New Jersey Electric Vehicle Infrastructure Ecosystem 2020 Straw Proposal Stakeholder Meeting

Wednesday, June 3, 2020
10:00 a.m. – 3:30 p.m.
Via webinar

@NJBPU

New Jersey Board of Public Utilities

Meeting Guidelines

- Submit questions for the discussion portion of each panel via the question box. Include your name and organization.
- During the discussion portion of each panel, a moderator will call out the name of a person with a question.
- Time permitting remarks can be made at the end of a panel by using the “raise hand” function. Please limit your remarks to 3 minutes.
- All participants will be muted throughout the webinar, except when asking questions or making remarks.
- Everyone is encouraged to participate; we will take as many questions and comments as time permits.
- Listen to and respect other points of view.

Panel 1: How to best expand the EVSE infrastructure and encourage charger ready investment

- Establishing the appropriate role for the EDCs and EVSE Infrastructure Companies.
- Identifying communities where market forces alone may not result in the desired level of EV infrastructure.
- Establishing cost recovery for EDC investment in making locations Charger Ready.

Panelists

Phil Jones – Alliance for Transportation Electrification

Scott Fisher – Greenlots

Jigar Shah – Electrify America

Michael Krauthamer – EV Advisors, LLC

Karen Reif – PSE&G

Stefanie Brand – NJ Division of Rate Counsel

Ian Leonard – IBEW NJ

Alliance for Transportation Electrification

Charger Ready Investment

Charging Station

Transformer

Meter, CT,
Connection Cabinet

Service
Pedestal

Distribution

Service

Conduit /
Conductor

Conduit /
Conductor

Utility owned and maintained

Potential for utility to
own and maintain

NJ EV Infrastructure Straw Proposal
June 3, 2020

Jigar J. Shah
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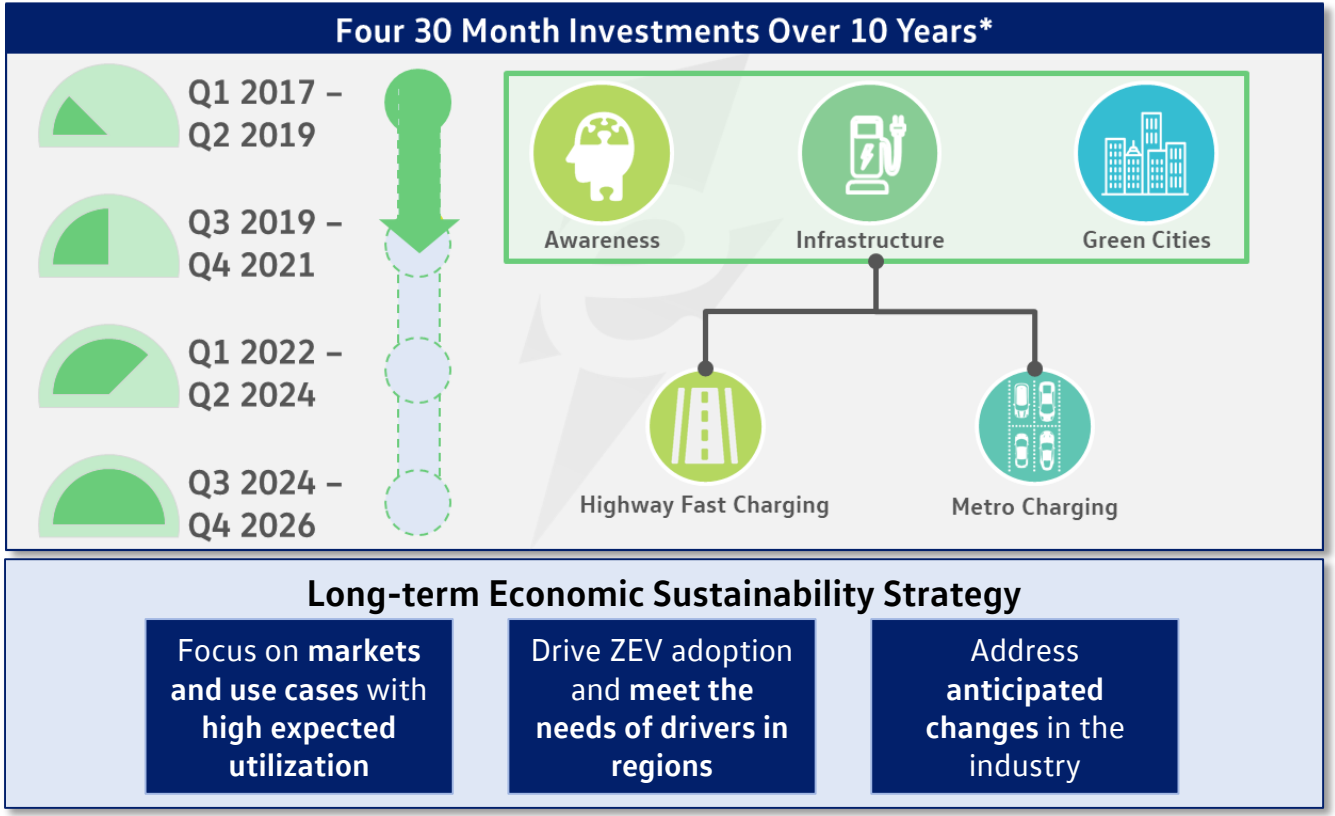
electrify america

