

Governance and Operations of Thermal Energy Networks

Purpose. To help cities and states decide who owns a thermal energy network (TEN), how it sells service and how it is paid for.

KEY TAKEAWAYS

01 Three decisions are linked

Who owns the network
How it sells service
How it is paid for

04 Utility pilots stall on cost

Maryland: stalled
Lowell, Massachusetts: canceled

07 Get the labels right

Regulators judge substance, not names
63-20, 501(c)(3), conduit issuer
Different tools, different end states

02 State law is the gate

13 states have a heat network law
31 states: cities need express state permission

05 Cities are getting direct paths

Vermont, 2024
Colorado, 2026

08 Longer terms lower yearly charges

Repay over 40 to 60 years
Total interest rises

03 Split ownership broke the financing

Troy, New York, 2025
One owner now holds the whole network

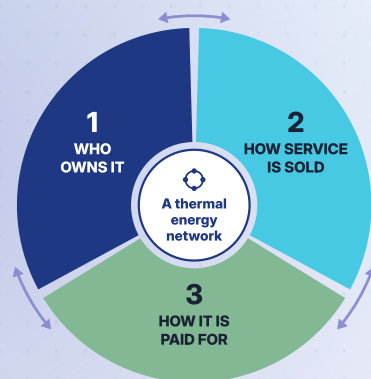
06 One building is not a utility

One building: a building system
Many owners: a utility
Heat is optional: sign-ups are the risk

09 Plan without federal support

30% credit through 2032
No credit written for heat networks
Federal pilots: 5 selected, 3 left

1 The three decisions



A TEN is a shared loop of water-filled pipe that links wells or another heat source to heat pumps in many buildings. It crosses property lines and runs under public streets, so it looks like a utility even when it is small. Each choice limits the other two:

- The federal credit goes to the owner of the ground loop and at least one connected heat pump [2]. Tax-exempt bonds can cut it by up to 15% [3, 4].
- The New York Public Service Commission (PSC) treats an owner that serves multiple customers across property lines as generally a utility [5].
- A Revenue Ruling 63-20 nonprofit corporation hands title to the government when its bonds are paid off [6]. A 501(c)(3) owner with qualified 501(c)(3) bonds can keep the network [7].

Gaiergy view: Test all three decisions together, early, against the state law that applies.

Wheel: Gaiergy graphic, full report Figure 1.

2 Who can own a network

PUBLIC

PRIVATE



1 City or town

Boise, since 1983 [8]



2 County or regional

Washington public utility districts, 2024 law [9]



3 State authority

New York Power Authority, TEN role **not confirmed** [10]



4 Federal agency

Energy Department pilots: 5 selected, 3 left [11, 12]



5 Shared ownership

Troy, New York: split plan dropped 2025 [13]



6 Nonprofit or co-op

District Energy St. Paul [14]



7 Investor-owned utility

Eversource, Framingham [15]



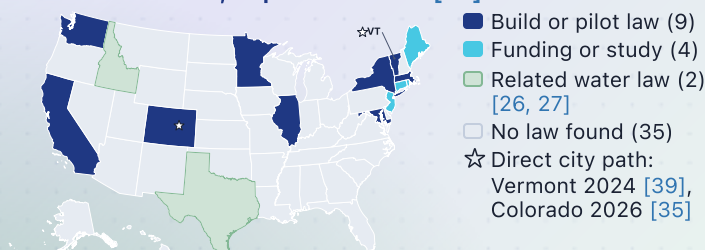
8 Private developer

Whisper Valley, Austin [16]

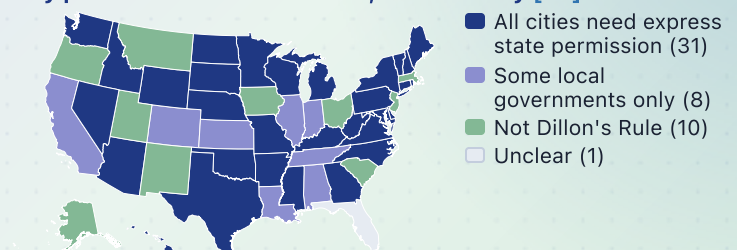
Split title can block financing. In Troy, New York, the local development corporation that was to own the well field had no taxing powers or other revenue. The plan was dropped in August 2025; one owner now holds the whole network [13]. **Utility pilots stall on cost.** The Maryland PSC did not approve pilots in December 2025 [22] (PSC order **not confirmed**); National Grid canceled its Lowell pilot in December 2024 [23].

