MDC

The Metropolitan District

water supply · environmental services · geographic information

COMMITTEE ON TECHNOLOGY
SPECIAL MEETING
WEDNESDAY, SEPTEMBER 2, 2026
4:30 PM

Location
Board Room
District Headquarters
555 Main Street, Hartford

Dial in #: (415)-655-0001
Access Code: 2319 429 5080 #
Meeting Video Link

Commissioners

Adil	Drake (VC)
Bush	Gardow
Cortes	Gentile
Currey (Ex-Officio)	Johnson
DiBella (C)	Maylor

Quorum: 5

1. **CALL TO ORDER**
2. **PUBLIC COMMENTS RELATIVE TO AGENDA ITEMS**
3. **INDEPENDENT CONSUMER ADVOCATE COMMENTS & QUESTIONS RELATIVE TO AGENDA ITEMS**
4. **APPROVAL OF MEETING MINUTES OF MAY 28, 2026**
5. **DISCUSSION AND POTENTIAL ACTION RE: STUDY OPPORTUNITIES FOR SOLID WASTE MANAGEMENT FOR MDC/UCONN**
6. **OPPORTUNITY FOR GENERAL PUBLIC COMMENTS**
7. **COMMISSIONER REQUEST FOR CONSIDERATION OF FUTURE AGENDA ITEMS**
8. **ADJOURNMENT**

BENCHMARK STUDY — PHASE I

Integrated Waste, Materials, Energy and District-Heat Systems

Lessons for the Hartford–UConn Demonstration Project

U.S. and European Precedents | Desk Research and Site-Visit Framework
August 2026

Purpose: identify which elements have already been demonstrated, where integration has succeeded or failed, and which precedents should shape the Connecticut beta.

Executive Summary

This Phase I benchmark study finds that the Hartford–UConn concept is not dependent on a single unproven technology. Nearly every major technical component has already been demonstrated at commercial scale in either the United States or Europe. What remains unusual in the U.S. is the deliberate integration of those components into one system architecture: waste hierarchy, advanced materials recovery, useful thermal-energy recovery, district heating, institutional energy, transparent environmental verification, university research, and a replication strategy.

The strongest American precedents are Palm Beach County, Florida; Huntsville/Redstone Arsenal, Alabama; Indianapolis, Indiana; Niagara Falls, New York; and Hennepin County/Minneapolis, Minnesota. Palm Beach is the best U.S. precedent for importing advanced European-style combustion and air-pollution-control technology into an integrated public waste system. Huntsville is the best analogue for linking a municipal waste-energy facility to a major institutional/research complex. Indianapolis and Hennepin demonstrate direct integration of waste-derived steam into district-energy networks. Niagara demonstrates an industrial circular loop in which waste streams and steam are exchanged among multiple industrial users.

The strongest European benchmarks are ARC/Amager Bakke in Copenhagen, Wien Energie/Spittelau in Vienna, Stockholm Exergi in Stockholm, and AEB Amsterdam. These systems demonstrate a broader principle absent from most American facilities: waste treatment is planned as one component of a larger urban energy and materials system. Heat, electricity, materials recovery, district cooling, storage, grid balancing, carbon capture, and public infrastructure governance are treated as interacting functions.

The most important caution comes from Hennepin County and from current European experience. Waste-to-energy can become economically and politically vulnerable if it is designed around fixed combustion throughput rather than a shrinking residual waste stream. Stockholm explicitly recognizes the risk that improved resource efficiency can reduce residual waste available to existing plants. Hennepin County is planning a transition away from HERC in pursuit of a zero-waste strategy. Connecticut should therefore size the Hartford beta conservatively, preserve modularity, and ensure that economics remain viable as recycling and source reduction improve.

For Hartford–UConn, the central design implication is clear: the project should not be framed as a new incinerator. It should be designed as a modular resource-and-energy platform in which residual treatment is one component. The heat network, materials recovery, environmental verification, data architecture, and research platform should have value independent of any particular combustion technology.

Recommended first site visits: (1) Palm Beach County, (2) Huntsville/Redstone Arsenal, (3) Vienna Spittelau, (4) Copenhagen ARC/Amager Bakke, (5) Stockholm Exergi/Brista-Högdalen, and (6) Amsterdam AEB. Indianapolis and Hennepin should be included as focused technical/policy visits or structured interviews, with Hennepin treated specifically as a counterfactual case.