Established in 2017, Electrify America is investing $2 billion to support the charging needs of EV drivers in the U.S.

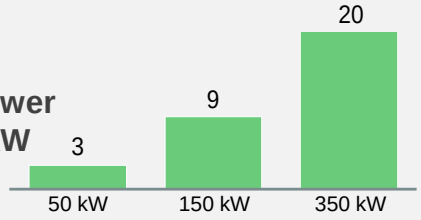


High-powered charging provides a consistent, convenient, and fast experience for all customers

CCS CHAdeMO **Dual connector**

Liquid-cooled cables

Charge power up to 350kW



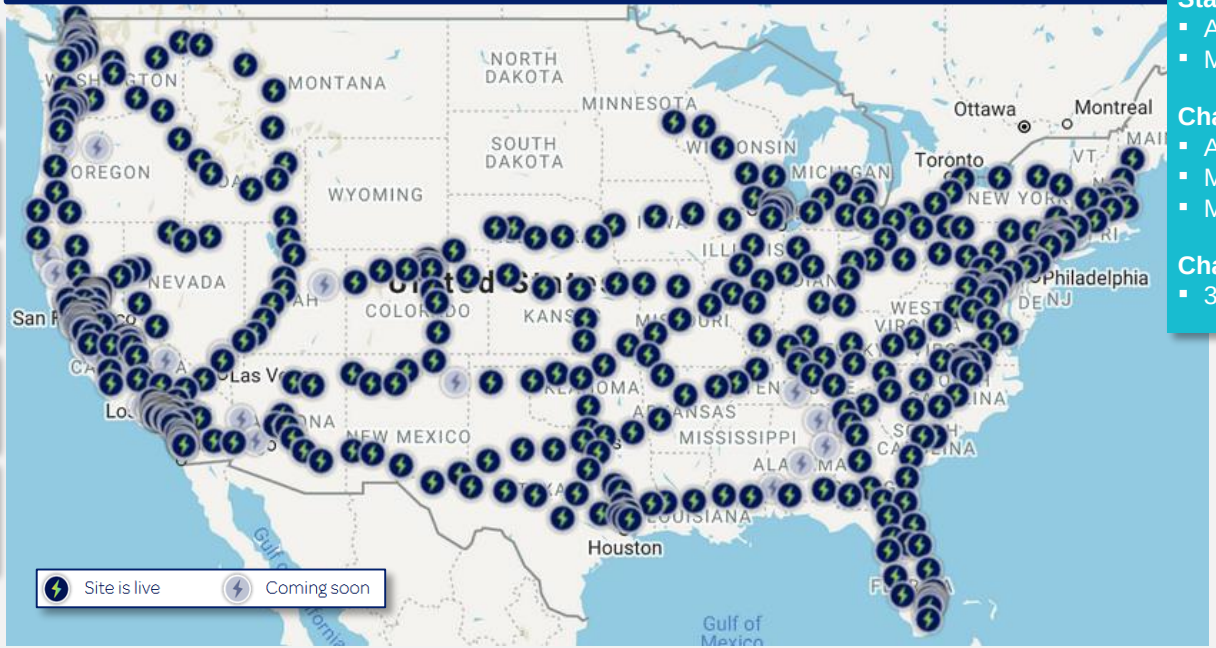
Miles of range* per minute charged by DCFC power

*Assumes 3.5Miles per kWh

Over 425 stations are now open with an additional 100 in development nationwide

- 42 states
- 17 large metros
- 86 metros*
- 484 stations
- 2,000+ DC Fast Chargers

