DONOVAN ENERGY

first financial

REBUILD

Tomorrow's Green Policies: Financing Advanced HVAC & Building Technologies

October 3, 2024

Donovan Energy

Cincinnati based clean energy project development and finance company focused on:

Project Development - Reduce facility energy costs with LED lighting upgrades, building envelope, HVAC system optimization, and solar

Electric Vehicle Charging – Consult, design, implementation, and O&M for of electric vehicle charging infrastructure

Clean Energy Roadmap – Advisory/consulting service to develop comprehensive decarbonization strategies to meet client goals/mandates

Energy Finance – Leveraging grants, tax incentives, utility rebates and nich energy financing solutions to get projects done

Financing Advanced Energy Technologies: Key Considerations

- Upfront energy and financial modeling focused on lifecycle costing, NPV, and IRR
- Educate lenders to underwrite differently
- Add new sources of financing to the capital stack
- Creative approach to donors/fundraising

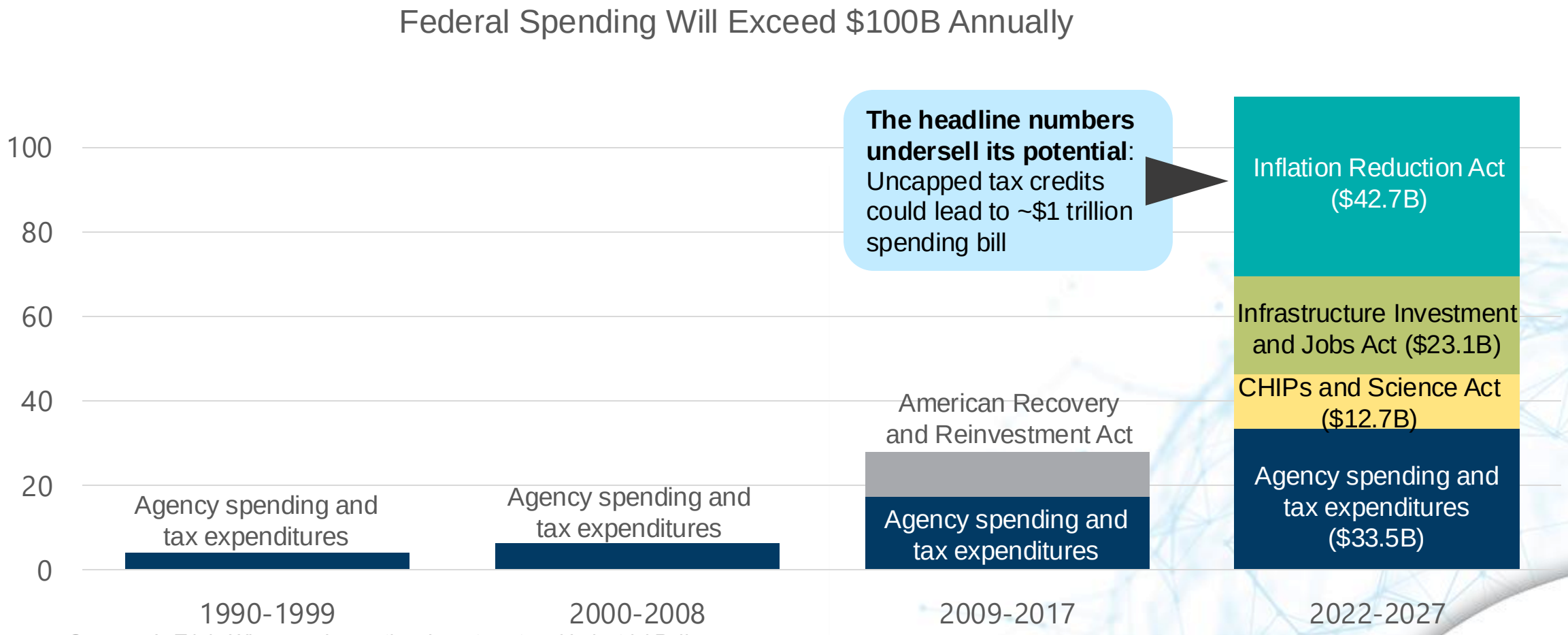
Financing Advanced Energy Technologies: The Universe

- Grants
  - Government: local, state, **federal**
  - Private: foundations, donors, corporations
- Tax Incentives
  - Local, **state, federal gov't**
  - **Abatements & exemptions: property and sales**
  - Credits & **deductions**: state and federal
- Rebates
  - Utilities
- Low-cost financing
  - Property Assessed Clean Energy financing, **Green Banks**

Federal Funding –> Local Impact

Federal Climate Spending

The Federal government has passed the most ambitious suite of climate spending in the US history



Source: RMI, *Congress's Triple Whammy: Innovation, Investment and Industrial Policy*

Federal Tax Credits

- Section 48
  - Solar
  - Geothermal
  - Battery Storage
- Section 45W
  - Electric Vehicles
- Section 30C
  - Electric Vehicle Charging Infrastructure

Section 48:

New and Improved

Prevailing Wages requirement for >1 MW

+

40% Domestic Content

+

Energy Communities

+

Projects financially benefitting low-income or Tribal communities

OR

Projects in low-income or Tribal communities

Eligible Measures:

Geothermal, solar, battery storage, electrochromic glass and more

Section 30C/45W:
EVs + Charging Infrastructure

- Section 30C
  - EV Charging Infrastructure
  - 6% - investment made in an eligible low-income or rural community
  - 30% - eligible community plus using prevailing wage/apprenticeship labor standards
- Section 45W
  - Commercial Electric Vehicles
  - Limits – $7,500 for light vehicles, $40,000 for heavy duty

