# NARUC Electric Vehicles State Working Group

APRIL MEETING APRIL 26, 2022

#### Welcome

#### Moderator: Chair Jason Stanek, Maryland Public Service Commission

Panelists

- David Schatz, Director of Strategy, Pepco Holdings
- Dr. Joy Wang, Public Utilities Engineer, Michigan Public Service Commission
- Dr. Holmes Hummel, Founder and Executive Director, Clean Energy Works

# Agenda

3:02 PM	<ul> <li>Welcome and Introductions (3 minutes)</li> <li>Agenda review</li> <li>Introduce yourselves, where you are from</li> <li>Moderated by Chair Stanek of the Maryland Public Service Commission</li> </ul>
3:02 PM	<b>Presentation: David Schatz, Pepco (15 minutes)</b> David will offer insights from the utility program on how to measure success for EV pilot programs and share lessons learn from Maryland's recent pilot evaluation.
3:17 PM	<b>Presentation: Dr. Joy Wang, (15 minutes)</b> Joy will provide an overview of Michigan PSC's MI Power Grid Energy Programs and Technology Pilots stakeholder sessions, and share insights on the EV pilot programs in Michigan and directions for future pilots.
3:32 PM	<b>Presentation: Dr. Holmes Hummel, Clean Energy Works (15 minutes)</b> Holmes will provide key considerations for regulators as they review utility proposals for pilot programs and discuss whether and how pilots can be sustainable and scalable.
3:47 PM	<ul> <li>Discussion and Q&amp;A (~15 minutes)</li> <li>Speakers will take additional questions from working group members</li> </ul>
4:00 PM	<ul> <li>Closed Door Discussion – Peer Sharing (30 minutes)</li> <li>Working group members will discuss their own views and the actions their states have taken to date.</li> </ul>
4:29 PM	Next Steps and Announcements (1 minute)
4:30 PM	Adjourn



April 2022

# Utility EV Pilot Programs Lessons Learned

David Schatz | Pepco Holdings

#### **Pepco Holdings Snapshot**

## million customers

## operating companies

## jurisdictions



#### **Charging Levels – Advancements in Charging Speed**



Level 1

VOLTAGE: 120V 1-Phase AC

AMPS: 12-16 Amps CHARGING LOAD: 1.4-1.9 kW

CHARGING TIME: 3-5 Miles per Hour



Level 2

VOLTAGE: 208V or 240 V 1-Phase AC AMPS: 12-80 Amps (Typ. 32 Amps) CHARGING LOAD: 2.5-19.2 kW (Typ. 6.6 kW) CHARGING TIME: 12-60 Miles per Hour

#### **DC Fast Charge**



VOLTAGE: 208V or 480V 3-Phase AC AMPS: >100 Amps CHARGING LOAD: 50-350 kW CHARGING TIME: 60-80 Miles in 20 Minutes Most utility EV programs offer Level 2 and DC Fast Charging across multiple segments

Source: https://www.advancedenergy.org/2020/11/01/an-overview-of-electric-vehicles-and-charging-stations/ 6

## **Utility EV Charging Programs 101**



#### Rate Design as a Critical Lever for EV Charging Market Economics





#### **PHI Active EV Charging Programs and Offerings**

Pepco Maryland & Delmarva Power

- **Segments:** Public, MUD, and Residential
- Level: DCFC and Level 2
- Models: Utility Ownership, Incentive, TOU, Demand Charge Credit

#### Pepco DC

- Segments: Public, Taxi, and Bus
- Level: DCFC and Level 2
- Models: Make Ready, TOU





#### **Atlantic City Electric**

- Segments: Public,
   Workplace, Fleet,
   Residential, MUD
- Level: DCFC and Level 2
- Models: Make Ready, New Demand Charge Rate

#### **Lessons Learned**

- 1. Different models may be necessary for different segments to adjust for market nuances
- 2. Every segment requires a tailored approach and right-sizing of offerings
- 3. Sustainable rate designs for EV charging can be game changers for charging economics
- 4. Technology is changing very fast, allow for **flexibility in program** designs
- 5. Charging and utilization data underpins program modifications and future offerings
- 6. Program marketing and education is super important as part of any set of offerings



#### **Considerations for Future Utility EV Programs**



- Supply chain observations
- Coordination with IIJA funding opportunities
- Medium/Heavy-Duty Fleets as a major area of growth
- Major EV loads working into utility planning
- Ensuring EV interconnection standardization
- Faster charging EV models coming to market





**Making the Most of Michigan's Energy Future** 

# Michigan Pilot Learnings, Actions, and Future Steps

#### Joy Wang

Michigan Public Service Commission NARUC Electric Vehicles State Working Group Meeting April 26, 2022



## Disclaimer

- All views expressed in this presentation are solely my own and do not express the views of the Michigan Public Service Commission.
- The Commission speaks through its orders.





# Agenda

MPSC

- MI Power Grid Energy Programs & Technology Pilots workgroup
- Michigan Commission actions regarding pilots
- EV pilot programs in Michigan
- Future directions for pilots







- Focused, multi-year stakeholder initiative to maximize the benefits of the transition to clean, distributed energy resources for Michigan residents and businesses.
- Engages utility customers and other stakeholders to help integrate new clean energy technologies and optimize grid investments for reliable, affordable electricity service
- Includes outreach, education, and regulatory reforms



MPSC



## **Energy Programs & Tech Pilots Workgroup**







# **Review of Approved Pilots since 2008**

- Review found information regarding pilot design, success criteria, and evaluation methods were limited.
- "Pilot" was loosely applied.
- Staff and the Commission did not often provide guidance regarding pilot goals or best practices.
  - Commission guidance more likely in its own motions (50% vs 11.8%)
- Though a variety of pilots were explored, technology pilots were most popular (31.8% of total).





