



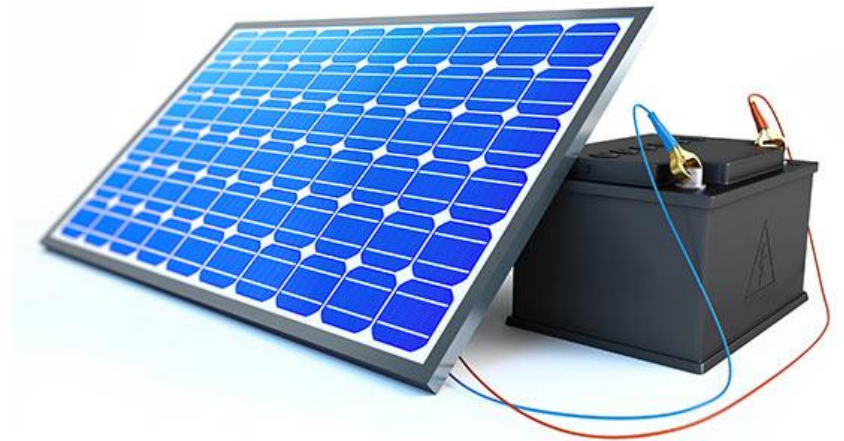
***Update on MWRA's Energy Program***  
for  
Wastewater Advisory Committee (WAC) &  
Water Supply Citizens Advisory Committee (WSCAC)

May 15, 2020



# Briefing Overview

- Introductions
- Background
- Recently Completed Projects
- New Projects Moving Forward
- Other Projects Being Investigated





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  - Program Manager, Energy and Environmental Management
  - Started in July 1990 at MWRA
  - Oversee energy-related work for Field Operations facilities and TRAC-related studies
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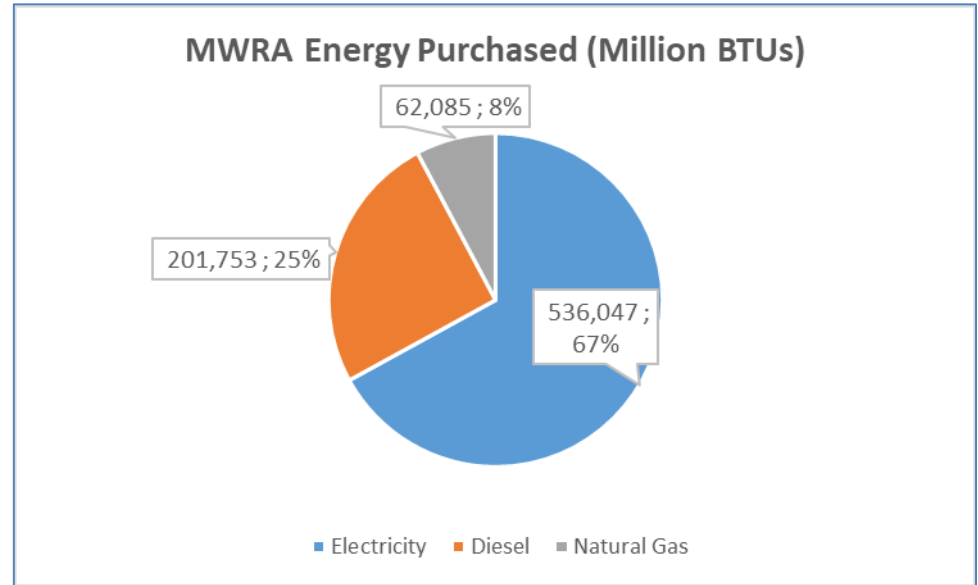


- Robert Huang
  - DITP Energy Program Manager
  - Started July 2019 at MWRA
  - Spearheads energy efficiency, demand response and renewable energy efforts at DITP
  - Previously consulted to utility and federal government clients for 19 years
  - Reach me at:
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# Background – MWRA Annual Energy Purchased

- Electricity:
  - 157.1 GWh and \$18.2M
  - 66% and 55% DITP
- Diesel:
  - 1.5M gallons and \$2.9M
  - 60% DITP
- Natural Gas:
  - 621K therms and \$0.6M
  - 0% DITP

