

Public Scoping Meeting for the Capitol Area System (CAS) Central Plant Upgrades

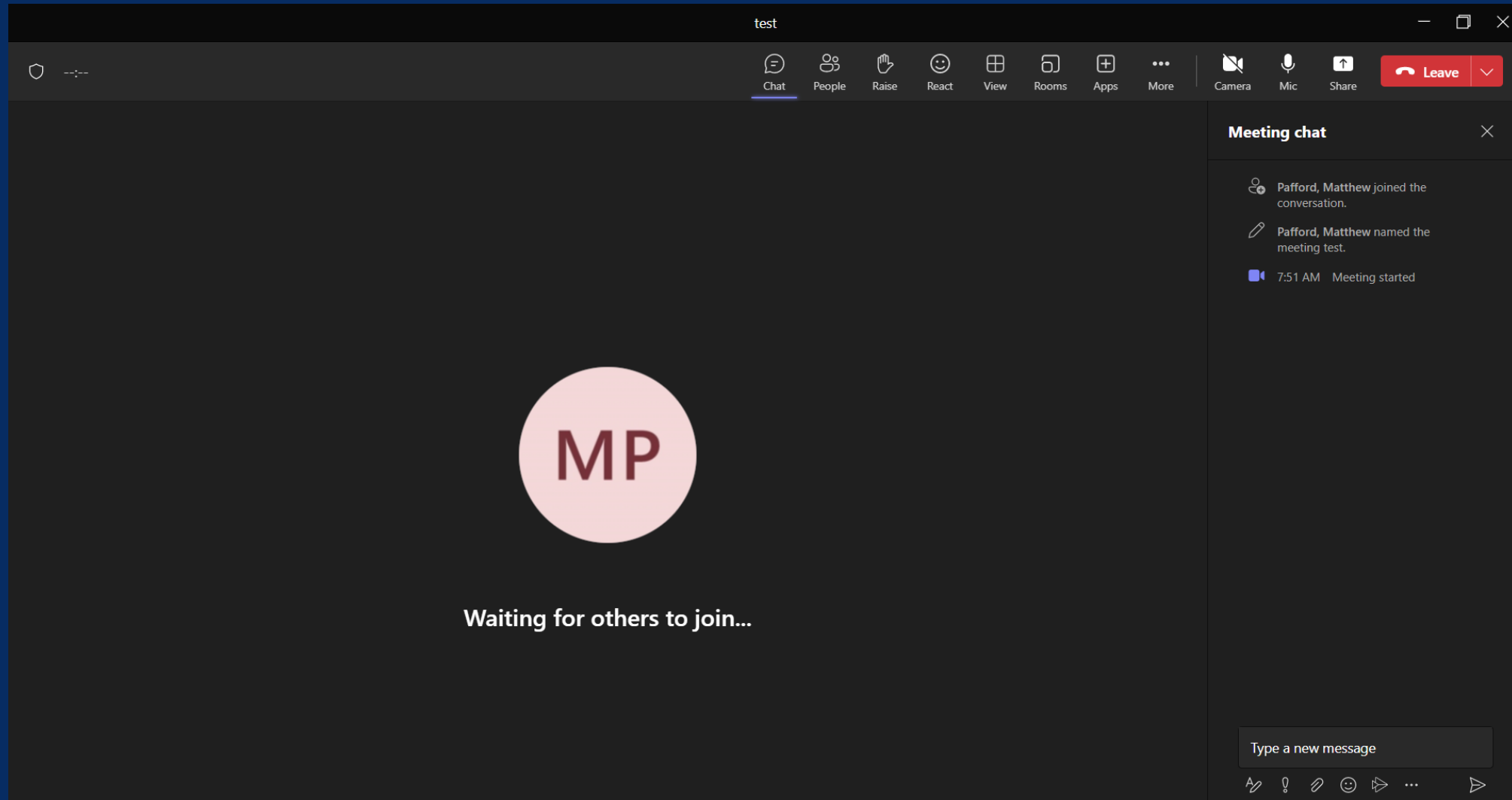


- Virtual Meeting: Tuesday June 27, 2023, 6:00 pm
- Questions/comments accepted until the close of business on Friday, July 7, 2023.
- Email to: matthew.pafford@ct.gov
- Project website: [Capitol Area System \(CAS\) \(ct.gov\)](https://www.ct.gov/cas)

Public Scoping Meeting – General Information

- Please remain muted;
- Meeting is being recorded;
- To submit comments:
 1. Email: matthew.pafford@ct.gov ;
 2. Those participating via Teams will have an opportunity to comment at the end of the presentation. Please limit comments to 2 minutes;
 3. Those participating via phone, DAS will specifically ask if anyone wants to provide comments.
- Verify that Teams displays your name/organization correctly;
- Technical difficulties – use the chat or email matthew.pafford@ct.gov;
- This is not a question-and-answer session.

