Reviewing 8.10 objectives were developed in 2010

- What did we complete
  - DOAS 920/Ashrae 198, 90.1 DOE process
  - Evaporation
  - Pools?
  - Indoor agro?
  - Design guide Ashrae, design guide NEEA, Conference papers
  - High performance DOAS studies by Nyserda, NEEA others
- What do we want to do for the next 10 years?
  - Next steps on each of the above?
  - Decarbonization and heatpump operations
  - Healthy buildings
  - Residential dedicated outside air esp. for heating mode incl occupancy control
  - From Dehumidification to humidity control (desiccants)
  - Stand alone equipment or networked solution with DOAS at the center
  - Adding load based and field testing to current labtesting (198)

8.10 objectives to further the industry's understanding and successful application of mechanical dehumidification equipment (chilled water or direct expansion), with particular focus on next generation dedicated outdoor-air system

1. Review 920 performance measurements and testing
   - Focus on reheat requirements ISMRE 2-70 is still only an application rating. Check by building type, e.g. schools are seen to need reheat?
   - 920 E/F not supported by the labs, but we need heating ratings. Can we modify considering need for accurate heating also for LD systems. Focus on predicting defrost cycling losses.
   - Make DOAS /MRE part of the 205 performance mapping
2. Define building level benefits of high performing Dehumidifying DOAS systems
   1. Build on research by NEEA, Nyserda and other utilities in high performing DOAS solutions (below)to seperate dehumidification and ventilation from sensible heating incl in homes (new 62.2 requirements)
   2. Combining Energy recovery with occupancy driven demand control based on Schedule D of 62.2?
   3. Building pressure/infiltration control to minimize energy costs
   4. Sizing DOAS for Equivalent Outside air requirementsto allow for low pressure drop sensible heating.
3. Sensors and controls for monitoring current and annualized heating and cooling performance
4. Develop heating test requirements for desiccant systems and other systems with humidification capabilities e.g. ERV
   1. Demonstrate safe operations for building humidity and energy impact of full humidity control
   2. Support research on humidity and health by 5.11
5. Research on buildings with special humidity control requirements, including ice rinks, museum, CEA pools, manufacturing

Other new Goals for 8.10

1. Work with relevant ASHRAE committees to ensure that new initiatives for building decarbonization and airborne decease control consider both current and potential configurations of DOAS and other dehumidification equipment
    1. Support work of decarbonization TF, including incorporation of DOAS solutions and separation of ventilation from sensible heating
    2. Support 241 in existing buildings by focusing ducting on ventilation and hydronics on sensible heating and cooling
    3. Minimum humidity level controls in buildings
2. Work with utilities to encourage adoption of high efficiency systems that reduce utility investments and support utility targets incl. but not limited to joint work with regulators and utilities, incl. DOE, Nyserda, NEEA, NEEP and others on DOAS optimization
    1. Encourage technical inputs from utilities and regulators through participation in ashrae TCs and research
    2. Propose Utility MTG or equivalent e.g. in GAC
        1. Separation of ventilation and sensible capacity
        2. Focus on iterative approach in existing buildings, with rapid 80% solutions while temporarily leaving existing heating in place until building envelop is optimized and sensible heating/cooling properly engineered.
        3. Focus on shortages of installers and engineers that's slowing down transition by many years if we make the wrong choices
        4. Support ASHRAE decarbonization heating guide
        5. Use utility research to address key risks during decarbonization
        6. Ashrae reactions to new electrification policies e.g. in Massachusetts

Key decarbonization issues that the MTG should address

- Savings from 80% solutions
- Benefits of iterative approach for cost effective and high acceptance implementation
- User guide development for endusers, regulators, utilities and regions so that their issues are addressed
- Impact of technician shortages on programs and the need for solutions that require minimal preparatory engineering and allow for standard installation (esp. in homes) (Netherlands data)
- Integrating solar and heatpump installations to minimize impact on renewable network capacity.
- Heatpump setpoints for switching to backup (0F rather than 36 or 37F) (Eversource)
- Defrost reduction and flexible/scaleable compressor capacity to avoid 40% loss (NYSERDA(
- Pressure management to control infiltration and reduce humidity risks and total energy costs with reliable sensors/maintenance (GSA)
- Connectivity and smart sensors with appropriate safeguards/intermediaries (MassSave))
- Customer acceptance of demand control flexibility (California
- Demand stimulation funding to reduce actual costs rather than increase pricing (MassSave
- System comparisons not just based on EER but actual performance, maintance requirements, reliability, noise
- Alternatives for rebates, e.g. identify on 80% low engineering overhead boxes (AHRI?)
- Raising decarbonization support by demonstrating impact on improved health with high end filtration, less PM2.5 and humidity management.
- Heatpump noise max to avoid community resistance to loud cheap solutions (40 to 50db rather than 60-70db)