2021 Utility 2.0 and Energy Efficiency Plan

MIKE VOLTZ – DIRECTOR OF ENERGY EFFICIENCY
PSEG Long Island’s Utility 2.0 vision is to be a customer-centric, innovative, and forward-looking utility that is dedicated to a clean, reliable, and resilient energy system. PSEG Long Island will achieve this vision by empowering its customers through advanced metering infrastructure (AMI), exploring new offerings, and evolving to become the utility of the future, including performing functions of the Distributed System Platform (DSP), for Long Island and the Rockaways.

1. **Empower customers through AMI and data analytics**
   - Empower customers with safe, reliable, and increasingly digital and automated investments that enable the evolution to the DSP and offer customers choice and solutions.

2. **Explore new innovative offerings**
   - Explore new energy efficiency (EE) and distributed energy resources (DER) projects to demonstrate value to both the customers and the utility, inform future rate design and business models, and aid customer adoption of advanced technologies in support of its mission and state policies.

3. **Evolve into a customer-centric DSP**
   - Evolve the utility to become the Distributed System Platform (DSP) through the customer engagement and grid planning and operations functions of the utility, and by enabling foundational capabilities and technology platforms.

PSEG Long Island’s customers want to be a part of the energy industry transformation and desire improved reliability, resiliency, and cost-effectiveness of the energy system and customer programs.
BETWEEN 2018 AND 2020, PSEG LONG ISLAND BEGAN IMPLEMENTING 28 INITIATIVES ACROSS THE THREE PATHWAYS

<table>
<thead>
<tr>
<th>Empower Customers</th>
<th>Explore New Offerings</th>
<th>Evolve into a DSP</th>
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</thead>
<tbody>
<tr>
<td>Solutions that empower customers by improving the way they interact with their energy provider and offer tools and choice for DER solutions and payment options</td>
<td>Pilots that test how new system capabilities and customer resources can monitor and interact between them to improve system efficiency and reduce greenhouse gas emissions</td>
<td>Studies, pilots, and foundational capabilities to enable the DSP, with efficient management of grid assets and quicker and more cost-effective DER interconnection</td>
</tr>
<tr>
<td>AMI Technology and Systems</td>
<td>BTM Storage with Solar</td>
<td>CVR Program</td>
</tr>
<tr>
<td>AMI-Enabled Capabilities</td>
<td>Electric School Bus V2G Pilot</td>
<td>DER Visibility Platform</td>
</tr>
<tr>
<td>Customer Engagement</td>
<td>Electric Vehicle (EV) Program</td>
<td>Hosting Capacity Maps</td>
</tr>
<tr>
<td>C&amp;I Demand Alert Pilot</td>
<td>Enhanced Marketplace</td>
<td>Interconnection Online Application Portal</td>
</tr>
<tr>
<td>Data Analytics</td>
<td>EV Make-Ready Program</td>
<td>Locational Value Study</td>
</tr>
<tr>
<td>Energy Concierge Pilot</td>
<td>NWS Planning Tool</td>
<td>Utility of the Future</td>
</tr>
<tr>
<td>Next Generation Insights Pilot</td>
<td>NWS Process Development</td>
<td>Utility-Scale Storage – Miller Place</td>
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<tr>
<td>On-Bill Financing Pilot</td>
<td>Super Savers: NWS with Targeted EE</td>
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<tr>
<td>Program Implementation Support</td>
<td></td>
<td></td>
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<tr>
<td>Rate Modernization</td>
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# Utility 2.0 Initiatives Contribute to Achieving New York State’s 2025 Clean Energy Targets

<table>
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<tr>
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<th></th>
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</thead>
<tbody>
<tr>
<td><strong>Statewide goal (2025)</strong></td>
<td>850,000</td>
<td>1,500 MW</td>
<td>185 TBtu</td>
<td>5 TBtu</td>
<td>6,000 MW</td>
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<tr>
<td><strong>LI portion of goal (2025)</strong></td>
<td>178,500</td>
<td>188 MW</td>
<td>7.85 TBtu</td>
<td>30,000 installations (1.15 TBtu)</td>
<td>750 MW</td>
</tr>
<tr>
<td><strong>LI actuals (through 2020)</strong></td>
<td>18,852</td>
<td>~14 MW (~3.78 MW queued)</td>
<td>2.29 TBtu</td>
<td>5,955 installations (0.218 TBtu)</td>
<td>~650 MW</td>
</tr>
</tbody>
</table>