Navigating the Teams Functions



Agenda

- Introduce the Project Team
- CEPA Summary
- Project Presentation
- Public Comments
- Next Steps

The DAS Project Team

- Matt Pafford, Supervising Environmental Analyst
- Noel Petra, Managing Director of Strategic Redevelopment
- Dimple Desai, Director of State Properties Review Board and Facility Planning and Services
- Nicholas Garcia, Design Engineer 3

Connecticut Environmental Policy Act (CEPA)

- **CEPA Core Purpose**
 - Identify and assess potential environmental impacts;
 - Evaluate potential alternatives;
 - Public input.
- CEPA review is required for any State action that could have a significant impact on environmental, social, and/or economic resources



Connecticut Environmental Policy Act (CEPA)

Physical

- Air Quality & Greenhouse Gas Emissions
- Noise
- Traffic
- Utilities & Services
- Stormwater
- Solid & Hazardous Waste
- Aesthetics & Scenic Resources
- Cultural Resources
- Energy Use

Natural

- Erosion or Sedimentation
- Surface Water
- Groundwater
- Floodplains
- Wetlands
- Fisheries
- Plants & Wildlife/
State Listed Species
- Changing
Climate/Resilience

Socioeconomic

- Land Use & Zoning
- State, Regional and Local Land Use Planning
- Community Impacts
- Public Health & Safety
- Recreational Resources
- Environmental Justice
- State Plan of Conservation & Development

See Section 22a-1a-3 of the CEPA Regulations for a description and listing of impacts to be considered by State Agencies.

Connecticut Environmental Policy Act (CEPA)

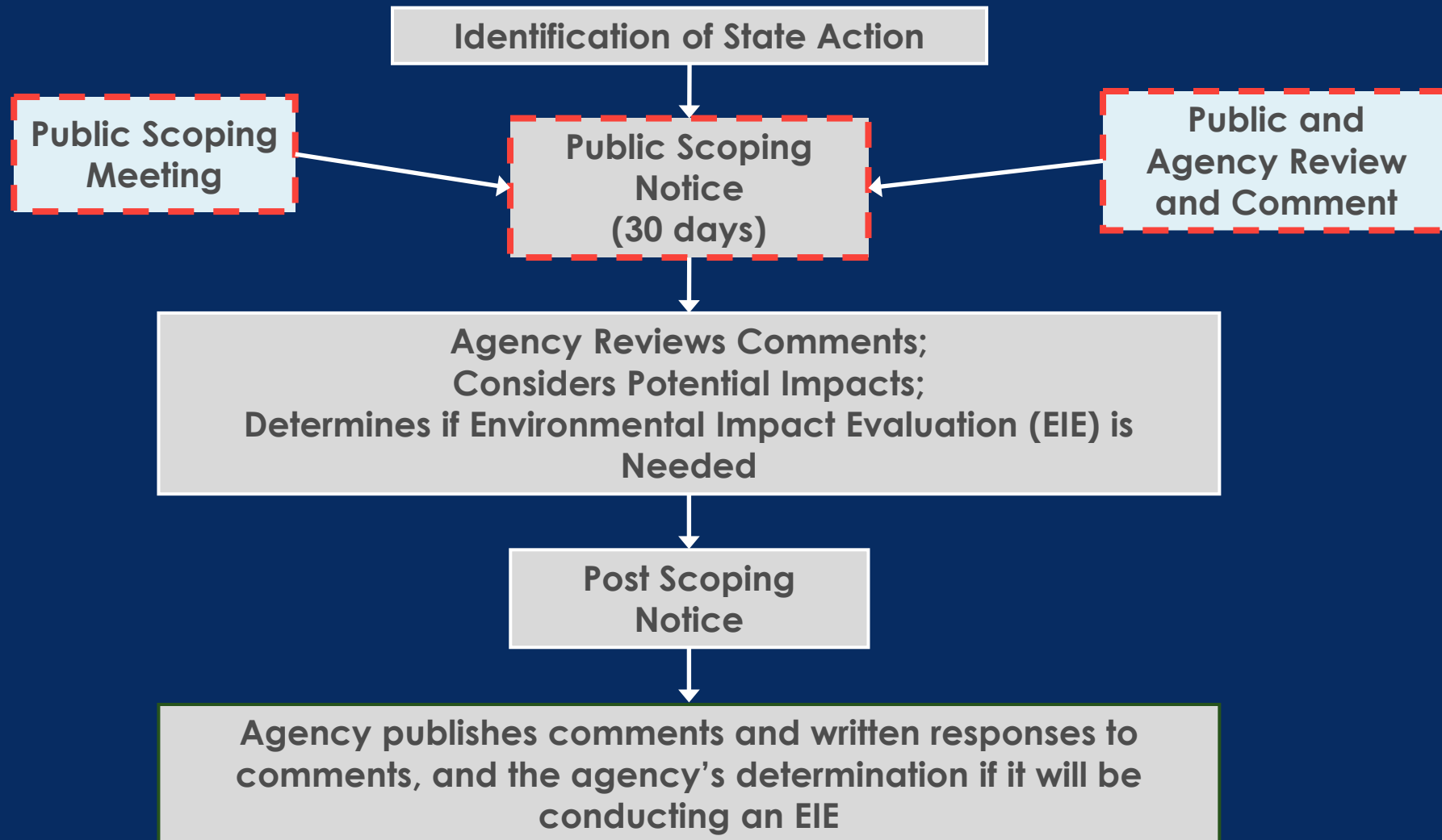
What is CEPA Scoping?