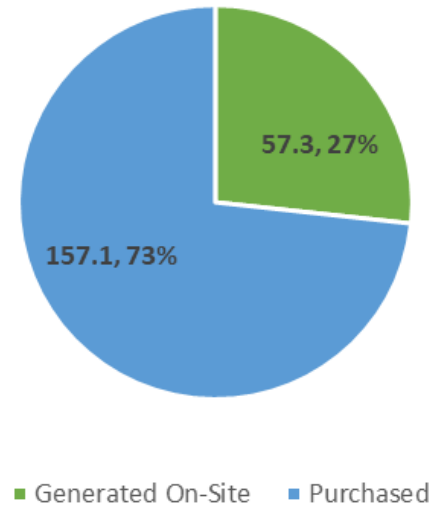




# Background - Renewables

- MWRA self generates over 50 GWhrs in FY 19:
  - Avoiding nearly \$6 million in energy payments
  - Accounting for 27% of MWRA energy use

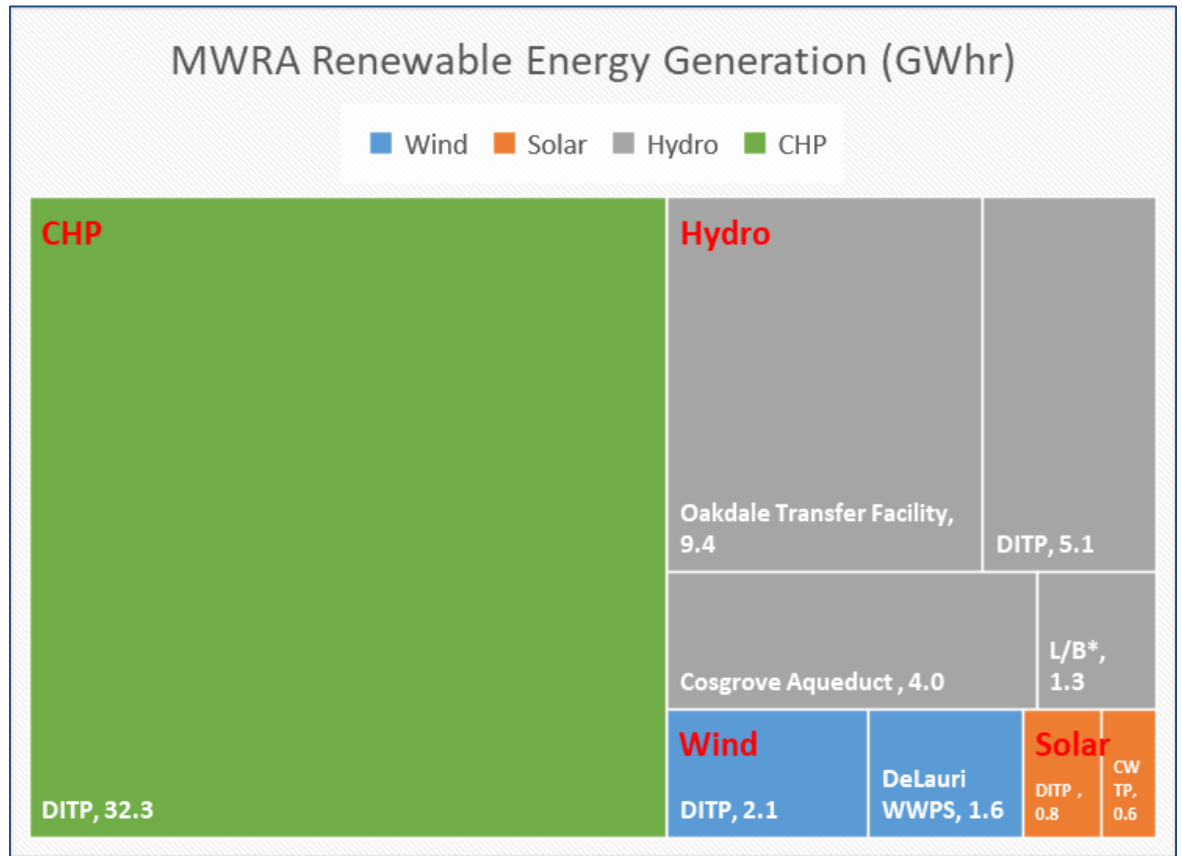
Electricity Used by MWRA in FY19, GWhrs





# Background: Renewable Energy Generation at a Glance

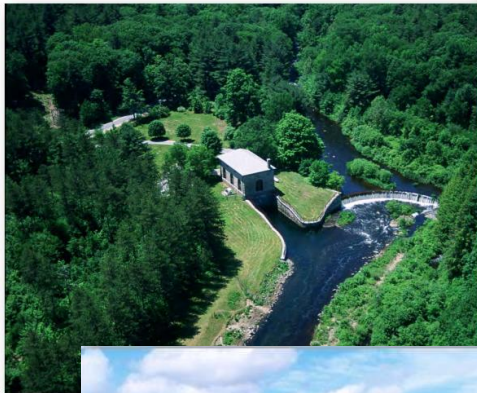
- Combined Heat and Power (CHP) at DITP leads effort
- Followed by
  - Hydro
  - Wind
  - Solar



\*L&B stands for Loring Road Covered Storage Facility (1.2 GWhr) and Brutsch Water Treatment Facility (0.2 GWhr)



# Background: Renewable Energy at MWRA

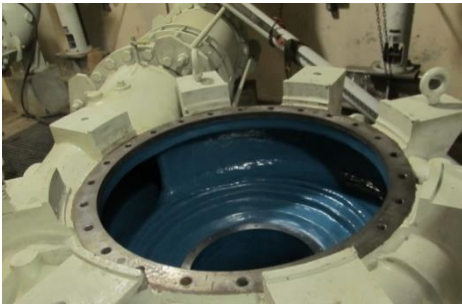






## Recently Completed Projects

- DITP North Main Pump Station Pump 9 Refurbishment -- epoxy coating/rebuilt -- saves \$20K/yr. and 2 yr. payback with \$59K incentive
- Southborough Interior LED Lighting Replacement – saves \$7.5K/yr. and 10 yr. payback with \$14K incentive
- Alewife Brook Pump Station Rehab included upgraded HVAC, VFDs on ventilation, more efficient pumps, insulation and energy efficient windows and doors
- Cosgrove Control Room Lighting – replaced old lighting with LED when roof was replaced



# New Projects Moving Forward – Battery Storage

- Battery Storage at Brattle Court and Chelsea
