## Smart At-Home Charging: Telematics Load Shaping

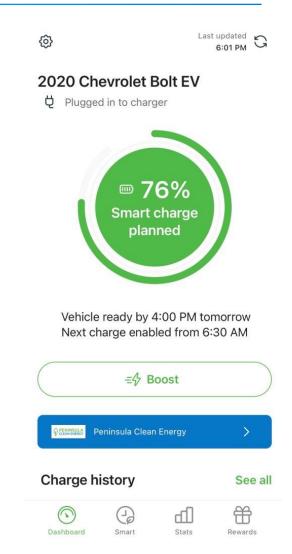
Hardware-free smart charging for grid and RE benefits

Technology: in vehicle connected car systems

Benefits: Smart charging (daily for RE alignment or DR), charging data aggregation, submetering (future).

Status: Several pilots in progress (inc. PCE), multiple companies offering services, fractured automaker OEM compatibility.

RD&D needs: communications standardization, accuracy testing, coms improvements from automakers.



## Smart At-Home Charging: Level 1 for MFH

Low cost "right sized" charging

Technology: L1 outlets with billing/access controls

Benefits: Low cost (~\$2K/installed unit in PCE program), low power, massive scaling potential

Status: Commercially available, 3 companies in market, early deployment.



RD&D needs: additional demo of low-cost EV charging options, cost reduction goal

Peninsula Clean Energy