**Approved initiatives**
- Electric Vehicles Program
- Electric School Bus V2G Pilot
- Enhanced Marketplace
- EV Make-Ready Program
- Rate Modernization
- BTM Storage with Solar
- Utility Storage – Miller Place
- Enhanced Marketplace
- On-Bill Financing Pilot
- Energy Storage Bulk Solicitation
- Rate Modernization
- Energy Efficiency Programs (EEDR Plan)
- Super Savers NWS
- On-Bill Financing Pilot
- Enhanced Marketplace
- Energy Efficiency Programs (EEDR Plan)
- Heat Pump Controls Pilot
- On-Bill Financing Pilot
- Enhanced Marketplace
- BTM Storage with Solar
- Hosting Capacity Maps Stages 1-2
- Interconnection Online Application Portal (IOAP) Phase I
- Hosting Capacity Maps Stage 3
- DER Visibility Platform

**Proposed initiatives (2022 start)**
- EV Make-Ready Program – (expansion)
- Suffolk County Make-Ready Pilot
- Bucket Truck Electrification Plan
- Connected Buildings Pilot
- Energy Efficiency Programs (EEDR Plan)
- Energy Efficiency Programs (EEDR Plan)
- Increasing Hosting Capacity Study
- Rate Modernization – Green Rate

**Potential Future Initiatives (2023-2025 start)**
- Fleet Electrification
- Light-Duty V2G
- Utility Storage (Further Locations)
- Microgrid
- Energy Efficiency Programs (EEDR Plan)
- Next Best Action
- Multifamily/Low-to-Moderate Income (LMI) Financing
- Energy Efficiency Programs (EEDR Plan)
- Next Best Action
- Multifamily/Low-to-Moderate Income (LMI) Financing
- Enhanced Distribution Modeling
PROPOSED INVESTMENTS FOR 2022
(TO BE INCLUDED IN THE 2021 UTILITY 2.0 PLAN)

- Four new proposed initiatives: small-scale pilots and studies supporting state clean energy goals
- EV Make Ready Program: expanded through 2025, with budget increase of ~$88 million, B/C ratio of 1.19
- Rate Modernization: addition of Green Rate IT and customer engagement costs, with budget increase of ~$2.5 million

<table>
<thead>
<tr>
<th>Type</th>
<th>Name</th>
<th>Type</th>
<th>Capital 2022-25 ($M)</th>
<th>O&amp;M 2022-25 ($M)</th>
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</thead>
<tbody>
<tr>
<td>Proposed Initiatives</td>
<td>Connected Buildings Pilot</td>
<td>Pilot</td>
<td>-</td>
<td>1.19</td>
</tr>
<tr>
<td></td>
<td>Suffolk County Bus Make-Ready Pilot</td>
<td>Pilot</td>
<td>0.60</td>
<td>0.45</td>
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<tr>
<td></td>
<td>Bucket Truck Electrification Plan</td>
<td>Study</td>
<td>-</td>
<td>0.10</td>
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<tr>
<td></td>
<td>Increasing Hosting Capacity Study</td>
<td>Study</td>
<td>0</td>
<td>0.06</td>
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<tr>
<td>Expanded Initiatives</td>
<td>Rate Modernization</td>
<td>Program</td>
<td>1.19</td>
<td>1.32</td>
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<tr>
<td></td>
<td>EV Make-Ready Program</td>
<td>Program</td>
<td>62.39</td>
<td>25.72</td>
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<td></td>
<td><strong>Total</strong></td>
<td></td>
<td><strong>64.18</strong></td>
<td><strong>28.4</strong></td>
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</table>
## Summary of 2022 Energy Efficiency and Demand Response Plan

<table>
<thead>
<tr>
<th>Program</th>
<th>Savings (MMBtu)</th>
<th>Savings (MWh)</th>
<th>Program Budget ($M)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy Efficient Products</td>
<td>612,027</td>
<td>206,010</td>
<td>24.4</td>
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<tr>
<td>Home Comfort</td>
<td>129,673</td>
<td>2,776</td>
<td>11.5</td>
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<tr>
<td>REAP (Low-Income)</td>
<td>5,953</td>
<td>2,361</td>
<td>1.35</td>
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<tr>
<td>Home Performance</td>
<td>31,917</td>
<td>2,633</td>
<td>4.56</td>
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<tr>
<td>Multifamily</td>
<td>2,423</td>
<td>437</td>
<td>0.25</td>
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<tr>
<td>All-Electric Homes</td>
<td>560</td>
<td>17</td>
<td>0.05</td>
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<tr>
<td>Commercial Efficiency</td>
<td>262,559</td>
<td>82,757</td>
<td>32.4</td>
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<tr>
<td>HEM (Behavioral)</td>
<td>101,952</td>
<td>29,881</td>
<td>2.70</td>
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<tr>
<td>Pay for Performance</td>
<td>606</td>
<td>178</td>
<td>0.20</td>
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<tr>
<td><strong>Total, Budget Components with Programmatic Savings</strong></td>
<td><strong>1,147,670</strong></td>
<td><strong>327,049</strong></td>
<td><strong>77.43</strong></td>
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<tr>
<td>DLM Program</td>
<td>N/A</td>
<td>N/A</td>
<td>1.38</td>
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<tr>
<td>Community Solar</td>
<td>N/A</td>
<td>N/A</td>
<td>0.40</td>
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<tr>
<td>Religious buildings</td>
<td>N/A</td>
<td>N/A</td>
<td>0.40</td>
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<tr>
<td>PSEG Long Island Labor, Outside Services, Advertising</td>
<td>N/A</td>
<td>N/A</td>
<td>9.28</td>
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<tr>
<td><strong>Total, Budget Components not Associated with Savings</strong></td>
<td>-</td>
<td>-</td>
<td><strong>11.47</strong></td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>1,147,670</strong></td>
<td><strong>327,049</strong></td>
<td><strong>88.90</strong></td>
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</table>
EV Program Summary