- Provide public notification and offer opportunity for public input;
- Information gathering for agencies to help establish the breadth of potential impacts, the need for additional investigation/analysis, and to assist in determining if an Environmental Impact Evaluation (EIE) is needed.

Public Scoping Process

- Publish Notice of Project in the Environmental Monitor;
- Minimum 30-day public comment period;
- Public Scoping Meeting;
- Concludes with a Post-Scoping Notice in the Environmental Monitor indicating whether or not an EIE will be prepared.

CEPA Process





Formerly Known As

CDECCA – Capitol District Energy Center
Cogeneration Associates

CAS

Capitol Area
System



Capitol Area System (CAS) Loop

Facilities, hot and chilled water
and production

Serving 15 public and private buildings

Over 3 miles of underground piping
throughout the Capital Area

Capacity for expansion

CLIENT FACILITIES SERVED

State Owned CAS users	Private CAS users
Legislative Office Building	Underwood Tower A (residential)
231 Capitol (State Library/Supreme Court)	Underwood Tower B (residential)
Armory (State's Emergency Operations Center)	Bushnell Theater
79 Elm (DEEP)	United Way
75 Elm (Judicial)	18/20 Trinity
410-474 Capitol – Cap Ave Complex (multiple State agencies)	30 Trinity
101 Lafayette (Judicial)	21 Oak St (CT Education Association)
165 Capitol – State Office Building	

Possible Future Connections to CAS

State Owned	Private CAS users
State Capitol	None at this time
80 Washington Street	
90 Washington Street	
95 Washington Street (Superior Court)	
100 Washington Street	

