Observations of DCFC Modeling
Electric Vehicle Working Group
Executive Summary

Demand charge relief is immediately necessary

Objective:
Economics for DCFC ownership is an extremely challenging business case in New York even before considering demand charges and likely impossible with demand charges.

This presentation will show the economics of the business model with a conventional demand charge the way that New York generally calculates demand.

Presentation:
- Economics of DCFC
- Probability of Maximum Site Demand
- IRR of Minimum Viable Network
- Conclusions
Electrification of transportation plays an essential role in bringing value to NYS ratepayers and helping achieve the State’s environmental goals. New York’s residential rates relative to gasoline prices bring value to New York’s electric vehicle owners. A 40% reduction in GHG by 2030 is extraordinarily challenging without a decrease in transportation emissions. Increased overnight loads increase capital utilization which leads to savings for ratepayers. Electrification is a critical enabler of achieving these targets:

- Reducing transportation costs for commercial, residential, and industrial customers.
- Reducing both local air pollution and reaching the state’s environmental goals.
- Increasing capital utilization ensures New York maintains an affordable and clean energy supply.
Gas parity doesn’t cover fixed operating expenses even without demand charges

Assumptions

• Gas parity is calculated to be approximately 30 cents per kWh
• Net Variable Operating Margin is sales of electricity net of cost of electricity.
• Fixed Operating Expenses includes the labor or contractual service agreements to maintain a DCFC
Sales price above gas parity generates positive operating margin sooner but at the cost of chilling EV adoption

- Higher than gas parity disproportionately impacts rideshare as well as LMI communities.
- Appearance of expensive supply could discourage mainstream adoption.
- The sales price is modelled at 50 cents per kWh or $5 eGallon equivalent.
Increased operating margin from sales price above gas parity does not generate enough revenue to recover depreciation.

- Investment lost is nearly 40% even before demand charges.
- Starting around 10% utilization, DCFC begins to recover both operating expenses and generate a return on an return of investment.
Demand charges likely make economics of DCFC impossible

- Investment lost is nearly 40% even before demand charges.
- Starting around 10% utilization, DCFC begins to recover both operating expenses and generate a return on an return of investment.
Assuming demand charge relief, IRR is only positive if the average 10 YR utilization is above 17%

Early developers face significant market risks and derisking DCFC investment is necessary.
Probability of reaching maximum demand is high even at low utilization

Maximum site demand is significantly more certain starting above 5% utilization for a single 15 minute period
### Conclusion

**Demand charge relief is immediately necessary but is not sufficient**

1. **Long term utilization**
   - Demand charge relief is only temporarily necessary because the market is maturing and in the long term utilization will be closer to a traditional load profile as the market matures.

2. **How to increase utilization**
   - Beyond the sticker price, two major barriers inhibit adoption; infrastructure and awareness.
   - Other ways to encourage utilization is mass transit and car services.

3. **Additional enablers**
   - Demand charge relief is an urgent immediate need but there are other necessary steps to allow the market to mature.
   - Make ready programs, standardized interconnection procedures, maps