Monetizing the Federal ITC

- **Tax Equity –** a taxable project sponsor holding the tax credit and filing for it directly with the IRS
- **Transferability –** the option for taxable project sponsors to sell tax credits generated by their clean energy projects to third parties.
- **Direct Pay –** a cash payment in the form of a federal tax refund for eligible tax-exempt entities.
  - ”Reimbursable Grant”

Direct Pay

- Also known as “Elective Pay”
- Enabled by the Inflation Reduction Act and applicable to most tax-exempt entities, e.g. cities, counties, non-profits, school districts, public housing authorities, etc.
- File a tax return using Direct Pay to receive cash refund from IRS for eligible investments put into service
- Applicable for (at least) 10 years: 1/1/23-12/31/32
- Ranges from 6-70% of the eligible costs for projects under 1MW

179d Energy Efficient Commercial Buildings Federal Tax Deduction

- In effect since the Energy Policy Act of 2006
- Restructured and *increased* in Inflation Reduction Act of 2022
  - 3x the value, tax-exempts can assign
- Measures:
  - Interior lighting
  - HVAC
  - Building Envelope
- Compared to ASHRAE 90.1-2007

		Total Annual Energy & Power Costs		
		25% Reduction	Each Additional % Point	50% or Higher Reduction
Prevailing Wage & Apprenticeship Requirements	Meets	$2.50/SF	$0.10/SF	$5.00/SF
	Does not Meet	$0.50/SF	$0.02/SF	$1.00/SF

The Opportunity from the Greenhouse Reduction Fund (GGRF)

Overview of the Greenhouse Gas Reduction Fund competition structure

	National Clean Investment Fund	Clean Communities Investment Accelerator	Solar for All
Competition description	**Fund 2-3 national nonprofits to partner with private capital providers** to deliver financing at scale catalyzing tens of thousands of clean technology projects	**Fund hub nonprofits to rapidly build clean financing capacity of networks of community lenders** to finance pollution-reducing projects in low-income & disadvantaged communities	**Support states, territories, Tribal & municipal governments, & nonprofits** to expand access to solar for low-income & disadvantaged communities by priming markets for investment
Number and type of grantees	**2-3** national nonprofits	**2-7** hub nonprofits	**Up to 60** states, Tribal & municipal governments, & eligible non-profit entities
Funding available	**Nearly $14B**	**$6B**	**$7B**
Expected impacts	**Historic public sector investment with the scale to attract private capital leverage in clean projects,** supporting the 2030, 2035, & 2050 climate goals of the United States and catalyzing tens of thousands of clean technology projects	**Robust pipeline of thousands of community-led clean projects with meaningful benefits**, generated by hundreds of community lenders capitalized by GGRF to start or expand clean lending in underserved communities	**Energy bill savings and energy resiliency for millions of underserved American households** via states, Tribal & municipal governments, & other recipients creating new or expanding existing low-income solar programs across the country

Solar for All in the Cincinnati Region

Ohio Air Quality Development Authority
$156.12M

Industrial Heartland Solar Coalition
$156.12M

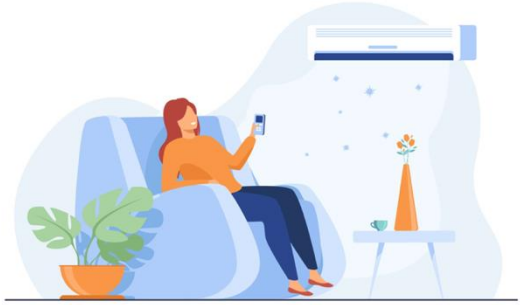
Kentucky Energy & Environment Cabinet
$62.45M

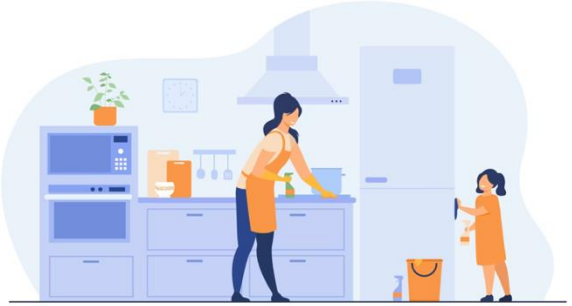
Indiana Community Action Association
$117.47M

DOE Home Energy Rebates

The IRA outlines two rebate programs under the federal Department of Energy to assist households with energy-efficient home upgrades

State energy offices and Tribes will develop and administer the programs





Home Electrification and Appliance Rebates Program (Previously HEEHR)

- $4.5B through FY2031
- Providing **point-of-sale discount** to consumers for certain high-efficiency electric appliances and energy efficiency products
- Available for households whose income is below 150% of the area median
- **Ohio Department of Development - $125,000,000**
- **Kentucky Energy & Environment Cabinet - $67,000,000**

Home Efficiency Rebates Program (Previously HOMES)

- $4.3B through FY2031
- Providing **savings-based incentives** for whole-home efficiency upgrades/retrofit
- Rebates double for low-moderate income households
- **Ohio Department of Development - $125,000,000**
- **Kentucky Energy & Environment Cabinet - $67,000,000**

Image source: Freepik

Home Energy Rebate Overview

- Single family and multi-family
- New construction and renovation/upgrades
- Energy audits, grants, and product rebates
- Rollout: Q1 2025 (estimated)

State Funding –> Local Impact

Ohio Air Quality Development Authority:

