The demand for vehicle charging will require large investments in power distribution, transmission, and generation. However, this demand is often also flexible in time, and can be actively managed to reduce the needed investments, and to better integrate renewable electricity. Harnessing this flexibility requires forecasting and controlling electric vehicle charging at thousands of stations. This paper addresses the problem of forecasting and management of the aggregate flexible demand from tens to thousands of electric vehicle supply equipment (EVSEs). First, it presents an equivalent time-variant storage model for flexible demand at an aggregation of EVSEs. The proposed model is generalizable to different markets, and also to different flexible loads. Model parameters representing multiple EVSEs can be easily aggregated by summation, and forecasted using autoregressive models. The forecastability of uncontrolled demand and storage parameters is evaluated using data from 1341 non-residential EVSEs located in Northern California. The median coefficient of variation (CV) is as low as 24% for the forecast of uncontrolled demand at the highest aggregation and 10-15% for the storage parameters. The benefits of aggregation and forecastability are demonstrated using an energy arbitrage scenario. Purchasing energy day ahead is less expensive than in the real-time market, but relies on an uncertain forecast of charging availability. The results show that the forecastability significantly improves for larger aggregations. This helps the aggregator make a better forecast, and decreases the cost of charging in comparison to an uncontrolled case by 60% with respect to an oracle scenario.