

DCFC Load Factors

Market Maturity and Rate Implications

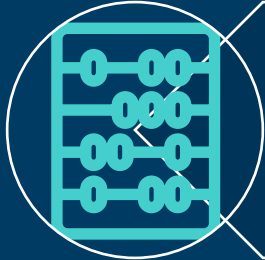
Alaska EV Working Group,
Technical Session

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Setting the stage: if you take away one message...(okay, three)



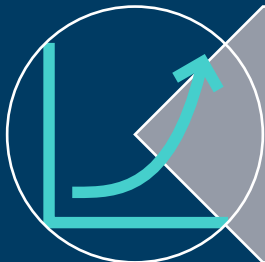
DCFC critical to building market confidence

- Small portion of total kWh; Big impact on EV transition
- Think in systems → DCFC as part of broader charging ecosystem



Load factors will vary widely with location

- What will an 'average' Alaskan DCFC load factor be?
- Recognize that some stations will reach high utilization rates, yet many will not



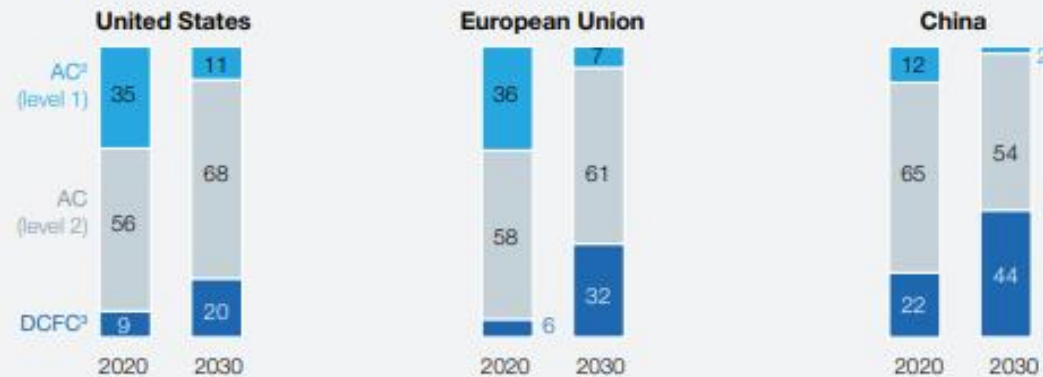
Enabling DCFC growth requires acknowledging early-stage market challenges

- Setting relatively high assumed load factor provides a longer runway for EVSPs as the market develops

Most EV charging will not be at DCFC stations

Level 1 and Level 2 charging will likely remain the dominant source of charging energy demand.

Energy demand by charging technology, % of kilowatt-hours¹, home-centered scenario



¹Figures may not sum to 100%, because of rounding.

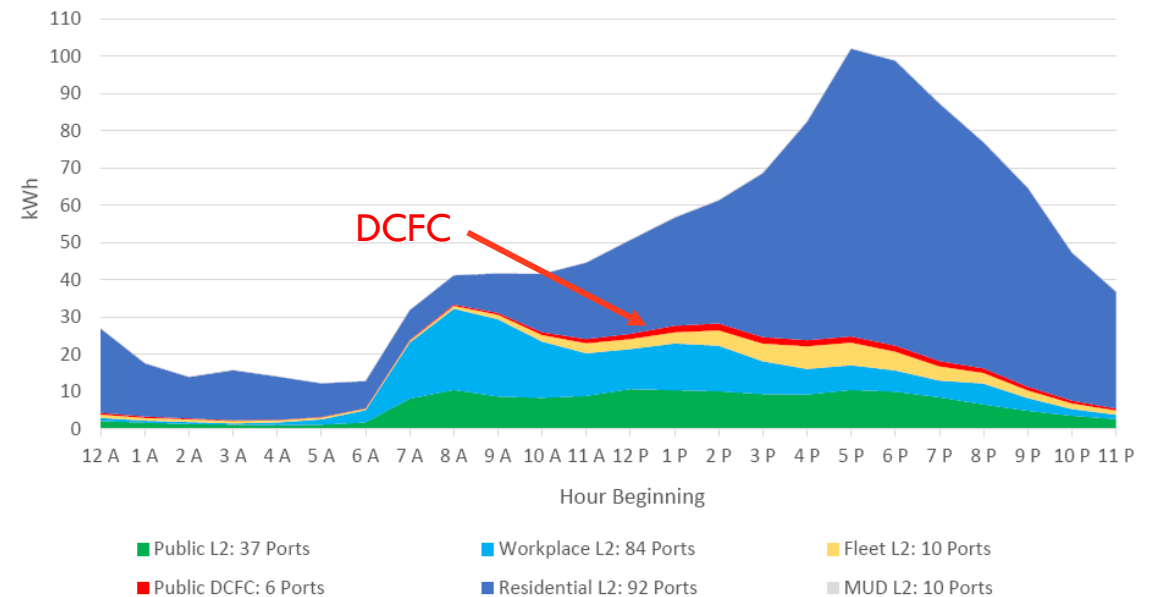
²Alternating current.