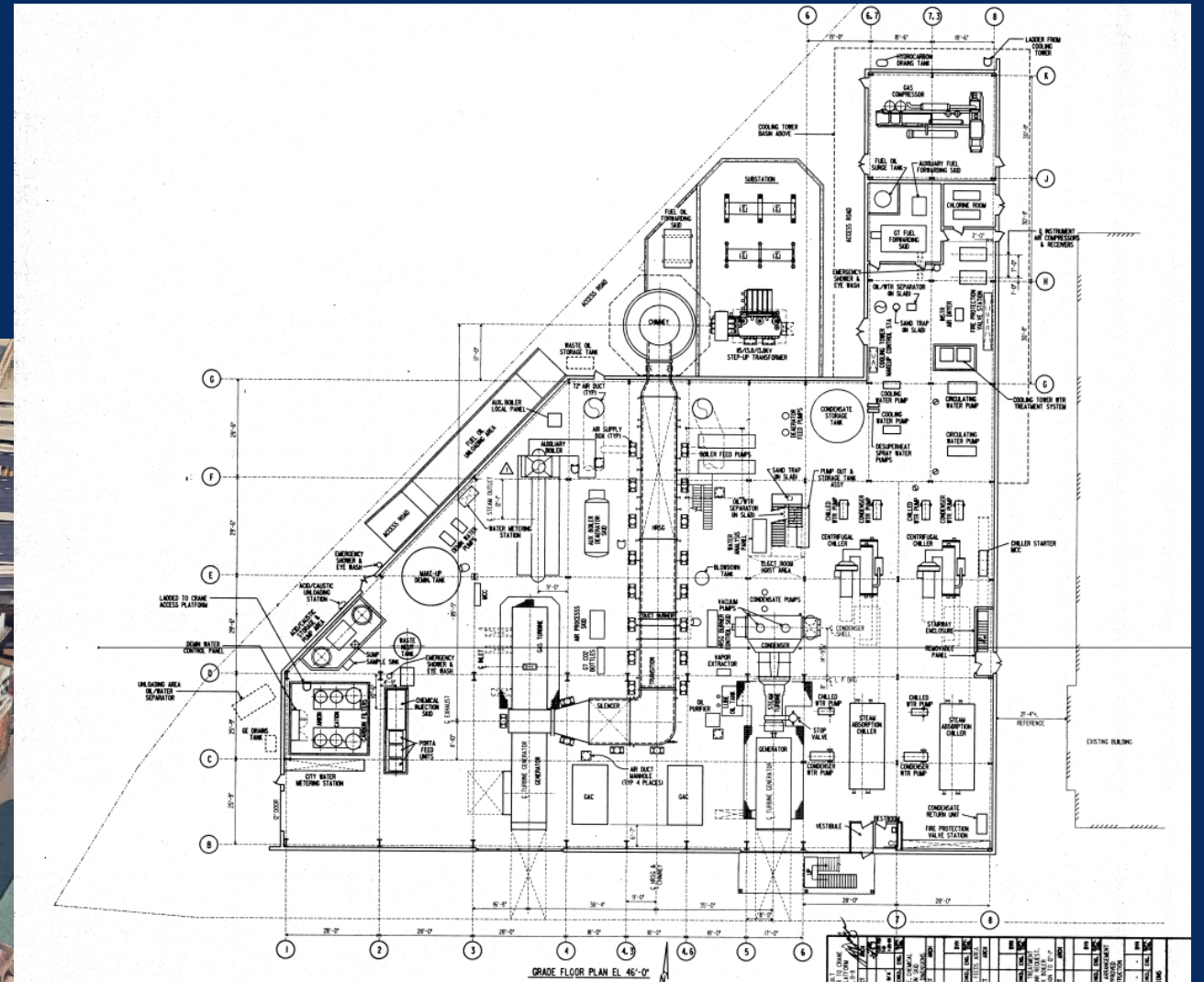
The CAS Plant

490 Capitol Ave, Hartford

Year built: 1988 (34 years in 2022)

