



Energy Efficiency Stakeholder Meeting

April 18, 2024

Agenda

1. Re-cap of Last Meeting
2. New Jersey Energy Efficiency Programs
3. Energy Efficiency Updates
 - NJCEP Updates
 - New Construction Program Update
 - Community Energy Plan Grant / Community Energy Plan Implementation Grant Update
 - Benchmarking Update
 - Utility Updates
 - Regulatory Updates
 - Triennium 2 Filings Review
4. Guest Presentation – Ground Source Heat Pumps, Geothermal, and Air to Water Heat Pumps
5. General Q&A
6. Items of Interest
7. Next Meetings



Recap of Last Month



March Meeting Recap

What we covered:

- ✓ NJCEP Updates
 - ✓ NJCEP New Construction Program
 - ✓ Community Energy Plan Grant / Community Energy Plan Implementation Grant Update
- ✓ Utility Updates
- ✓ Regulatory Updates
 - ✓ Triennium 2 Filings Review
- ✓ Guest Presentation: Air Source Heat Pumps
- ✓ Q&A



New Jersey Energy Efficiency Programs



New Jersey Energy Efficiency Programs

www.NJCleanEnergy.com/TRANSITION

NJBPU and NJCEP Administered Programs



- New Construction (residential, commercial, industrial, government)
 - Large Energy Users
 - Energy Savings Improvement Program (financing)
 - State Facilities Initiative*
 - Local Government Energy Audits
 - Combined Heat & Power & Fuel Cells
- *State facilities are also eligible for utility programs

Utility Administered Programs



- Existing buildings (residential, commercial, industrial, government)
- Efficient Products
 - Lighting & Marketplace
 - HVAC
 - Appliance Rebates
 - Appliance Recycling

NJBPU and Utility Co-Administered Programs



Energy Efficiency Program Information

www.NJCleanEnergy.com/TRANSITION



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HOME
RESIDENTIAL
COMMERCIAL, INDUSTRIAL AND LOCAL GOVERNMENT
RENEWABLE ENERGY

NEW JERSEY'S CLEAN ENERGY PROGRAM

ABOUT NJCEP

BOARD OF PUBLIC UTILITIES

POLICY UPDATES & REQUEST FOR COMMENTS

CALENDAR

CLEAN ENERGY STAKEHOLDER GROUPS - MEETINGS

GRANTS & SOLICITATIONS

TRAINING RESOURCES

PRESS ROOM

PUBLIC REPORTS AND LIBRARY

CONTACT US

New Jersey's Energy Efficiency Program Transition

Transición del Programa de Eficiencia Energética de Nueva Jersey

Electric Utility Contact Information

Utility Name	Commercial & Industrial Programs	Residential Programs
Public Service Electric & Gas	Website and Email Phone: 844-300-7734	Website and Email Phone: 855-846-2895
Atlantic City Electric	Website, Email and Phone: 833-223-7297	Website, Email and Phone: 866-353-0007
Jersey Central Power & Light	Website, Email and Phone: 800-662-3115	
Rockland Electric	Website, Email and Phone: 877-434-4100	

Gas Utility Contact Information

Utility Name	Commercial & Industrial Programs	Residential Programs
Public Service Electric & Gas	Website and Email Phone: 844-300-7734	Website and Email Phone: 855-846-2895
New Jersey Natural Gas	Website and Email Phone: 877-455-6564	Website and Email Phone: 877-455-6564
South Jersey Gas	Website and Phone: 888-263-7372	Website and Phone: 833-493-0691
Elizabethtown Gas	Website and Phone: 888-263-7372	Website and Phone: 833-493-0692

Check the GIS utility finder to determine who your provider or providers are.