Clean Air Improvement Program

- Scope: Could be applicable to most CRE deals including new construction and major redevelopment
- Metrics: Reduce GhG emissions from the built environment
- Benefit: Sales and property Tax *Exemption* for qualifying energy infrastructure, enabled through privately-place conduit bond
- Program Pathways
  - 15% energy performance: ECMs are eligible
  - 50% energy performance: efficiently designed building

The Local Opportunity: Building a Cincinnati Green Bank

Federal funding potential for energy efficiency and solar in Hamilton County

Funding Source	Amount (estimated) for Hamilton County	Total Grant
Solar for All: Ohio Air Quality Development Authority	$10M	$156M
Solar for All: Industrial Heartland Solar Coalition	$10M	$156M
Home Energy Rebates: Ohio Dep't of Development	$15.5M	$250M
Total Funding	**$35.5M**	**$562M**

All numbers above are estimates and extrapolations, calculated for discussion purposes only. Program guidelines and funds should be made available in Q1 2025.

Building a Cincinnati Green Bank

- Key Partners
  - The Port, Cincinnati Development Fund, Cincinnati Business Committee, Cincinnati Regional Business Committee, City of Cincinnati, Hamilton County
- Planning and strategy started mid-2023
- Harness competitive resources layered with local programs
- Develop a one-stop-shop center of excellence

Bring to the market new and expanded financing programs anchored by maximizing available grants, tax incentives and rebates

Green Banks provide focused financing on decarbonization for the underserved

Green Banks mix low-cost public financing with private sector to deliver cheaper overall financing & produce cheaper clean power.

Leverage Public & Philanthropic Funds as a catalyst to attract private sector investments

Risk Mitigation for Private Investors by offering financial tools, green banks reduce the perceived risk for private investors.

Focused Impact on Underserved Communities that make clean energy and energy efficiency projects more accessible.

Why We Need a Green Bank in Cincinnati

The Phase 1 report outlines the strategic groundwork for establishing the Cincinnati Green Bank, focusing on the role it can play in advancing the region's clean energy goals.

Needed infrastructure for our region to participate in federal funding programs through the IRA. Namely, an organized and centralized program mgr to braid together disparate funding sources, e.g. "One Stop Shop"

Financing gap in the Cincinnati region for clean energy projects, particularly in underserved communities.

Stakeholder engagement has expressed strong interest to develop Green Bank programs to catalyze local clean energy projects.

Check out the newly released: Cincinnati Green Bank-Phase 1 Market Analysis

https://cindevfund.org/lending/green-bank/

Case Studies

Example Rooftop Solar Project on Multifamily Housing

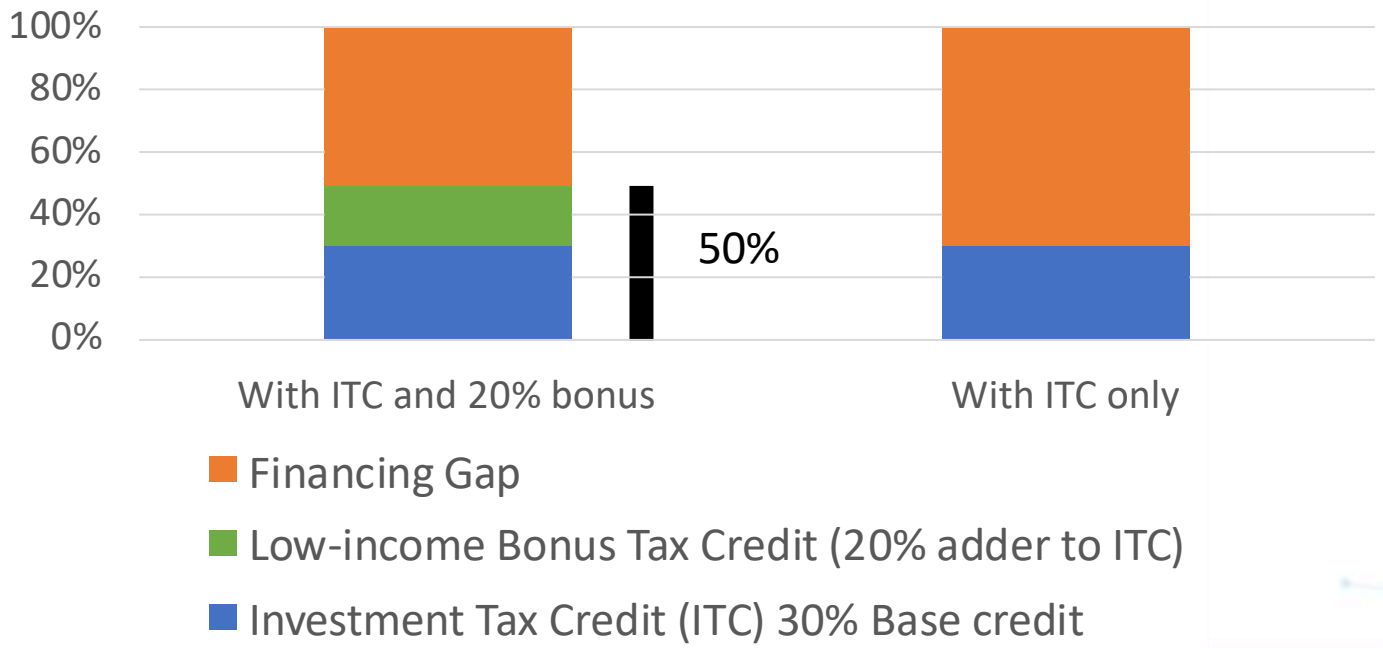
Scenario:

- Solar Project – 160kW installed on 40-unit building

Total Project Costs: $400,000

Base Credit: Investment Tax Credit (ITC) 30% base credit.