Electrify America – Cycle 1 DCFC Deployment Progress



Station spacing:
- Average: 70 miles
- Maximum: 120 miles

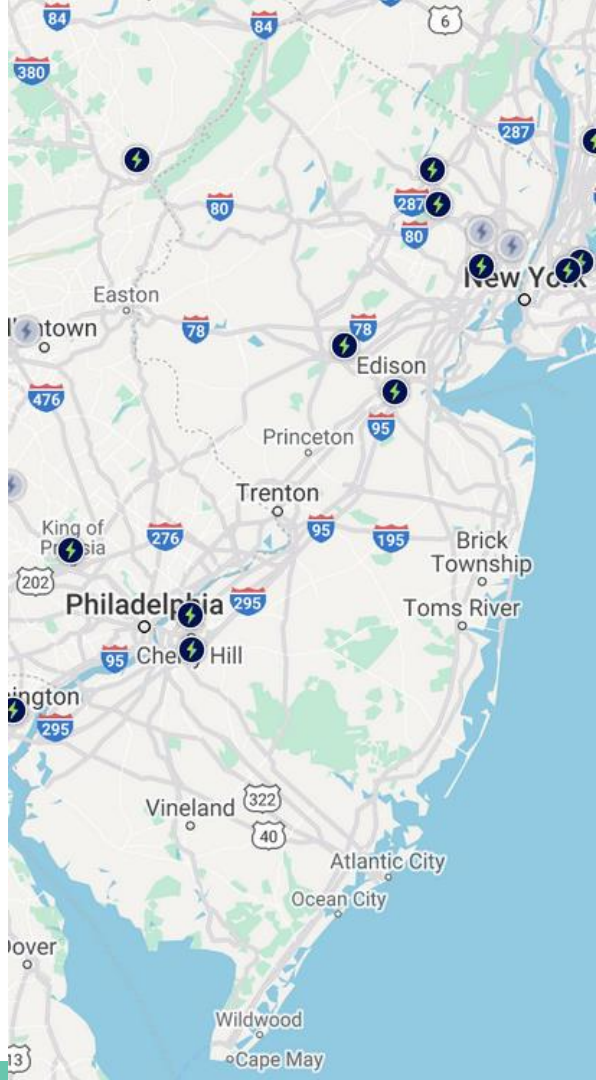
Chargers per site:
- Average: 5
- Minimum: 4
- Maximum: 10

Charging speed
- 3 to 20 miles per minute

In New Jersey, Electrify America currently operates 7 locations with 33 DCFC

City / Configuration	Total DCFC kW	EDC	Peak Demand Charge / kW	Monthly Demand Charge Exposure
Bridgewater (3 X 50KW + L2)	150	PSE&G	$27.5318*	$4,130
Cherry Hill (3 X 150KW + L2)	450	PSE&G	$27.5318*	$12,389
Pompton Plains (3 X 50KW + L2)	150	JCP&L	$6.630^	$928
East Brunswick (8 X 150KW + 2 X 350KW)	1900	PSE&G	$33.5672*	$63,778
Kearny (3 X 150KW + L2)	450	PSE&G	$27.5318*	$12,389
Somerdale (6 X 150KW + 2 X 350KW)	1600	PSE&G	$33.5672*	$53,708
Fairfield (3 X 150KW + L2)	450	PSE&G	$27.5318*	$12,389

NJ Demand Charges create a perverse incentive for DCFC Infrastructure Investment



*PSE&G Tariff effective June 1, 2020; Includes LPL Summer Demand Charge of $8.9495/kW + BGS-RSCP (<500 kW) / CIEP Capacity Charge of $5.6474/kW or $11.6828/kW + BGS Transmission Charge of $12.9349/kW (https://nj.pseg.com/aboutpseg/regulatorypage/-/media/6A04206002AF417EA4857F50778FE6A0.ashx)

^JCP&L Tariff effective February 1, 2020; Includes GS Distribution Demand Charge of $6.63/kW in excess of 10 kW (https://www.firstenergycorp.com/content/dam/customer/Customer%20Choice/Files/New%20Jersey/tariffs/BPU-12-Part-III-Effective-3-1-2020.pdf#Page=11)

Electrify America's Principles for Charger Ready

ACCESS

First, there must be public vehicle charging options that are available ubiquitously to all drivers, especially for the significant population that will not have access to workplace or residential chargers.

FAIRNESS

Second, in keeping with the above, effective utility rates for electricity delivered to public charging stations should be commensurate with if not lower than those for residential charging should there be equitable incentives for fuel-switching between those that have access to charging at home and those that do not; and

EXPERIENCE

Third, the speed of charging an EV should mirror if not improve upon that of refueling a gas/diesel powered vehicle, requiring higher power level charging infrastructure.