³Direct current fast charging.

McKinsey&Company | Source: McKinsey analysis

Source: 2018 McKinsey analysis, available [here](#).

Average Daily Energy Consumption Across Avista EVSE Network, 2017-2019



Source: Avista EV Supply Equipment Pilot Final Report, 2019, available [here](#).

Why do we care about DCFC load factors?

What questions must we answer to set an assumed level?

Utilities and regulators
grappling with how best
/ how much to support
DCFC business model

Questions we must answer:

1

What are we seeing in
other geographies?

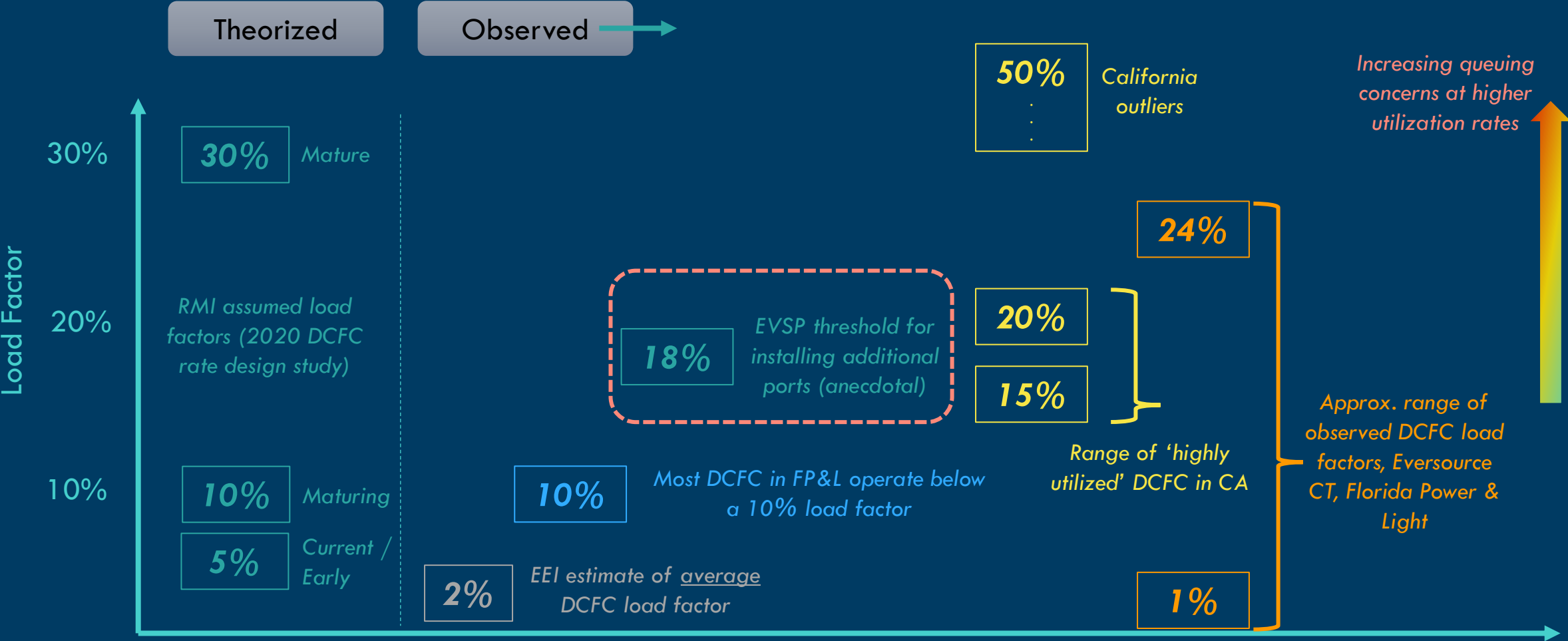
2

What will EV adoption
look like in Alaska?

3

What does this imply
about assumed load
factor for DCFC rates?