1. Study Question and Method

The benchmark question is not simply, 'Who has a modern waste-to-energy plant?' It is: Which jurisdictions have assembled the pieces of an integrated materials, waste, thermal-energy, electric-energy, environmental, and governance system, and what can Connecticut learn from both their successes and their failures?

This Phase I report is a desk-research benchmark based primarily on owner/operator, government, annual-report, technical-vendor, and regulatory sources available through August 2026. It is designed to identify the highest-value sites for a second phase of structured interviews and site visits. It should not substitute for engineering due diligence, audited cost normalization, emissions-data review, or direct operator interviews.

Benchmark dimensions

- Waste hierarchy: source reduction, reuse, recycling, organics, and definition of the residual stream.
- Technology: combustion/treatment architecture, capacity, reliability, air-pollution controls, and residual management.

- Materials recovery: front-end and post-combustion recovery of metals, plastics, gypsum, ash, and other materials.
- Energy integration: electricity, useful steam/hot water, district heating/cooling, industrial steam, storage, and grid services.
- Governance: public authority, municipal ownership, contracts, customer relationships, and institutional coordination.
- Finance: capital structure, user fees/tipping fees, energy revenues, assessments, debt, and risk allocation.
- Environmental performance: emissions monitoring, climate strategy, carbon capture, and treatment of difficult contaminants.
- Research and innovation: university/research integration, data use, demonstration projects, and technology-development capacity.
- Transferability to Hartford–UConn: what is directly applicable, what requires adaptation, and what should be avoided.

2. Comparative Findings at a Glance

Site	Distinctive strength	Heat integration	Governance lesson	Hartford–UConn relevance
Palm Beach County, FL	European-derived WTE technology inside full public integrated system	Low: electricity-dominant	Dedicated public authority with stable user-fee base	Best U.S. technology/finance benchmark
Huntsville / Redstone, AL	Municipal waste energy linked to large institutional campus	High: steam historically; new on-site electricity	Public nonprofit authority + long-term institutional customer	Closest U.S. analogue to Hartford–UConn institutional linkage
Indianapolis, IN	Waste steam directly supports downtown district loop	High	Long-term utility/offtake integration	Proof that WTE + district heat works in a U.S. city
Niagara Falls, NY	Industrial circular loop: waste, steam, materials	High: industrial steam	Private operator + industrial contracts	Model for industrial symbiosis and anchor customers
Hennepin / Minneapolis, MN	District heat plus transparent economics; now transitioning away	High	County ownership with explicit zero-waste policy tension	Critical warning on lock-in, aging assets and policy durability
Copenhagen ARC	Integrated municipal collection/recycling + WTE + district heat	Very high	Multi-municipal ownership; WTE now commercialized separately	Best whole-system governance/urban integration benchmark
Vienna Spittelau	Waste + district heat + hospitals + power-to-heat + heat pump	Very high	Municipal energy utility integrates heat portfolio	Best benchmark for Hartford thermal-system integration
Stockholm Exergi	Residual-waste sorting + huge heat/cooling network + pricing signals	Very high	Energy company optimizes whole regional heat system	Best model for modularity, sorting and carbon-price incentives
AEB Amsterdam	Post-separation + WTE + district heat + steam + CCS roadmap	High	Municipal ownership with operating/financial discipline	Strong materials/energy integration and cautionary operations case

3. U.S. Benchmark 1 — Palm Beach County, Florida

Why it matters

Palm Beach County is the strongest American example of deliberately importing advanced European waste-to-energy technology into a publicly governed, integrated county waste system. The Solid Waste Authority (SWA) manages collection-related infrastructure, transfer, recycling, two energy facilities, landfill capacity, household hazardous waste, biosolids and other programs as one system.

System architecture

- SWA is a dependent special district governed by the seven Palm Beach County Commissioners acting as the Authority board.
- The integrated system is funded primarily through user fees, especially a non-ad valorem assessment, supplemented by commercial tipping fees, electricity sales, recycling revenue and investment income.
- The county operates two major renewable-energy facilities; REF 2 began commercial operation in 2015.
- REF 2 processes up to about 1 million tons of post-recycled MSW per year and generates up to about 100 MW.
- The Authority states that REF 2 can reduce waste to landfill by up to 90 percent, extending landfill life.