Bonus credits used: Low-income Bonus Tax Credit (20% adder to ITC) &



Source	With ITC and 20% bonus	With ITC only
ITC Base Credit (30%)	$120,000	$120,000
Low-income Bonus (20%)	$80,000	$0
Financing Gap	$200,000	$280,000
TOTAL PROJECT COST	$400,000	$400,000

Source: U.S Dept of Housing and Urban Development

Hypothetical Multifamily Building – New Construction – 150,000sf/100 units

Sec. 45L Tax Credit for high-efficiency homes	$2,500 per unit for meeting ENERGY STAR X 100 units	**$250,000** tax credit
Sec. 179D Tax Deduction for commercial building energy efficiency improvements	$3.50 per square foot for 35% reduction in energy use intensity across 150,000 square feet	$525,000 tax deduction worth **$131,250** at 25% tax rate.
Sec. 48 Investment Tax Credit for clean energy investment	30% base tax credit on $400,000 investment in rooftop solar plus 10% low-income bonus credit	**$160,000** tax credit
Sec. 30C EV Tax Credit for EV charging infrastructure	30% tax credit on $100,000 investment in EV charging installations	**$30,000** tax credit
Greenhouse Gas Reduction Fund (i.e. Green Bank)	Low-interest project financing	**$600,000** in interest savings
Total Savings	Not including energy/operations cost savings or local/state incentives	**$1,171,250**

usgbc.org

What does our community need to accelerate this work?

Why isn't this work already happening?

- Community outreach & education
- Technical training for designing advanced energy solutions
- Policy alignment
- Low-cost financing
- Utility rebates

Questions and Discussion

Andy Holzhauser (CPA, Inactive)