What do reference load factors tell us about market maturity?



What kinds of DCFC transition (inception) rates are being piloted in other markets?

Eversource (CT)

EV Rate Rider

- Volumetric alternative to demand charge
- Average kWh equivalent charged for each demand component
- 3-year extension approved April 2019

SDG&E (CA)

EV-HP

- Subscription rate, no demand charge
- No overage fee, although potential to bump to higher subscription level
- Distinct pricing for demand above/below 150 kW

FP&L (FL)

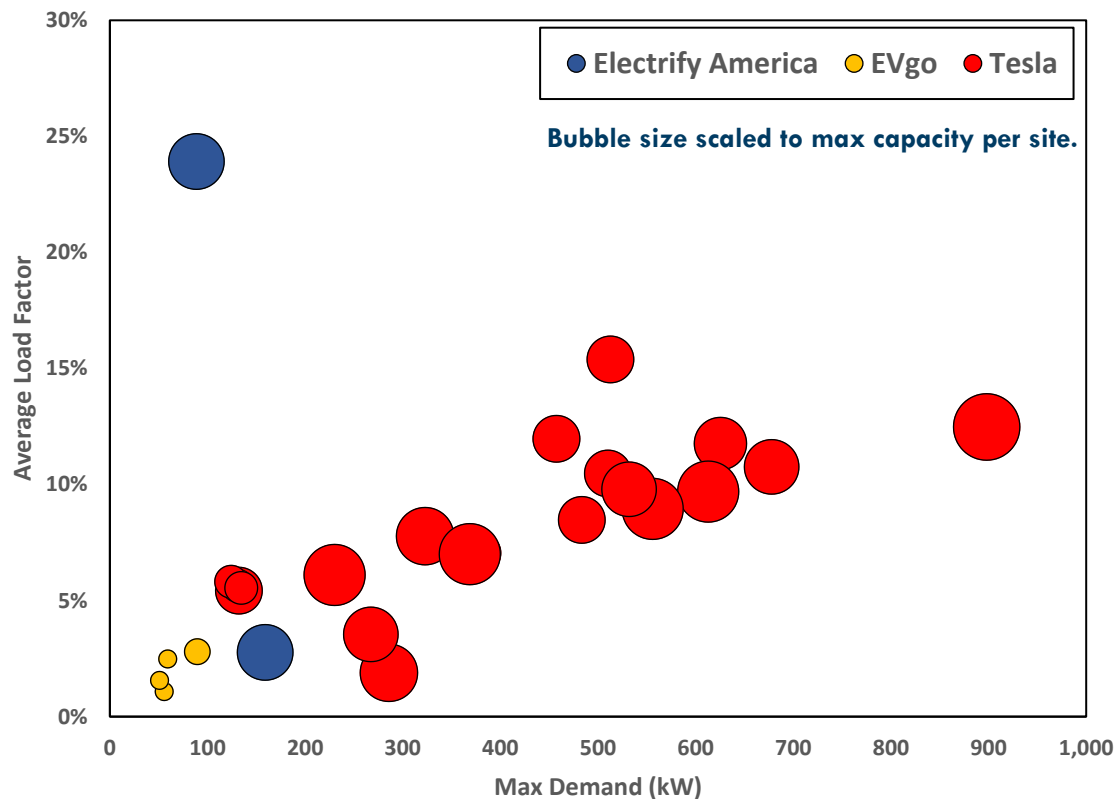
Demand Limiter

- Demand assessed as lesser of a) measured demand, b) kWh / 75 hours
 - Effectively 10% load factor assumption
- 5-year pilot program, began late 2020