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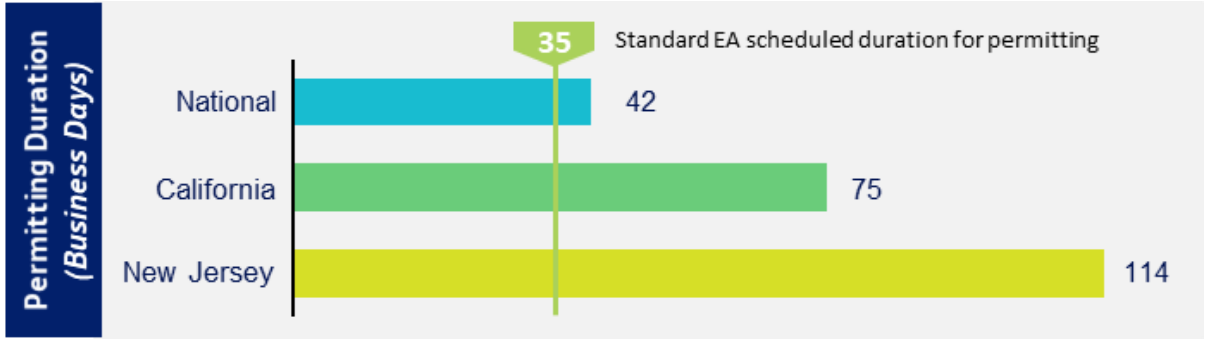
Addressing Access for Charger Ready:
New Jersey has the longest permitting timeframes in the US



EV charging stations are often not addressed in New Jersey municipal permitting codes, and therefore are considered a “**prohibited use**.”

Developers face long delays in getting stations approved through planning and zoning boards, often requiring use variance, parking variance, etc.

Causes of permitting delay

Inconsistent or unclear permitting requirements

Multiple rounds of review and comment

Procedural delays

"Prohibited use" categorization

Addressing permitting delays will be necessary for New Jersey to meet its electric vehicle and infrastructure deployment goals.

DCFC "Charger Ready" & Public/Private Role – A Holistic View

Shared Responsibility Model

1. DC fast charging is crucial to achieve NJ goal of 330,000 EVs by 2025

- Critical role of EDCs to streamline functions that cannot be served by the competitive market: Permitting, Line Extensions, Make-Ready
- Competition spurs best outcomes; Scaled incentives / Reverse solicitations can drive private investment while minimizing ratepayer risk

Operational Expenses

2. Long-term rate design should address economic viability & fuel switching incentives

~$2.72/kWh Effective Cost >$19/gallon*

- Recovery of only marginal cost to serve to reach state infrastructure goals

Charges	PoD ID:	Rate - LPLS
Delivery		
Distribution Charge	583 kWh @ $0.00493996	$2.88
Distribution Charge	448 kWh @ $0.00493303	2.21
Annual Demand Charge	70.1 Kw @ $3.7617689	263.70
Societal Benefits	1031 kWh @ $0.0084384	8.70
Service Charge		370.81
Sub-Total Delivery		**$648.30**
Supply		
Basic Generation Charge	125.000 kWh @ $0.04568000	5.71
Basic Generation Charge	458.000 kWh @ $0.05192139	23.78
Basic Generation Charge	87.000 kWh @ $0.05425287	4.72
Basic Generation Charge	361.000 kWh @ $0.06049861	21.84
Transmission Charge	110.000 Kw @ $12.9349090	1,422.84
Generation Charge	131.174 Kw @ $5.14720905	675.18
Sub-Total Supply		**$2,154.07**
Total electric charges		**$2,802.37**

DER Opportunities & Policy

3. DERs can support state goals with defined policies to facilitate investment

February 2019

Electrify America announces plans to add ~ 210 kW / 350 kWh energy storage at over 100 locations

https://media.electrifyamerica.com/en-us/releases/48

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* Assuming 3.5 miles/kWh and 24.9 miles/gallon


Thank you.
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america

Utility's Role

Utilities are best suited to implement Electric Vehicle programs because of their distinctive experience:

- Established customer relationships and a trusted brand;
- The ability to provide on-bill repayment to customers;
- Access to customer usage data;
- Amortizing costs over expected life will reduce bill shock and have the highest correlation of cost recovery to benefits;
- Expertise and experience in running infrastructure, energy efficiency and solar programs.

PSE&G's Prior EV Experience

PSEG Programs (started in 2014)

- Workplace Charger Program - 45 ports
- Level 2 chargers - 145 chargers
  - Hospitals, colleges, multi-family, government parking deck

PSEG LONG ISLAND Programs (started in 2019)

- Workplace Charger Program - 105 ports
- Residential Smart Charger Program - 955 chargers
- DC Fast Charger Program - 115 ports

PSE&G EV Filing - (4 Sub programs)

Residential Smart Charging	Level 2 Mixed-Use Charging	Public DC Fast Charging	Electric Vehicle Innovation
Single-Family Homes	Multi-Family, Municipality, Workplace	Travel Corridors	Schools, Ports, Airports