Partner, CFO

Donovan Energy

aholzhauser@DonovanEnergy.com

513.309.7081


Frost
Brown Todd
ATTORNEYS

REBUILDING WITH FINANCING

Frances Kern Mennone

REBUILD 2024

575+

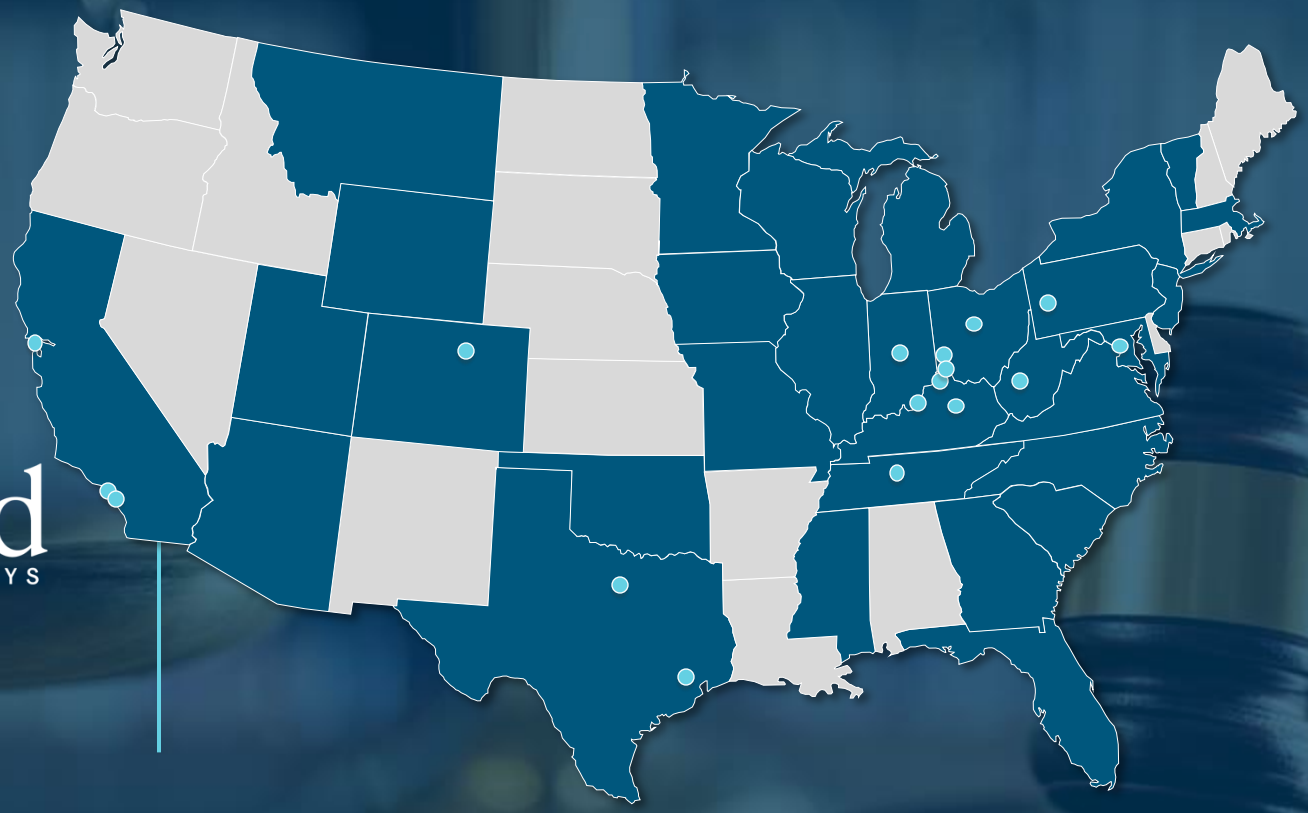
LEGAL TEAM

Frost Brown Todd

ATTORNEYS

400+

BUSINESS PROFESSIONALS



Office Location Licensed to Practice State

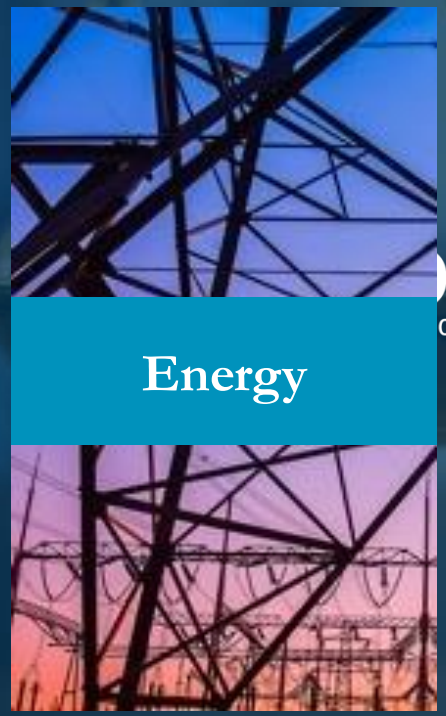
17

OFFICES

Charleston
Cincinnati
Columbus
Dallas
Denver
Florence
Houston
Indianapolis
Lexington
Los Angeles
Louisville
Nashville
Orange County
Pittsburgh
San Francisco
Washington, D.C.
West Chester

Our membership to Multilaw, a global network of independent law firms located in over 150 markets worldwide, enables us to provide clients with seamless legal support virtually anywhere.

Deep Industry Knowledge



Energy

Finance

Health Care

Manufacturing

Technology

Overview: What is PACE Financing?

Mechanism to finance energy efficiency or water conservation improvements

Repaid through property tax collections

Secured by a voluntary assessment levied against real property with same lien status as property taxes

Why is PACE so popular?

- Benefits to property owners:
  - Achieve low cost, long-term financing for improvements that lower energy expenses
  - Loan obligation is "off-balance sheet" – (i.e., lien against property, rather than a debt of the owner)
  - Repayment obligation transfers with the property benefiting from the improvements

- Benefits to local governments:
  - Creates local jobs
  - Directly helps local businesses lower expenses
  - Encourages upgrades and improvements to building stock in the community
  - **No cost to the local government!**

Assessment Districts: Generally

Old concept

- First used in Philadelphia in 1736

Used to finance public purposes and "assess" the benefitting properties

- More than 37,000 assessment districts nationwide
  - Water and sewer service
  - Parks
  - Sidewalks
  - Lighting
  - Downtown renewal

PACE extends this financing concept to include private energy efficiency and water conservation improvements as the public purpose

How PACE is Sweeping the Nation State-by-State

State legislature enables PACE law

- State legislature declares private energy improvements to be a public purposes and passes legislation authorizing use of property tax assessments for energy projects

Local governments with taxing powers establish programs

- Establishing a program requires action by local government

Property owners apply to participate

- Property owners within jurisdiction with a program petition local government to participate in and request the assessment

Current Numbers:

- First State: California (2008)
- Enabled in 37 states and Washington D.C.
- Active in 22 states and Washington D.C.

Eligible Mechanical Improvements

Air conditioner and furnace upgrades
Boilers
Combined Heat & Power systems
Pumps, drives, and motors
Industrial processes
Elevators and escalators

Eligible Water Improvements

Low or no flow fixtures
Water conservation improvements

Eligible Lighting Improvements

LED fixtures
Automated controls
Parking lot lights

Eligible Envelope Improvements

Roofing with insulation
Windows and doors
Insulation
Green roof

Commercial vs. Residential Applications

- "C-PACE" – Commercial PACE
- "R-PACE" – Residential PACE

- Residential PACE programs are currently enabled in 3 states

- R-PACE has additional administration and volume challenges compared to C-PACE

Benefits of PACE Assessment vs. Traditional Financing:

- Non-Recourse and requires NO down payment
- Can provide 100% of an energy project's hard and soft costs
- Provides fixed payments with low interest rates
- Extended repayment terms of up to 30 years allow most energy projects to have immediate positive cash flows since some improvements, such as windows and elevators, have higher upfront costs and lower energy savings PACE assessments remain with the property, not the business, when sold or transferred
- The PACE loan is essentially off-balance sheet, and is not a direct lien against the property owner - it is a lien against only the property
- PACE assessment is the ONLY repayment obligation and is attached to the property tax record and NOT the business, the business owner doesn't tie up other credit lines for essential operating expenses

CPACE in Ohio- $760M

- Commercial property-assessed clean energy (CPACE) via Ohio Air Quality Development Authority (OAQDA)
  - Available statewide

- Southwestern Ohio 2.0
  - New process in Hamilton County

Frances Kern Mennone

Managing Director, Industry Consultants & Advisors
fmennone@fbtlaw.com
513.369.4906
Cincinnati

