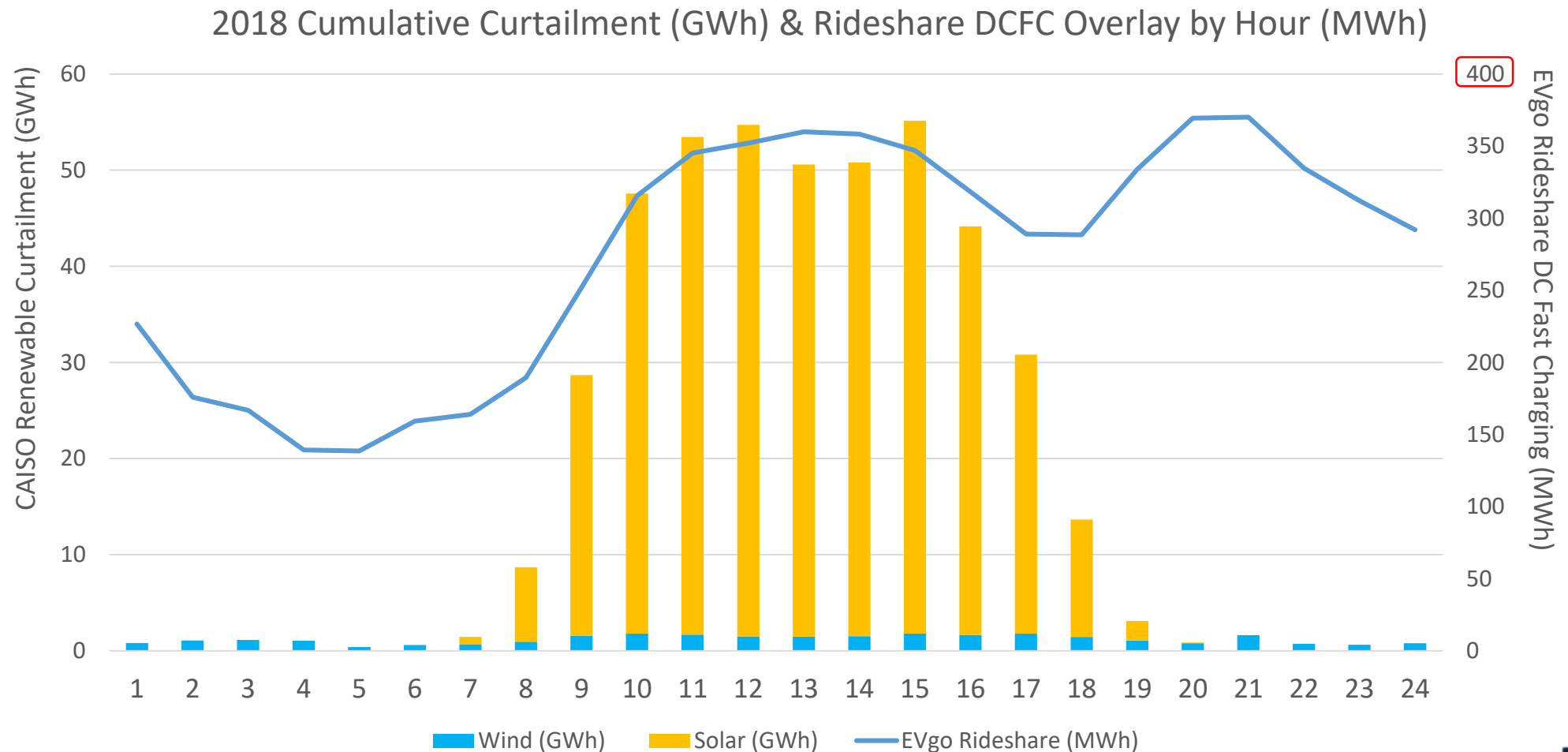
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- EVgo: Largest operational data set for CA & US electrified rideshare/carshare
 - 2018 is first full year of material deployment of rideshare/carshare on EVgo Network
 - Growth of rideshare in 2018 created congestion on EVgo's public network in urban CA
 - New evidence that relieving congestion improves EVgo's fast charging rideshare load profile
- Rideshare drivers: time charging = lost revenue, so DCFC is primary charging choice
 - Rideshare drivers = 3-7 times the vehicle miles traveled (VMT) weekly v. personal use
 - 2018 EVgo GWh = 1/3 rideshare due to high VMT/rideshare vehicle + high % of EVgo charging
 - Maven Gig Driver Data: 85% of drivers renting EVs from Maven have no access to home charging
 - Preferred charging times: midday solar hours + before AM / after PM rush hour
- Rideshare EVgo DCFC charging strongly aligned with CAISO duck curve / solar curtailment
 - 2018 EVgo charging reduced midday solar and wind curtailment by GWhs
 - >45% of Rideshare charging during 9AM-3PM solar hours; >30% during nighttime hours 8PM-4AM
 - Rideshare drivers prefer to drive during PM rush hour reducing grid impact during 4-7 PM duck
 - Rideshare grid benefit during midday duck belly also reduces ramp needs during duck neck



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Scale change highlights curve fit

Sources: CAISO Curtailment <http://www.caiso.com/Documents/WindSolarReal-TimeDispatchCurtailmentReportDec312018.pdf>
 Rideshare, 2018 EVgo fast charging operational data