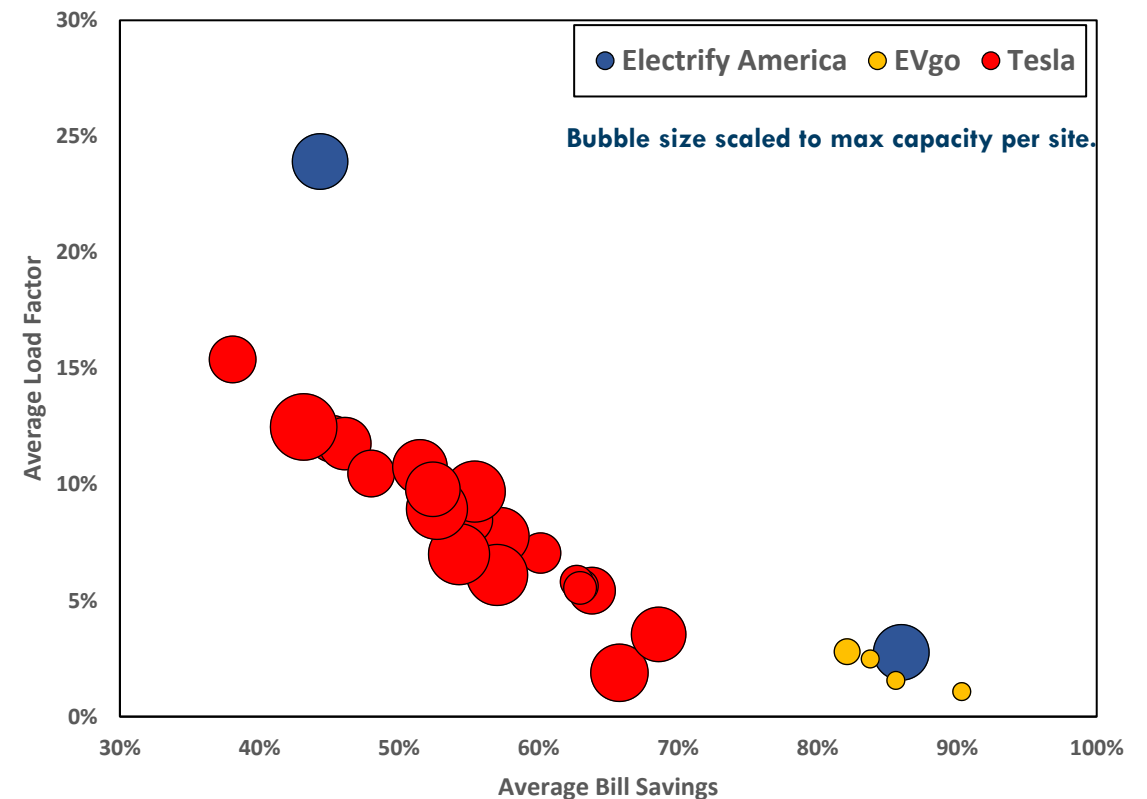
DCFC Stations in Eversource (CT) Service Territory

EV Rate Rider

Maximum Demand and Load Factor



Average Bill Savings (estimated) and Load Factor



Closing thoughts: remember the three takeaways?



DCFC will be an essential part of the charging ecosystem

Small by volume of kWh yet crucial as a market enabler



Utilities and PUCs have a critical role to play in supporting EV growth through DCFC inception rates

In Alaska, a relatively high load factor assumption will provide confidence and longer runway for EVSP business models



Load factors range widely based on specific location, market maturity, EVSP

Many stations will take years to reach 'high' utilization rates (if ever)

Thank you!

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Appendix



DCFC Charging Session Characteristics, Avista 2019