thank you

Frost Brown Todd ATTORNEYS

Technologies Set to Capture Green Funding and Finance

Alex Helsinger – Account Manager

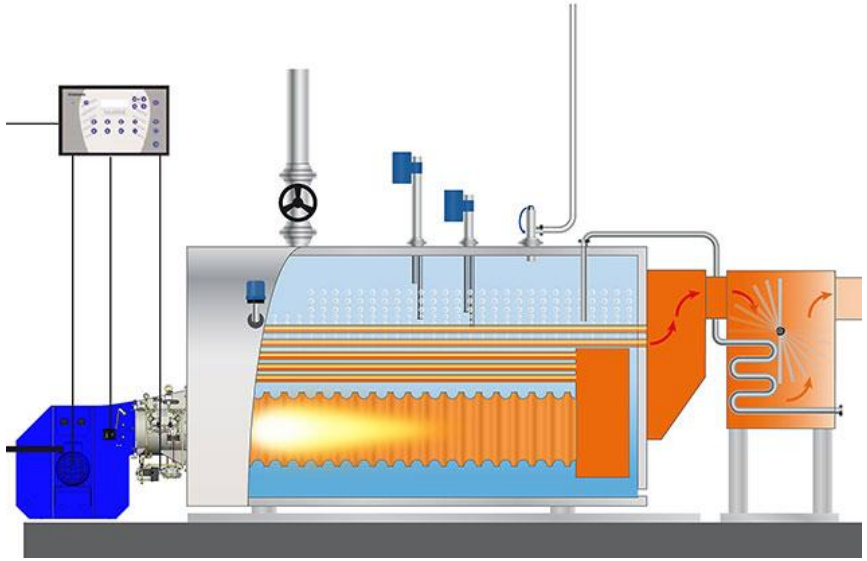
October - 2024

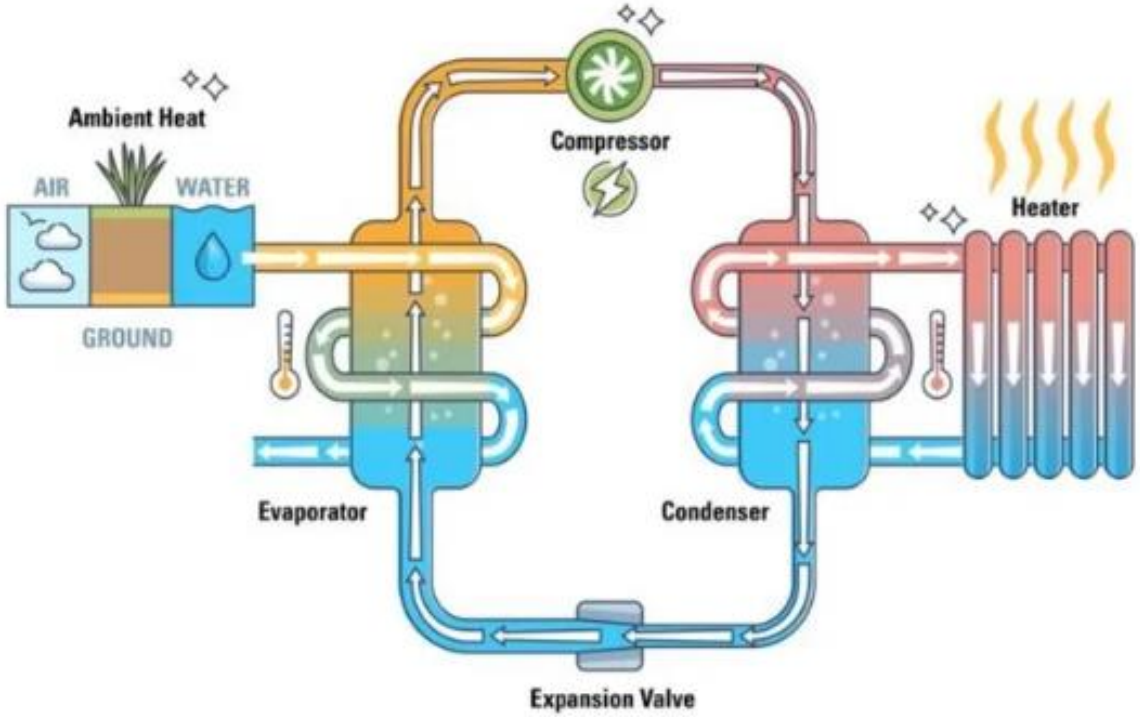
#1 Heat Pumps

Generating BTU's

VS

Moving BTU's





COP: 0.5-0.9

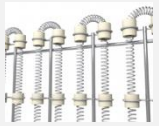
COP: 1.5-7.0

#1 Heat Pumps

Heat Pumps

Resistance

Resistance Coil



Resistance Boiler

Light Commercial

Split Systems

Packaged Terminal

RTU

Large Commercial

VRF

RTU

WSHP

Applied

Air to Water

Water to Water

Domestic Water

Electrification Systems

Chiller-Heater Systems

Chillers can provide cooling as well as heating by configuring them with **heat recovery or as heat pumps**. Heat recovery is a common, extremely efficient first step to electrification.

Storage Source Heat Pump Systems

Thermal energy storage provides operational flexibility by capturing and storing reclaimed energy to heat the building efficiently and can optimize heat pump capacity.

VRF Systems

Trane® / Mitsubishi Electric VRF heat pumps and heat-recovery systems offer versatile electric zoned heating and cooling.

Packaged Units and Split Systems

Efficient and effective heating with integrated heat pumps and hybrid systems.

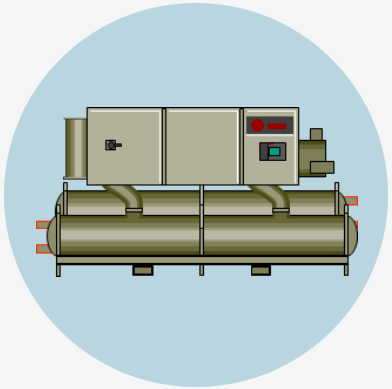
Domestic Hot Water Systems

$Heat_2O$ water heater systems are designed to produce high volume domestic hot water for commercial facilities in any climate.