  - Funded through Eversource Grant
  - Each system is 250 kW capacity
  - Utility Interconnection Service Agreements approved and signed
  - Currently building foundation at both sites

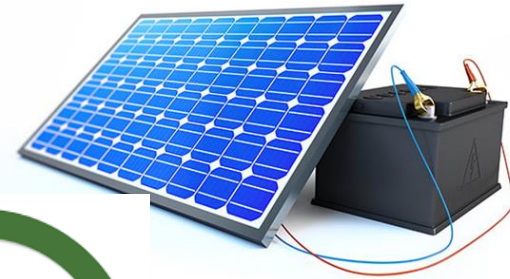


Chelsea Battery Storage Pad



# New Projects Moving Forward at DITP

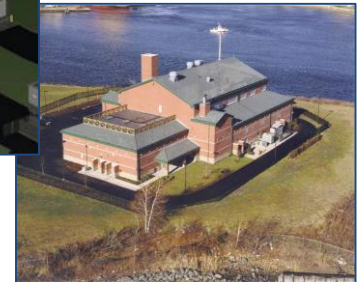
- DITP Solar PV Canopy/Battery Storage
  - Location: Parking Lot #1 and/or Parking Lot #2
  - Capacity: 1 MW canopy/250 kW battery
  - Status:
    - Power Purchase Agreement RFP issued on February 19, 2020
    - Proposals due May 27, 2020
- DITP Combined Heat and Power
  - Initial report issued w/performance and economic evaluation of existing system





# New Projects Moving Forward - Others

- Lighting Upgrade RFP for Clinton and Carroll – RFP and Scope under review in Procurement
- DITP Lighting Upgrade in North Main PS & Power Plant – piloting different LED high bays
- Nut Island HW Rehab-design phase – energy efficient motors and pumps, new BMS, VFDs
- Chelsea Creek HW Rehab – LED lighting with occupancy sensors, building management system, and VFDs fans and pumps
- Braintree-Weymouth RPS Rehab (design phase) – various energy efficiency improvements





Questions?