Technology and European transfer

REF 2 is a mass-burn facility using Babcock & Wilcox/Vølund grate technology. Its three boilers use the Vølund DynaGrate/Wave Grate architecture. It also uses spray-dryer absorbers, fabric filters, powdered activated carbon, selective catalytic reduction (SCR), and continuous emissions monitoring. Palm Beach was the first U.S. municipal WTE facility to use SCR for NOx control. The project is therefore direct evidence that advanced European-origin moving-grate and emissions-control concepts can be deployed in a U.S. regulatory and operating environment.

Materials recovery

REF 2 recovers roughly 90 percent of ferrous and 85 percent of nonferrous metals from ash; the Authority reports roughly 27,000 tons of recovered metals annually at design scale. This is a major lesson for Connecticut: residual treatment should be designed with post-combustion materials recovery as part of the core process rather than as an afterthought.

Finance and risk

REF 2 cost approximately $672 million. The broader SWA system was historically supported by large revenue-bond financing and a stable countywide assessment. FY2025 financial reporting shows the scale of diversified system revenue: approximately $249 million in assessments, $67.5 million in tipping fees, $56.4 million in electric-generation revenue and $14.0 million in recycling income. The lesson is not that Connecticut should copy Palm Beach's rate structure; it is that a capital-intensive integrated system needs a durable, predictable revenue base that is not dependent on electricity prices alone.

Limitations

- The system is electricity-dominant; it does not exploit district heat at European scale.
- Florida climate, disposal markets and electricity conditions differ substantially from Connecticut.
- The plant is large; direct replication of scale could create throughput lock-in if Connecticut diversion rises.

Lessons for Hartford–UConn

1. Use Palm Beach as the primary U.S. benchmark for procurement, EPC risk, combustion technology, air controls, ash/metals recovery, public governance and financing.
2. Do not copy its electricity-heavy energy strategy; Hartford's comparative advantage is thermal demand.
3. Study its stable user-fee/assessment structure as a model for separating infrastructure finance from volatile commodity revenue.
4. Request actual ten-year data on outages, O&M, major maintenance, ash disposal, stack tests, metals revenue, electricity price realization and debt service.

4. U.S. Benchmark 2 — Huntsville / Redstone Arsenal, Alabama

Why it matters

Huntsville is the closest American precedent to the institutional linkage envisioned between Hartford and UConn. The Solid Waste Disposal Authority is a public nonprofit corporation responsible for the city/county integrated system, including waste-to-energy, landfill, recycling and waste reduction. Its WTE plant has historically converted roughly 700 tons per day of municipal waste into steam sold to Redstone Arsenal for heating and cooling.

Energy integration

In 2024 the relationship was expanded with installation of a 12.4-MW turbine to use SWDA steam to provide electricity to Redstone's power grid. Huntsville reports expected output of about 60,000 MWh annually and regional GHG reductions of about 20,000 tons per year relative to displaced grid power. The site therefore demonstrates a long-lived energy offtake relationship between public waste infrastructure and a very large research/defense campus.

Materials and broader system

The system also recovers metals and accepts dried biosolids from the city's wastewater system for energy recovery. This is an example of cross-infrastructure coordination: municipal wastewater residuals and solid waste are managed through one energy-recovery relationship.

Lessons for Hartford–UConn

5. The decisive economic asset is an anchor energy customer with durable demand. Hartford should identify and contract with thermal customers before final plant sizing.
6. The UConn relationship need not initially be a physical Hartford–Storrs heat pipe. Huntsville shows the value of institutional linkage even when the institutional user is adjacent rather than embedded in the city core.
7. Study the Redstone contract structure: pricing formula, minimum/maximum steam obligations, backup energy, outage allocation, capital responsibility and contract term.
8. Investigate how public-authority governance protects both municipal disposal objectives and the institutional customer's reliability requirements.

5. U.S. Benchmark 3 — Indianapolis, Indiana

Indianapolis provides direct proof that waste-derived steam can be integrated into a major U.S. downtown district-heating network. The Reworld Indianapolis facility generates steam that is purchased for the downtown heating loop. Utility testimony has described the district steam system as one of the largest in the United States and identified purchased WTE steam as contributing to lower costs and reliability.

Lessons for Hartford–UConn

- Hartford's Capitol Area System should be evaluated as an energy customer and network asset, not merely as a separate state facility.
- The value of heat should be modeled against the avoided marginal cost of steam/hot-water production and capacity, not just against wholesale electricity prices.
- Contract design should explicitly value reliability, backup boilers, seasonal load shape and avoided capacity investment.
- A focused Indianapolis technical visit should include both the WTE operator and the district-steam utility; studying only the waste plant would miss the key economics.