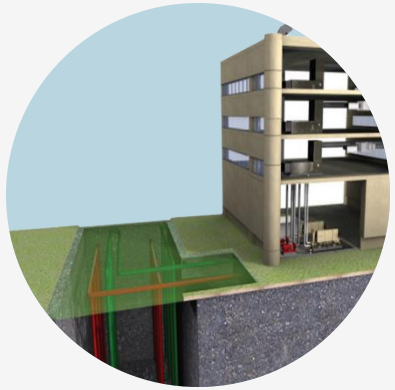
Heat pumps can be **3 times more efficient** than other forms of electric heating

Heat Sources

Application considerations



Cooling Load
(Heat Recovery)

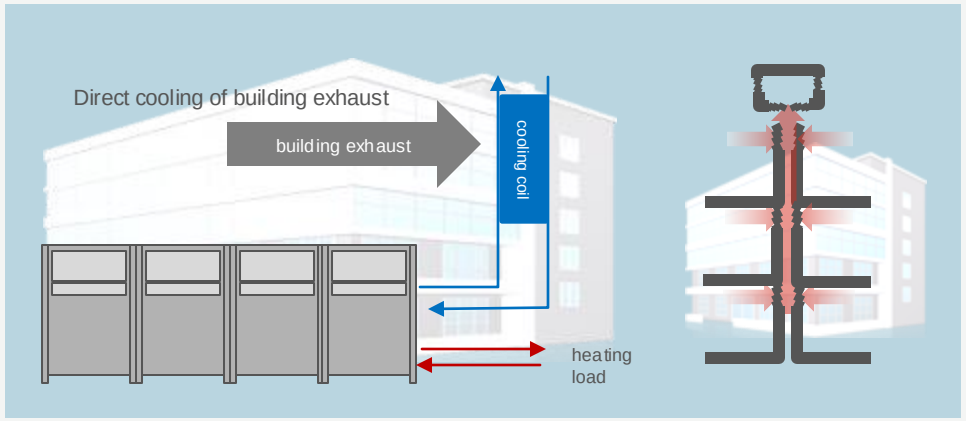


Geothermal loop

Lake, river, pond

Storm and sewer

Ambient Air



Exhaust air coil

Thermal energy storage battery
"Storage Source Heat Pump"

#2 Thermal Battery™ Cooling System

$ ITC Technology

What is it?

- A Trane-controlled chiller plant enhanced with thermal energy storage.

What does it do?

- Chiller plant operates like a battery, charging Ice Bank® energy storage tanks (filled with water) when excess or inexpensive energy is available.
- And discharging when demand or cost is high, or when the utility asks for the discharge to occur.

How can ice be used for heating?