3 State law is the gate

Heat network laws, September 2026 [26]



City powers under Dillon's Rule, 2003 survey [25]



Under Dillon's Rule, a city has only the powers the state gives it in express terms [25]. By Gaiergy's count 13 states have a TEN law; the tracker lists 14, with Texas [26]; Rhode Island's enactment is **not confirmed** [44]. **Gaiergy view:** Look for an express state grant before planning to own a network.

4 How service is sold

Working definitions: a power or thermal purchase agreement (PPA, TPA) sells metered heat; energy as a service (EaaS) sells an outcome for a flat fee; an energy service agreement (ESA) pays on measured savings. A different federal contract, the Energy Savings Performance Contract (ESPC) energy sales agreement, can run up to 25 years under 42 United States Code 8287(a)(1) [57]. **Gaiergy view:** The key risk test is who pays when heat use changes.



Hospital, university or government campus

PPA or TPA with take-or-pay

Steady load, strong credit



Apartment buildings, small owners

EaaS or flat monthly fee

Predictable bill



Existing building retrofit

ESA

Pays on measured savings



Federal facility

ESPC energy sales agreement

Up to 25 years [57]



Customers of a regulated utility

Tariff approved by the PSC [31]

Rates set through the regulator

Contract that often fits each customer, in Gaiergy's view except where a source is shown.

5 How it is paid for, and paid back over 40 to 60 years

Who repays. A revenue bond is repaid from network charges, with no pledge of taxing power, and may default if that revenue falls short [61]. **Gaiergy view:** Bond buyers want proof that customers will connect and pay.

Tax-exempt P3. **Gaiergy view:** A public-private partnership (P3) can combine these pieces. The 501(c)(3) nonprofit project company owns the network and keeps its nonprofit status. Partners do not have to be nonprofits: a private partner can be a contractor within the 501(c)(3) structure or a partner in it. Qualified 501(c)(3) bonds sit outside the state volume cap [78].

Federal credit. 30% with prevailing wage and apprenticeship rules, or under 1 megawatt (MW), if construction begins before 2033; then 26% in 2033, 22% in 2034 and none after [4]. Governments and tax-exempt bodies can take it as direct pay [79]. No federal credit is written for TENs [4, 92]. Of 5 community geothermal pilots the Department of Energy selected [11], its page now lists 3 [12].



Illustrative: \$10 million at a fixed 4%, level yearly payments, 100 buildings. Not a forecast. Gaiergy illustration, full report Figure 14.

Illustrative: From 30 to 60 years the yearly payment falls 23.6%; total interest rises from \$7.3 million to \$16.5 million.

DC Water, the District of Columbia water and sewer utility, sold a 100-year bond [67].

6 Match the model to the site



One public building, no plan to expand. A building system, not a utility. A city that owns the loop and heat pumps can take the credit by direct pay if under 1 MW or if it meets domestic content [79, 2, 3]; how the MW test applies to heat pumps is **not confirmed** [3].

A private project with a signed development deal. Work inside that deal: the developer and its energy partner lead. Whisper Valley in Austin: the provider owns and runs four district systems for over 800 homes [16].

A blank public site next to a large new anchor. The best case for a new network. Every owner, contract and financing model is still open.

A dense district with many owners. A shared model with layered contracts. Troy's final plan puts one owner over the whole network [13].

Start with the site, not the owner. Gaiergy's view except where a source is shown. Gaiergy graphic, full report Figure 16.

7 A checklist for a city or state

Gaiergy view: 8 of the report's 15 yes or no gates; a "no" shows where work is needed



Law and authority

Gates 1 to 3

- ☐ Does a state statute name your owner type?
- ☐ Has the regulator said how it will treat the structure?



Owner and contract

Gates 4 to 8

- ☐ A large anchor customer ready to sign?
- ☐ One party owns the loop and at least one heat pump?



Money

Gates 9 to 13

- ☐ Is the credit cut of up to 15% in the model? [3, 4]
- ☐ Each financing entity named by what it is in law?



Customers and operations

Gates 14 to 15

- ☐ Who pays if heat use goes up or down?
- ☐ A qualified operator for the life of the bonds?

Read the full report: <https://gaiergy.com/research/ten-governance-and-operations/>

Numbers in brackets match the Sources list in the full report.

Sources accessed 2026-09-30. **Gaiergy view** marks Gaiergy opinion. **Not confirmed** means not found in a primary source. **Illustrative** means not a forecast.

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