Building Area: 38,280 Square feet

Lot Area: 53,970 Square Feet



Facility Background

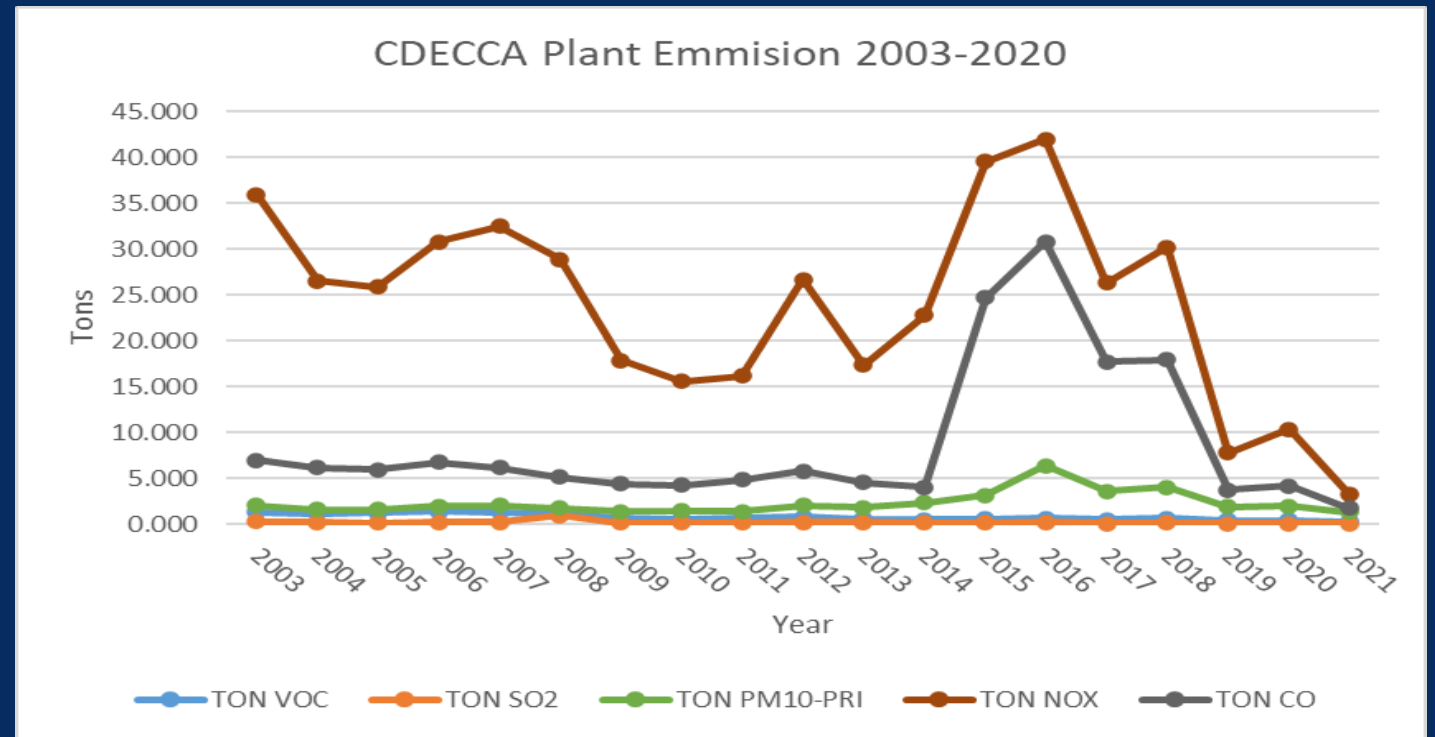
- The plant was originally a natural gas-fired, dual fuel capable, combined-cycle cogeneration merchant plant with a generation nameplate capacity of 62.1 MW. Previously CDECCA provided peaking energy to the ISO New England power market as well as steam and chilled water to the Hartford Capitol district heating network.
- Initially the facility consisted of a General Electric model PG 6531 (Frame 6) gas combustion turbine generator (CTG) with an in-line three (3) pressure Heat Recovery Steam Generator (HRSG) with duct-firing capabilities, a 22.5 MW Alstom condensing/extraction steam turbine generator (STG), one (1) 900- ton two-stage absorption chiller (de-rated to 350-400 tons), two (2) 1,800-ton centrifugal chillers , one (1) 900-ton variable speed centrifugal chiller, a diesel starter engine, two (2) package boilers to provide steam to the CAS loop and Capitol Ave Complex, a four (4) cell BAC-Pritchard Cooling tower with 3,750 Ton rating per cell.
- As of April 2021, the electrical turbines have been decommissioned and the facility is no longer an electric generation plant. The only equipment used now is chillers, a small boiler, cooling tower and pumps.
- The 4-fuel oil storage tanks (under OPM parking lot) have been cleaned and removed . The facility is no longer dual fuel capable.
- August 2021 - Explosion at the pump house. This destroyed our pumping station. Currently we have setup a temporary pumping and hot water operation in the parking lot behind OPM office. We would like to move this operation into the facility the state just purchased as soon as possible to avoid rental fees.