5,000,000
4,000,000
3,000,000
2,000,000
1,000,000
-

Available energy to collect and store for tomorrow's heating requirements

Tomorrow's heating requirements

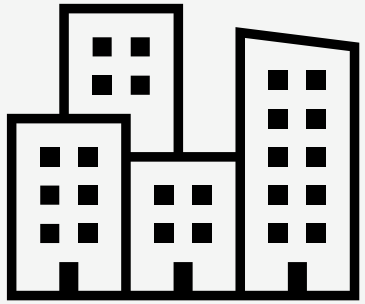
1 6 12 18 24 6 12 18 24

Heating Load Btus
Cooling Load Btus

#3 Ground Source Systems

$ ITC Technology

Heat Pump Technology

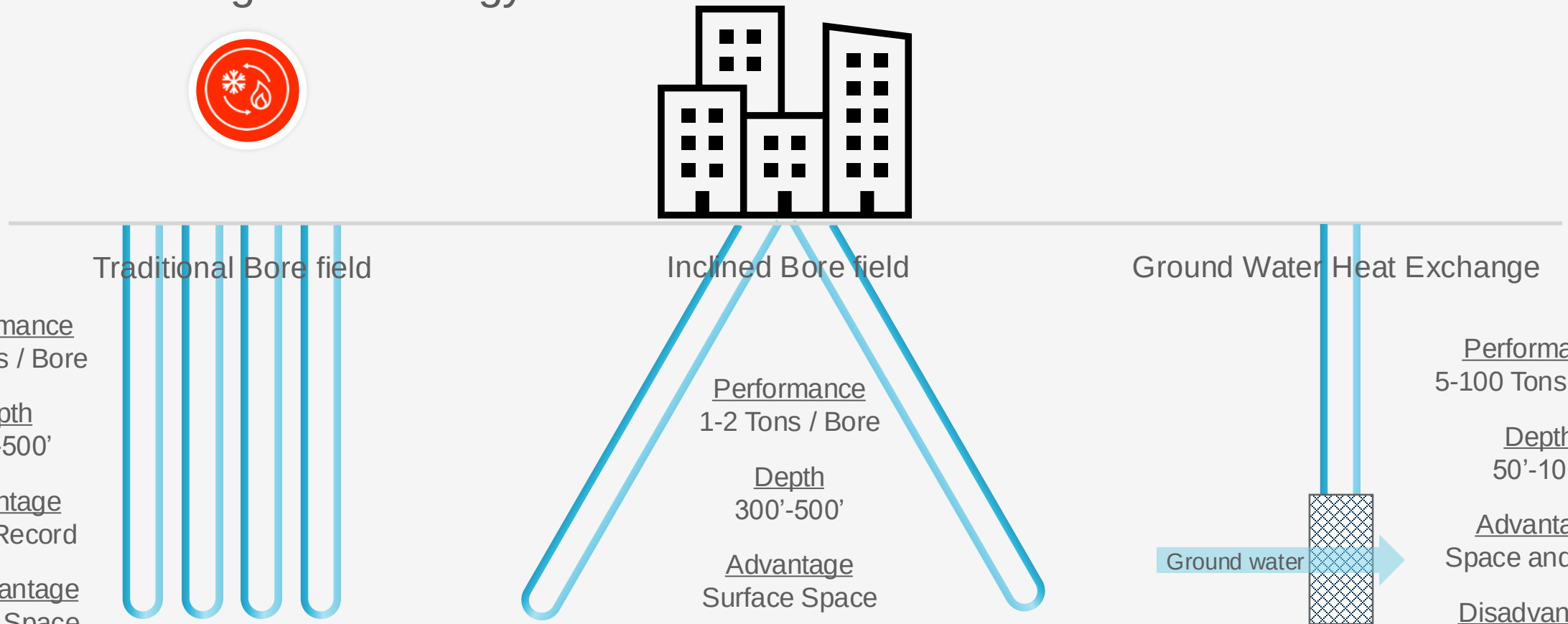


Heat Exchange Technology

#3 Ground Source Systems

$ ITC Technology

Heat Exchange Technology



Traditional Bore field

Performance
1-2 Tons / Bore

Depth
300’-500’

Advantage
Track Record

Disadvantage
Cost & Space

Inclined Bore field

Performance
1-2 Tons / Bore

Depth
300’-500’

Advantage
Surface Space

Disadvantage
Cost

Ground Water Heat Exchange

Performance
5-100 Tons / Bore

Depth
50’-100’

Advantage
Space and Cost

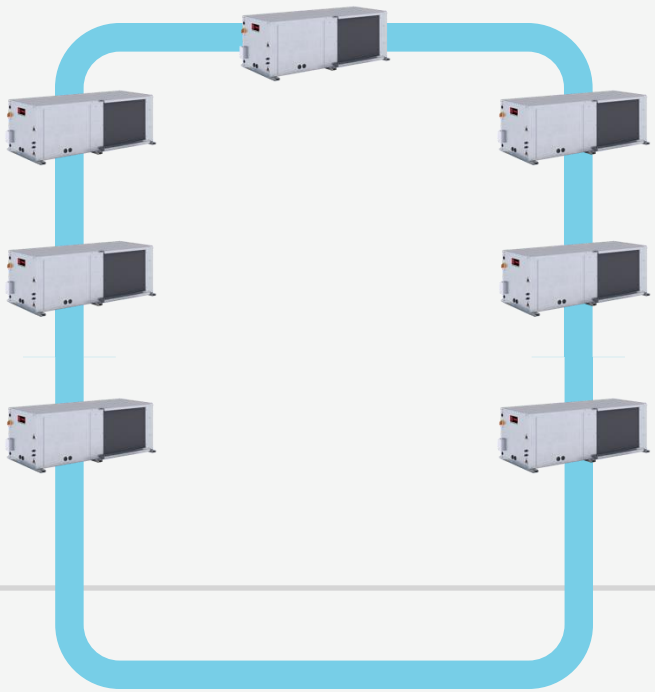
Disadvantage
Permitting

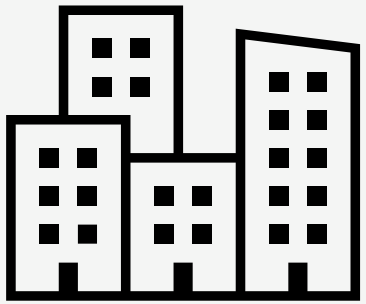
#3 Ground Source Systems

$ ITC Technology

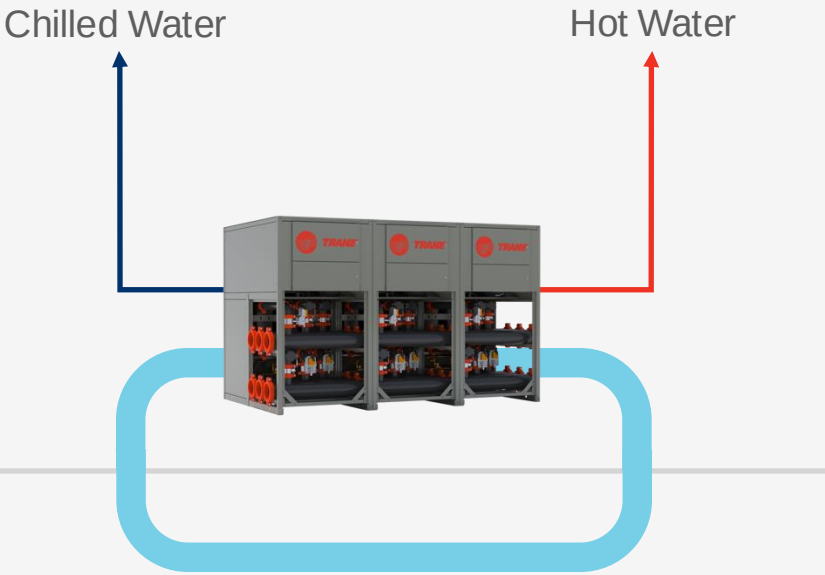
Heat Pump Technology

Distributed Geothermal





Centralized Geothermal



#3 Ground Source Systems

$ ITC Technology

Distributed Geothermal

Horizontal,
Vertical, Console,
RTU

Centralized Geothermal

Modular

Applied

PJM Price Spike

Long-Term Solutions

Utility Dive

PJM capacity prices hit record highs, sending build signal to generators

PJM capacity prices hit record highs, sending build signal to generators. Consumers across the PJM Interconnection footprint will pay $14.7...

1 month ago

BAS is Key

- Thermal Battery $
- Electric Battery $
- Geothermal $
- Large Asset Peak Efficiency

$ IRA Funded

THANK YOU