6. U.S. Benchmark 4 — Niagara Falls, New York

Reworld's Niagara system illustrates industrial symbiosis rather than municipal district heating. The operator describes a shared circular engine in which industrial waste and non-recyclable byproducts are converted to high-purity steam and returned to paper, chemical and industrial-gas users. Materials-processing facilities also convert paper tailings into animal bedding and alternative fuel.

A 2024 performance sheet reports roughly 783,000 tons of MSW processed, 2.5 billion pounds of net steam export, 210,000 MWh of net electricity export, and recovery of about 18,200 tons of ferrous and 2,000 tons of nonferrous metals.

Lessons for Hartford–UConn

- Look beyond public buildings: industrial and institutional steam customers can materially improve economics.
- Map potential Hartford-region anchor users by thermal load, temperature requirement, operating schedule and credit quality.
- Consider whether materials-processing businesses can co-locate with the resource campus, creating customers and feedstock loops.
- Rail logistics may matter for a statewide Connecticut network and should be explicitly benchmarked.

7. U.S. Benchmark 5 — Hennepin County / Minneapolis, Minnesota

Why it matters

Hennepin is indispensable because it is both a precedent and a warning. HERC has produced electricity and steam for the downtown Minneapolis district-energy system and Target Field, while recovering metals. County reports provide unusually transparent cost and revenue information. Yet the county is now planning a transition away from WTE as part of a broader zero-waste strategy.

Economics

A 2023 county briefing reported a contract tipping fee of $69 per ton and gate rate of $90 per ton. It reported annual energy and metal revenue ranges of roughly $3–4 million for electricity, $250,000–$350,000 for downtown steam, $100,000–$135,000 for stadium steam, and $350,000–$450,000 for recovered metals. The same report identified approximately $24.6 million in 2022 operator payments plus ash management, insurance and other costs. County capital documents note that HERC requires continuing preservation and improvement as an aging 1989 facility.

Transition risk

The county's 2026 solid-waste reinvention plan includes provisions for terminating WTE operations and the downtown steam agreement as waste volumes fall or policy changes. This is a critical design lesson: heat customers, operators and financing arrangements must have clear transition and termination mechanisms if source reduction succeeds faster than expected.

Lessons for Hartford–UConn

9. Use Hennepin as the primary counterfactual case: what makes a previously integrated WTE/district-energy system lose political or strategic support?
10. Require Hartford contracts to include a planned 'shrinking residual stream' pathway and modular capacity.
11. Model aging-asset reinvestment explicitly over 30 years; first-cost comparisons are insufficient.
12. Separate revenues supporting waste programs from revenues required for plant viability; cross-subsidies can become politically contentious.
13. Study community and environmental-justice opposition directly, not just technical performance.

8. European Benchmark 1 — Copenhagen: ARC / Amager Bakke

System architecture

ARC is owned by five municipalities in the Copenhagen region and operates far more than an incinerator: waste collection, recycling centers, transfer operations, hazardous-waste activities and the Amager Bakke energy facility. This is the strongest benchmark for a public, multi-municipal platform integrating waste collection, materials management and energy.

ARC's 2025 data report 543,000 tons combusted, 1,326 GWh of heat production and 312 GWh of electricity production. ARC states that each tonne of waste can produce roughly 2.7 MWh of district heat and 0.8 MWh of electricity. Waste burns for roughly 1.5–2 hours at about 950–1,100°C.

Residuals and metals

After combustion, about 17–20 percent by weight remains as slag. ARC matures the slag for several months, then removes metals for recycling. This integrated treatment of bottom ash should be compared directly with Palm Beach's post-combustion metals system.

Governance evolution

ARC historically operated as an intermunicipal public enterprise. Following Danish national policy changes, its energy-incineration activity was separated into a commercial company from 2025 while ownership remained under the municipal ARC structure. This is highly relevant to Connecticut because it illustrates a hybrid structure: public strategic ownership with a separately accountable commercial energy/waste operating entity.

Key warning

ARC's recent results also demonstrate that technically advanced plants are not guaranteed to be financially easy. Its published 2025 figures show a negative annual result. Connecticut should therefore study not just technology but debt, overcapacity, waste procurement, heat pricing and regulatory changes.