Improvements/Events since 2021

Pump House (blue tarp) & Temp Setup



CDECCA Fuel Usage and Emissions Comparison



Year	Gas Usage (mmbtu)	Oil Usage (GALLONS)
2016 (pre-decommissioning)	1,284,850	1,286.5
2019 (pre-decommissioning)	263,616	0
2021/2022 (post-decommissioning)	43,150	0



Purpose and Need:

To develop a modern and cost-effective facility that improves energy efficiency and implements feasible decarbonization options while maintaining an effective and affordable supply of heating and cooling to end users.

Project Goals:

- CT EO1 Compliance
- Decarbonization
- Cost Savings
- Social Environmental Equity
- Environmental Sustainability
- Operational Efficiency
- Reduce Fuel Costs



Description of the Proposed Action

DAS is conducting a Decarbonization Study of the CAS Thermal Energy Plant to define, develop, and assess options for upgrading the CAS central plant and thermal loop operations, including a broad range of supply and demand side scenarios.

Supply Side Options:

- Combination of Heat Pumps and electric boilers;
- 100% Heat Pumps (ground source or air source);
- Hybrid of Heat pumps & Natural Gas Condensing boilers capable of transitioning to cleaner fuels;
- 100% Natural Gas Condensing boilers capable of transitioning to cleaner fuels;
- Other Options

Demand Side Options:

- Reduce loads via energy efficiency at public and private facilities and reduce heating supply temperature;
- Reduce loads via energy efficiency at public facilities and keep heating supply temperature as is;
- Maintain existing status quo.

Feasibility Study Summary

- DAS completed a high-level feasibility study to evaluate several scenarios for the plant's continued operation, including:
 - Maintain the status quo including the existing arrangement with CDECCA;
 - The state to purchase and renovate the existing CDECCA facility;
 - The state to build a new thermal energy facility at 470 Capitol Ave.

Ultimately the state's decision to purchase and renovate the existing plant allows for improved service delivery and cost efficiency, as well as the potential to implement decarbonization options.



Other CAS Facility projects being considered

- Demo of the decommissioned equipment associated with the electrical generation portion of the building;
- Converting Cap Ave Complex Steam heating system to hot water (currently the only facility on the CAS loop operating on steam);
- Relocate chilled water pumps, vfd's and chilled water expansion tank;
- Upgrades/repairs to existing electrical, building envelope (roofs, façade, foundation), facility security;
- Asbestos remediation;
- Repairs to cooling tower structure.

Project Challenges and Limitations

- Capital and Operating Costs, both to the tax-payers and to private users;
- Delay in relocating temporary pumping/heating operation inside the CAS facility;
- Supply chain issues;
- The plant and System users are all located in an urban area:
 - There are many potential unknown issues we may encounter: underground utilities, lack of as-builts, ownership, water table, logistics, etc.;
 - Potential environmental hazards;
 - Working in with older existing buildings with urban geology;
 - Working with privately owned buildings for improvements/upgrades;
- Greater Hartford Mobility Study: I-84 re-alignment project

Current/Next Steps

- Complete CEPA scoping;
 - Complete decarbonization study to identify potential options and associated costs;
 - Determine if Environmental Impact Evaluation (EIE) is needed;
 - Publish Post-Scoping Notice.
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- Visit the project website for additional information and updates: [Capitol Area System \(CAS\) \(ct.gov\)](http://CapitolAreaSystem(CAS)(ct.gov))



Public Comments

Please remain muted until it is your turn to speak.

How to submit comments:

1. Email questions and comments to matthew.pafford@ct.gov;
2. Use the raise hand function in TEAMS and DAS staff will call on you. In order to give everyone an opportunity to speak, please limit comments to 2 minutes;
3. On the phone. DAS will make an opportunity for those on the phone to speak.

For those providing verbal comments, please identify yourself by first and last name and any affiliation with an organization.

What Happens Next?



DAS will continue to accept written questions/comments until the close of business on **Friday, July 7, 2023**.



Email comments to:
matthew.pafford@ct.gov



DAS to update the project website: [Capitol Area System \(CAS\) \(ct.gov\)](https://www.ct.gov/capitolarea)



DAS to determine whether or not to prepare an Environmental Impact Evaluation (EIE). A Post-Scoping Notice of its decision will appear in a future edition of the Environmental Monitor. [Click here](#) to register for notifications from CEQ.