MARK WARNER, GABEL ASSOCIATES
AUGUST 2021
OVERVIEW


• Make Ready Incentive Program
• NYSERDA Prize funding
• Fleet Advisory Services
• Suffolk Transit Make Ready Program
• Bucket Truck Electrification Study

Part Of PSEG Long Island’s 2021 Utility 2.0 filing

• (DPS Comment Period open to 8/23/2021)
Five Main Focus Areas:

1. Identify the number of ports and locations needed to meet State EV penetration goals for 2025 on Long Island.

2. Recommend a framework for prioritizing incentive allocations (i.e. ensure utility investment achieves policy goals).

3. Program design recommendations.

4. Optimum business model to deliver proposed program.

5. Estimated budget necessary to deliver proposed program.
Detailed Analysis Based On Long Island Data

Corridor Roadways

LI/EJ Communities

- Slow Chargers
  - 386 L2 Plugs at 179 Locations
- Fast Chargers
  - 112 DCFC Plugs at 32 Locations (with 10 L2 plugs at 9 of those locations)
- Restricted
  - 103 DCFC Plugs at 19 Locations (with 2 L2 plugs at 2 of those locations)
- Fully Accessible
  - 290 L2 Plugs at 140 Locations
- Tesla Vehicles Only
  - 50 L2 Plugs at 10 Locations
- Tesla and J1772
  - 0 L2 Plugs at 0 Locations

- TESLA Only
  - 34 DCFC Plugs at 4 Locations
- CCS Only
  - 4 DCFC Plugs at 4 Locations
- CHAdeMO Only
  - 2 DCFC Plugs at 1 Location
- CHAdeMO & CCS
  - 12 DCFC Plugs at 3 Locations

Non-compliant
- 2 Corridor Locations
  - 1 Community Location
  - 3 Non-compliant locations

Non-compliant
- 2 Corridor Locations
  - 1 Community Location
  - 1 Non-compliant locations

All Vehicles (11772)
- 290 L2 Plugs at 140 Locations

Duplicates
- (Duplicates locations, and duplicate plugs removed)
- 508 Plugs at 211 Locations

New Vehicles Sold Each Year

- BEVs
- PHEVs
2020(A)
2021
2022
2023
2024
2025
0
10,000
20,000
30,000
40,000
50,000
60,000
70,000
80,000
90,000

Original PEV Registrations Each Year

- BEVs
- PHEVs
2013(A)
2012(A)
2013(A)
2014(A)
2015(A)
2016(A)
2017(A)
2018(A)
2019(A)
2020(A)
0
500
1000
1500
2000
2500
3000
Projected Net New Requirements (ports & locations)

These Projections Reflect The **NET NEW Development Needed**, After Accounting For Existing Charging Infrastructure.

- **DCFC**: Recognizes CORRIDOR, and COMMUNITY Locations

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Corridor</th>
<th>Com - Gen. Use</th>
<th>Com - LI/EJ</th>
<th>Com - Dest.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total New DCFC Locations:</td>
<td>130</td>
<td>54</td>
<td>59</td>
<td>14</td>
<td>3</td>
</tr>
<tr>
<td>Total New DCFC Ports:</td>
<td>498</td>
<td>270</td>
<td>177</td>
<td>42</td>
<td>9</td>
</tr>
</tbody>
</table>

- **L2**: Recognizes Workplace, Public, and LI/EJ Locations

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Workplace L2</th>
<th>Public-L2</th>
<th>LI/EJ - L2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total New L2 Locations:</td>
<td>708</td>
<td>467</td>
<td>209</td>
<td>32</td>
</tr>
<tr>
<td>Total New L2 Ports:</td>
<td>4,247</td>
<td>2,803</td>
<td>1,254</td>
<td>190</td>
</tr>
</tbody>
</table>

- Make-Ready funding awarded competitively, percentage of costs covered vary depending on merit.
Business Model Investigated

**Cash Rebate:** Incentives are paid to customers in a single lump-sum. (Rest of State).

**Lease:** Make-ready is constructed and owned by the utility, and the customer leases that make-ready for a fixed term at a rate that is net of incentives due, at the end of which ownership is transferred to the customer.