Lessons for Hartford–UConn

14. Study the intermunicipal governance structure as a model for MDC/state/municipal participation.
15. Benchmark district-heat value and dispatch rules, not simply plant electrical efficiency.
16. Study why the WTE business was separated commercially and what this reveals about risk allocation.
17. Treat public acceptance and urban design as infrastructure issues: Amager Bakke was deliberately integrated into the city rather than hidden from it.
18. Obtain actual capital/debt history and lessons from cost overruns or capacity planning before Connecticut selects scale.

9. European Benchmark 2 — Vienna: Wien Energie / Spittelau

Why it matters

Vienna may be the single most useful thermal-energy benchmark for Hartford. Spittelau was originally located specifically to provide district heat to a major hospital complex roughly two kilometers away. It is now embedded in Vienna's municipal district-heating system.

Performance and integration

Wien Energie reports roughly 250,000–270,000 tons of household waste processed annually, about 500 GWh of heat and 60 GWh of electricity. It states that Spittelau heat serves more than 60,000 households. Vienna operates multiple waste-treatment facilities that together process over one million tons annually and provide electricity and heat to hundreds of thousands of households.

The energy system continues to evolve. A 10-MW power-to-heat installation uses surplus electricity to make hot water for the district network, and in January 2026 Wien Energie announced a large heat pump at Spittelau designed to recover additional heat from flue-gas cleaning and serve about 16,000 households. The reported investment is about €40 million.

Environmental/urban integration

Spittelau's post-1987 redesign paired very stringent flue-gas treatment with prominent civic architecture. Wien Energie reports annual-average emissions around 90 percent below legal thresholds. Whatever the precise comparison basis, the broader lesson is that environmental performance and public legitimacy were treated as core design objectives rather than post-construction communications.

Lessons for Hartford–UConn

19. Study Spittelau as a heat-plant and network project, not just a WTE plant.
20. Hartford should evaluate heat pumps, power-to-heat, storage and waste heat together; residual-waste energy can be one source in a flexible thermal portfolio.
21. Hospitals and state buildings should be analyzed as anchor customers analogous to Vienna's institutional loads.
22. Modernization is continuous: the project should include staged upgrades rather than assuming a fixed 30-year technology configuration.
23. Public architecture, visitor access and transparent emissions performance can be part of siting strategy.

10. European Benchmark 3 — Stockholm Exergi

Why it matters

Stockholm Exergi is perhaps the best systems benchmark because it operates a regional energy platform rather than a single plant. Its roughly 3,000-km district-heating network connects multiple production plants, heat pumps, waste-energy units, residual heat sources and district cooling. The company describes waste treatment and heating as two societal needs served by the same infrastructure.

Waste hierarchy and post-sorting

Stockholm explicitly defines incineration as final treatment for residual waste after source reduction and material recycling. Its Brista post-sorting system mechanically removes plastics and metals from residual waste before energy recovery. The company also adjusts gate fees according to fossil/plastic content, creating a direct economic incentive for suppliers to improve sorting.

In 2024 Stockholm Exergi processed about 808,549 tons of waste, 73 percent from Sweden and the balance largely imported. The company openly identifies a strategic risk: as waste prevention improves, residual waste per person should fall, potentially reducing utilization and revenue unless the service area expands.

Carbon and system evolution

Stockholm has studied CCS at waste-to-energy plants and is developing carbon capture elsewhere in its energy portfolio. Its integrated district heating/cooling system also recovers waste heat from wastewater and other sources. This is the clearest precedent for designing Hartford district energy as an open thermal platform rather than a single-source network.

Lessons for Hartford–UConn

24. Build a source-agnostic district-energy platform capable of accepting heat from WTE, heat pumps, geothermal, electric boilers, data centers or other future sources.

25. Use front-end/post-sorting to reduce plastics before thermal treatment and improve the carbon profile.
26. Consider differentiated tipping fees based on fossil/plastic content as an incentive mechanism.
27. Model declining residual waste explicitly; do not assume constant tonnage for debt service.
28. Use the network, not the plant, as the long-lived asset.

11. European Benchmark 4 — Amsterdam: AEB

System architecture

AEB Amsterdam, wholly owned by the municipality, processes residual municipal and commercial waste, recovers materials, and supplies electricity and district heat. Its post-separation plant can recover seven material streams before incineration. AEB reports six incineration lines with combined capacity of roughly 850,000 tons at the conventional WTE plant plus two high-efficiency lines, and a broader historic combined capacity of about 1.4 million tons.