# **Utility Survey & Conclusions**

- Utility survey about pilots from 2008-2019
  - Sent to electric IOUs within Michigan
- Utilities report majority of pilots had required reporting.
  - However, MPSC case review found lower incidence of required reporting and even less reports filed to e-dockets.
  - Suggested that much of utility pilot reporting was informal reporting to MPSC staff and/or stakeholders.
- Over 35% of pilots became a permanent program.
- Exploration and application of new technologies appeared to be focus of majority of Michigan pilots.
  - Technology pilots were 92.6% of total pilots.





# Stakeholder Process Helped Answer Questions Prompted by Review & Survey

- Should "pilots" be defined?
  - Pilots vs. demonstration projects
- What are accepted pilot best practices?
  - Pilot design and evaluation
  - Stakeholder engagement
  - Required/formalized pilot reporting
  - Publicly available pilot results and data
- What are the utilities' current pilot processes?
  - What happens when pilots do not result in permanent programs?
  - How are the learnings used?
- Should more uniform Commission guidance on pilots be provided?





## **Staff Recommendations**

- 1. Establish and promote foundational goals and vision for future pilots
- 2. Adopt a pilot definition
- 3. Adopt objective criteria for evaluating pilot proposals requiring pilot plan with:
  - Pilot need and goals
  - Pilot design and evaluation plan
  - Pilot project costs
  - Project timeline
  - Stakeholder engagement plan
  - Public interest
- 4. Streamlined Pilot Review Process
- 5. Online Michigan Pilot Directory

## **Commission Orders**

- 1. ✓ Oct. 29, 2020, order
- ✓ Feb 4, 2021, order after public comment
  - A pilot is a limited duration experiment or program to determine the impact of a measure, integrated solution, or new business relationship on one or more outcomes of interest.
- ✓ Feb 4, 2021, order after public comment
- 4. Streamlined Pilot Review Process
- 5. ✓ Oct. 29, 2020, order.
  - Online in October 2021.





# **Current EV Pilots in Michigan**

- Consumers Energy
  - PowerMIDrive U-20134 (started in 2019)
    - DCFC and Level 2 chargers
    - TOU rates
  - PowerMIFleet U-20697 (approval in December 2020, 3 year program)
    - Fleet charging infrastructure Level 2 and DCFC chargers
    - Fleet electrification concierge
- DTE Electric
  - Charging Forward U-20162 (started in 2019)
    - DCFC, Level 2, and fleet chargers
    - TOU rates
  - Charging Forward Phase 2 U-20935 (ex parte approval in March 2021; 5 year program)
    - Fleet advisory services
    - Charging Infrastructure enablement (DCFC and Level 2)





# **Current EV Pilots in Michigan**

- Indiana Michigan Power
  - IM Plugged In U-20359 (approval in Jan 2020, up to 4.5 years)
    - Residential, small commercial, multi dwelling units, fleet & workplace charging
    - Interstate DCFC charging
    - EV education & technical development
- Upper Peninsula Power Company
  - EV Chargers Program U-21137 (ex parte approval in April 2022, 3 years)
    - Tariff changes to allow for expanded EV use
    - DCFC rebates up to \$70,000 or 1/3 of total cost, whichever less.





# Some EV Pilot Learnings in Michigan

- Cost to install chargers lower than anticipated
- Multi-dwelling unit residential customers have different charging behavior
  - Less super off peak, more on-peak and off-peak charging that non-MDU residential participants
- Bring Your Own Charger component
  - Provides \$10 monthly incentive for desired charging behavior for a year
    - 98.9% charging off-peak, with 93.1% in super off-peak
      - Total residential participants: 86% charging off-peak, 41.4% charging in super off-peak
  - Less costly than upfront home charger rebate
- Coordination key to DCFC infrastructure implementation
  - Michigan Energy Office/ MI Dept. of Environment, Great Lakes and Energy (EGLE)
    - Optimized DCFC charger placement plan along highways (Feb. 2019)
    - Up to 1/3 of cost for eligible DCFC installations
- Focus on rate payer benefits instead of overall EV uptake a challenge





# Next Steps at the MPSC

- Future pilot areas from MI Power Grid Energy Programs and Tech. Pilots workgroup
  - Use Michigan resources, system approach, distribution related pilots (DERs, NWAs, HCAs, load flexibility)
- Likely greater emphasis on energy equity issues due to MPSC and stakeholder interest
- Address regulatory barriers and business model needs
  - Regulatory framework supporting new technology deployment in an equitable fashion







# **Questions?**

Email:

Joy Wang at WangJ3@Michigan.gov





# Questions?

Raise your hand to ask a question or type a question into the question box

#### Announcements

#### **EV Exchange Overview and Stakeholder Survey**, Richard Mroz

- <u>https://survey.zohopublic.com/zs/9jCztq</u>
- Presentations and recordings of past EVSWG events are available on the website
- EVSWG Listserv: <u>NARUC-EVSWG@lists.naruc.org</u>

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- What are the goals of electric vehicle pilot programs in your states?
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  - Are utilities required to report on these measures?
- What are examples of successful EV pilot programs in your state?