**Purchase:** Make-ready is constructed and owned by the utility, and the customer make a single lump-sum payment equivalent to a lease payment (net of incentives due), and after a fixed term ownership is transferred to the customer.

**Hybrid:** A combination program in which simple cash rebates are paid for smaller (L2) projects, and the lease program is used for large (DCFC) projects.
## Make Ready Budget Request

<table>
<thead>
<tr>
<th>Port Type</th>
<th>Total Budget</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
<th>2024</th>
<th>2025</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corridor DCFC</td>
<td>$28,582,281</td>
<td>$2,286,582</td>
<td>$4,287,342</td>
<td>$7,145,570</td>
<td>$7,145,570</td>
<td>$7,717,216</td>
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<tr>
<td>Community DCFC</td>
<td>$15,627,333</td>
<td>$1,250,187</td>
<td>$2,344,100</td>
<td>$3,906,833</td>
<td>$3,906,833</td>
<td>$4,219,380</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>$65,698,809</strong></td>
<td><strong>$4,611,229</strong></td>
<td><strong>$9,854,821</strong></td>
<td><strong>$16,424,702</strong></td>
<td><strong>$16,424,702</strong></td>
<td><strong>$18,383,354</strong></td>
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</tbody>
</table>
Next Steps

• Public Comments

• DPS Interrogatories and Feedback

• Development of full implementation Plan and documents
  – Development of Easement Process
  – Development of Lease origination and service capabilities
  – Development of Solicitation Process and Schedule
  – Development of proposal scoring matrix.
NYSERDA EV Prizes

- Three prize areas totaling up to $95 million statewide
  - Environmental Justice Community Clean Vehicles Transformation Prize
  - Clean Personal Mobility Prize
  - Clean and Medium- and Heavy-Duty Vehicle Innovation Prize.

- LIPA/PSEGLI funding may only be awarded to projects available in Long Island

- LIPA/PSEGLI proposed funding: $.3 million in 2022 and $7-$10 million in 2023-2025
  - Amount depends on prize category of final project selected
  - Timing and payment contingent on project milestones being met
Fleet Advisory Services

- Study conducted by Gabel Associates
- Identified different levels of service over time.
- Focused on Light Duty Fleets initially
- Services to advise customers on site feasibility, rate analysis, cost savings and bill impacts, and optimized charging strategies.
- Plan is retain third party expert who will provide these services to potential customers.
- Estimate $260,000 for 2022 and increase thereafter to support more complex services.
- Initial budget request $1 Million. To be evaluated and reconciled based on the uptake and success of these services in the initial years of the program.
Suffolk County Transit System Make Ready

- Identified in DPS Order
- Protera 1.MW Charging System
  - 1 in Ronkonkoma
  - 1 in West Babylon
  - Each can support 20 buses.
- ~ $500,000 budgeted per site.
- Actual Make Ready Costs still being determined.
- Bus delivery planned for late 2022.
$100,000 budget request to fund third party study on state of offerings, costs and schedule for electrifying PSEG Long Island heavy-duty fleet.
Questions?
Appendix
Types of Chargers Needed

- **Residential Chargers**
  - Private Home Chargers
  - Multi-Family (& hotels)

- **Semi-Public Chargers**
  - Workplace Chargers
  - Fleet Chargers

- **Public Chargers**
  - Community Chargers
  - Corridor Chargers

- **Time Considerations**
  - Long Dwell Time (Authorized Users)
  - Short Dwell Time (Public Users)

- **Charging Speeds**
  - Convenience Charging, Slower OK
  - Must Do Charging, Very Fast
Appendix – EV Study Assumptions

• Utilized NREL’s EVI-Pro Lite tool for findings
  • 2 Other models investigated- Pro Lite outputs reflected mid point results between other models.
  • Same tool which was used for DPS Make Ready Order.

• Most model assumption consistent with DPS Order.

• Model based upon schedule of EV Adoption necessary to meet State Goal of 850,000 vehicles which equates to 178,500 registered EV’s on Long Island by end of 2025

• Consideration of trends in EV ownership occurring during time frame.
  • 91%BEV/9%PHEV split in 2025
  • 77% of owners assumed to be able to charge at home.
  • Full PHEV Coverage assumed.

• Existing Chargers netted from overall results.
Appendix – Location Caps

All
- No more than 10 Plugs incentivized.

Corridor
- No more than $529,302
- No more than 2MW size.

Community
- No more than $205,623

L2
- No more than $30,666
- No more than 100KW size
Appendix – Interim Disadvantaged Communities

Subject to change based on final definition of Disadvantaged Communities, to be developed by the Climate Justice Working Group for approval by the Climate Action Council

Source: NYSERDA