Materials and heat

AEB reports recovery of plastics, iron and nonferrous metals from incoming residual waste and bottom ash. It also recovers gypsum from flue-gas cleaning. Its WTE output heats about 30,000 homes, and it has explored direct steam supply to nearby industry. AEB is planning major carbon capture, with a target of up to 500 kilotonnes per year and an expected early-2028 operating date.

Operational caution

AEB is also valuable because it is not a flawless showcase. In 2026 it publicly acknowledged dioxin limit exceedances identified in three measurements in 2024–2025, implemented corrective actions, and stated that subsequent emissions were again below the permitted limit. This should be treated as a governance lesson: high-performing systems still have excursions, and credibility depends on measurement, disclosure and corrective action.

Lessons for Hartford–UConn

29. Integrate post-separation before combustion and treat materials recovery as a revenue/environmental workstream.
30. Design direct industrial steam options alongside district heat.
31. Make independent emissions measurement and rapid public disclosure part of project governance.
32. Study municipal ownership advantages and disadvantages, including how financial and operating discipline is maintained.
33. Treat CCS as a future module, not a justification for current combustion capacity.

12. Cross-Case Lessons for the Hartford–UConn Demonstration

Lesson 1 — The durable asset should be the network, not the furnace

Vienna and Stockholm show that thermal networks can accept multiple evolving heat sources. Connecticut should therefore design Hartford district energy as a long-lived open platform. Residual-waste energy, if selected, becomes one heat source among several. This reduces technology lock-in and gives the network continuing value if residual waste falls.

Lesson 2 — Secure heat customers before sizing treatment capacity

Huntsville, Indianapolis and Vienna all demonstrate the value of anchor thermal customers. The Hartford study should map state buildings, hospitals, universities, commercial towers, housing and industrial customers before defining plant size. Heat-offtake agreements should be treated as core finance documents.

Lesson 3 — Separate material recovery from disposal thinking

Palm Beach, Stockholm, Copenhagen and Amsterdam all show that metals and other materials recovery can be engineered both before and after thermal treatment. The Hartford beta should establish a measurable materials-recovery target and revenue model independent of WTE.

Lesson 4 — The residual stream should shrink by design

Stockholm and Hennepin demonstrate the strategic tension between waste prevention and fixed combustion assets. Connecticut should define success as less residual waste per resident over time. Capacity should be modular, regional procurement should be flexible, and debt structures should tolerate declining throughput.

Lesson 5 — Governance matters as much as combustion technology

Palm Beach's special authority, ARC's multi-municipal enterprise, Huntsville's nonprofit authority and Vienna's municipal energy utility all solve different coordination problems. Hartford–UConn needs a governance form that can coordinate MDC, the state, municipalities, UConn, heat customers, operators and private capital without allowing any single silo to optimize at the expense of the system.

Lesson 6 — Stable infrastructure revenue is more important than commodity upside

Palm Beach's assessment base is a particularly strong lesson. Electricity, recovered metals and renewable attributes are volatile. The project should be financially viable on conservative commodity assumptions, with tipping/service charges and contracted thermal revenues providing the durable base.

Lesson 7 — Environmental legitimacy must be operational, not rhetorical

AEB's disclosed dioxin excursion and Hennepin's political transition underscore the need for continuous monitoring, independent validation, public data and clear corrective-action procedures. The UConn research role can make this a defining advantage of the Connecticut model.

Lesson 8 — PFAS should be a research/verification module, not an unsupported sales claim

None of the benchmark municipal systems establishes that ordinary municipal WTE universally destroys PFAS. Hartford–UConn should distinguish municipal residual treatment from specialized hazardous-waste treatment and use UConn to measure destruction, transformation products, emissions, ash and wastewater under controlled protocols.

13. Recommended Site-Visit Program

The next phase should move from desk research to structured operator, regulator, customer and community interviews. Each visit should use the same questionnaire and request the same data package, allowing normalized comparison.

Priority	Site	Primary question	Who should be interviewed
1	Palm Beach County	Can advanced European technology be financed, permitted and operated successfully in U.S. public infrastructure?	SWA executive/finance/engineering; operator; air regulator; metals contractor; bond/finance advisers
2	Huntsville / Redstone	How should a long-term institutional energy offtake be structured?	SWDA; Redstone energy team; city; operator; contract/finance staff
3	Vienna Spittelau	How is WTE optimized inside a flexible district-heat portfolio?	Wien Energie plant/network/finance teams; hospital/institutional customer; regulator
4	Copenhagen ARC	How does multi-municipal governance integrate collection,	ARC board/management/finance;

		recycling, WTE and heat—and what went wrong financially?	district heat buyer; owner municipalities; regulator
5	Stockholm Exergi	How should a system adapt to declining residual waste and rising carbon constraints?	Exergi waste/heat/pricing teams; Brista sorting; municipal partners; CCS team
6	AEB Amsterdam	How are post-separation, district heat, steam and emissions governance integrated?	AEB operations/finance/environment; heat-network partner; industrial steam prospect/customer
7	Hennepin County	Why is an operating WTE/district-energy system being phased down?	County commissioners/staff; operator; district-energy buyer; environmental justice/zero-waste stakeholders
8	Indianapolis	What is the real avoided-cost value of WTE steam to a U.S. district network?	WTE operator; district steam utility; major customers/regulator

14. Standard Data Request for Every Site

- Ten years of annual waste throughput by source and composition.
- Annual recycling, organics diversion, metals recovery and ash/residue tonnage.
- Plant availability, planned/unplanned outages and major maintenance history.
- Gross/net electricity and heat output; heat sold; seasonal load factor; rejected heat.
- All major energy-offtake contracts or summary commercial terms.
- Capital cost, debt structure, annual debt service and refinancing history.
- Annual O&M costs by major category, including chemicals, labor, ash, insurance and maintenance.
- Tipping/service fees and their escalation mechanisms.
- Electricity, heat, metals and other commodity revenue.
- Air emissions: permit limits, annual stack tests, continuous-monitoring results, excursions and corrective actions.
- Residual/ash handling and beneficial-use specifications.
- Community complaints, litigation, siting controversies and environmental-justice processes.
- Governance documents, board composition, procurement model, operator contract, risk allocation and termination rights.
- Plans for declining waste volumes, decarbonization, CCS, heat pumps, storage and future network integration.

15. Standard Interview Questions

34. What assumption in the original business case proved most wrong?
35. If you were building the system today, what would you size or contract differently?
36. Which revenue source is most stable? Which is most volatile?
37. What is the real economic value of useful heat compared with electricity?
38. How much thermal energy is rejected because there is no customer?
39. How have recycling and source reduction changed the residual stream?
40. What is the minimum annual throughput required for financial viability?
41. What major maintenance or replacement costs were underestimated?
42. How are outages handled for heat customers?
43. What environmental issue has created the greatest operating or political risk?
44. How are emissions data verified and communicated to the public?
45. How are ash, fly ash and air-pollution-control residues managed and priced?
46. What contract or governance provision has proven most valuable?
47. What contract or governance provision do you wish you had included?
48. How would you advise Connecticut to avoid lock-in while still financing long-lived infrastructure?

16. Proposed Connecticut Benchmark Scorecard

Each site should be scored after interviews on a 1–5 scale using evidence rather than promotional claims.

- Lifecycle cost and financial resilience.
- Heat-utilization efficiency.
- Materials-recovery performance.
- Flexibility under declining residual waste.
- Environmental performance and transparency.
- Reliability and major-maintenance burden.
- Governance effectiveness.
- Public legitimacy / community acceptance.
- Innovation and upgrade flexibility.
- Transferability to Hartford.
- Transferability to UConn research/education role.
- Replicability to additional Connecticut clusters.

17. Preliminary Design Implications for Hartford–UConn

49. Make the Hartford district-energy network the organizing energy asset. Evaluate multiple heat sources and design the network for future source substitution.
50. Size residual treatment only after an aggressive 30-year materials-flow forecast; build modularly where possible.
51. Create an advanced front-end materials-recovery function and specify post-combustion metals recovery if thermal treatment is selected.
52. Secure anchor heat customers and define backup/reliability obligations before financial close.
53. Separate the public-system governance layer from commercial plant-operation risk where appropriate, drawing on Palm Beach and ARC.
54. Build a stable service-fee/tipping-fee base; treat electricity, metals and future environmental credits as supplemental rather than essential revenues.
55. Establish a UConn-led independent environmental verification and open-data program from the start.
56. Design PFAS work as a separately governed research and specialized-treatment program with measured performance.
57. Include explicit transition provisions for falling residual volumes, technology substitution and possible early retirement of treatment modules.
58. Use REMI only after engineering and financial inputs are normalized against the benchmark evidence collected from these sites.

18. Phase II Work Plan

Phase II should consist of structured interviews, site visits, data normalization and a Connecticut transferability assessment. A small team should include waste/materials engineering, district-energy engineering, finance, environmental science, REMI/economic modeling, governance/legal expertise and UConn research leadership.

- Step 1: send standardized data request and confidentiality protocol.
- Step 2: conduct remote pre-interviews to identify data gaps.
- Step 3: visit the six highest-priority sites; add focused visits/interviews for Hennepin and Indianapolis.
- Step 4: normalize all financial data to common-year dollars and common units ($/ton, $/MWh heat, $/MWh electricity, $/ton residue).
- Step 5: prepare a technology/governance failure register: cost overruns, outages, emissions excursions, contract disputes, stranded capacity and policy reversals.

- Step 6: produce a Hartford–UConn design-options matrix showing which features should be adopted, adapted, deferred or rejected.
- Step 7: feed benchmark-derived ranges into the SOW assumptions register and REMI scenario model.

19. Preliminary Conclusion

The benchmark evidence supports proceeding with the Hartford–UConn study, but it argues strongly against treating the initiative as a conventional waste-to-energy procurement. The best systems create value by integrating residual-waste treatment into larger networks of heat, materials recovery, public infrastructure and institutional customers. The most important transferable asset is therefore not a particular furnace; it is the system architecture.

Connecticut has an unusual combination of assets: a waste-capacity problem that already creates large ongoing costs, existing district-energy infrastructure in Hartford, a major research university, concentrated institutional loads, and a geography dense enough to support cluster-based networks. The benchmark task is now to determine which proven elements can be assembled into a Connecticut system without inheriting the overcapacity, aging-asset, emissions-governance or political-lock-in problems visible in some precedents.

The site visits should therefore be treated as project design work, not informational tours. The objective is to return with operating data, contract structures, failure histories, financing lessons, heat-network economics, environmental evidence and explicit answers to the question: 'What would you do differently if you were designing this today?'

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COMMITTEE ON TECHNOLOGY
SPECIAL MEETING
The Metropolitan District
555 Main Street, Hartford
Thursday, May 28, 2026

PRESENT: Commissioners Richard Bush William DiBella, David Drake, Peter Gardow, Gary Johnson, Petrel Maylor and District Chairman Donald Currey (4)

REMOTE ATTENDANCE: None. (0)

ABSENT: Commissioners Andrew Adil, Alberto Cortes, and Joan Gentile (3)

ALSO PRESENT:
Commissioner John Avedisian
Commissioner Christopher Tierrini
Commissioner Jackie Mandyck (Remote Attendance)
Citizen Member Awet Tsegai
Scott W. Jellison, Chief Executive Officer
Christopher Stone, District Counsel
Christopher Levesque, Chief Operating Officer
Kelly Shane, Chief Administrative Officer
Susan Negrelli, Director of Engineering
Robert Schwarm, Director of Information Systems (Remote Attendance)
Dave Rutty, Director of Operations
Carrie Blardo, Assistant to the Chief Executive Officer (Remote Attendance)
Victoria Escoriza, Assistant Administrative Officer and Special Assistant
Kevin Sullivan, IT Consultant (Remote Attendance)
Elizabeth Tavelli, Independent Consumer Advocate (Remote Attendance)

CALL TO ORDER

Chairman DiBella called the meeting to order at 4:32 PM

PUBLIC COMMENTS RELATIVE TO AGENDA ITEMS

No one from the public appeared to be heard.

INDEPENDENT CONSUMER ADVOCATE COMMENTS & QUESTIONS RELATIVE TO AGENDA ITEMS

Elizabeth Tavelli stated that she sees solid waste as an opportunity for revenue for the MDC.

APPROVAL OF MINUTES

On motion made by Commissioner Gardow and duly seconded, the meeting minutes of February 25, 2026 were approved.

OPPORTUNITIES FOR SOLID WASTE DISPOSAL

Chairman DiBella led a discussion regarding opportunities for solid waste disposal.

Without objection, District Chairman Currey asked to have the Chairman, through the District Clerk, to contact DEEP to set up a meeting.

OPPORTUNITY FOR GENERAL PUBLIC COMMENTS

No one from the public appeared to be heard

COMMISSIONER REQEST FOR FUTURE AGENDA ITEMS

There were no requests for future agenda items.

ADJOURNMENT

The meeting was adjourned at 5:00 PM

ATTEST:

John S. Mirtle, Esq.
District Clerk

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Date of Approval

**Video of the full May 28, 2026 Committee on Technology meeting is available at https://www.youtube.com/@MetropolitanDistrictCommission **