Program Updates

- Energy Master Plan Update
- Solar Scam Warning
- School and Small Business Energy Efficiency Stimulus Program
- Energy Efficiency Program Transition

Program Literature



Program Literature Applications and Brochures
Download the latest program materials

Energy Master Plan



Follow Us:  

FREQUENTLY ASKED QUESTIONS

Frequently asked questions (FAQs) are grouped by the following subject areas; you can jump to any section by clicking on one of the topics below:

- General FAQs
- Commercial & Industrial Programs FAQs
- Residential Programs FAQs
- Contractor Specific FAQs
- Questions

General FAQs

Why are some energy efficiency programs now managed by the utility companies? (updated August 9, 2022)

The transition of the administration of certain energy efficiency programs from NJCEP to the utilities occurred in accordance with the mandates from the Clean Energy Act of 2018. These new programs allow the utilities to work directly with customers to achieve energy savings. The Board considered the following in establishing this transition:

- Programs that rely heavily on the use of contractors will be handled at the utility level, where the utility companies can build strong relationships and lead co-branded advertising and marketing efforts.
- Utilities will handle programs that rely on customer data or advanced metering infrastructure (AMI) to streamline customer data access layers and minimize the sharing of data to protect customer privacy.
- Utilities are well-suited to deliver certain energy efficiency programs, such as those that are based on existing customer relationships and that rely on utility data and systems.
- Utility administration works best for programs that can leverage utilities' knowledge of energy consumption, customer demographics, workforce infrastructure, and existing customer relationships within their service territories. Utility access – and increased customer access – to energy use data enables the design of more personalized services and programs, targeted outreach, and individualized solutions for customers.
- Utilities can offer flexible financing options, such as on-bill repayment.
- Customers may have more "brand awareness" and direct communication with their utility, which facilitates the broader adoption of energy efficiency measures.



Energy Efficiency Updates:

New Jersey's Clean Energy Program



More NJCEP Information

Quarterly Newsletter:

www.NJCleanEnergy.com/NEWSLETTER

Clean Energy Program Filings:

www.NJCleanEnergy.com/FILINGS

Clean Energy Program Monthly Progress to Goal Report

www.NJCleanEnergy.com/EE - Meeting Materials Archive

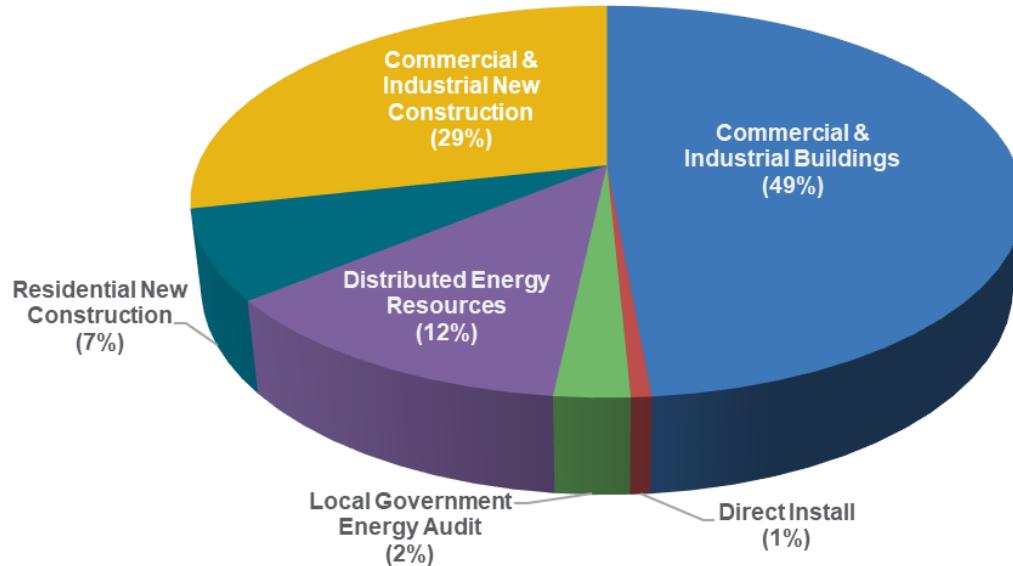
New in FY24:
Progress to Goals Report is posted with post-EE
Stakeholder Meeting resources after this
meeting



Budget Break-down by Program

FY24 TRC Managed Programs

Incentive Budget: \$148,502,129



Energy Efficiency Programs FY24

NJCEP/TRC Managed

Closed

- Residential Products & HVAC
- Residential Existing Homes
- Direct Install

Closing Out

- C&I Buildings (existing buildings)
- SmartStart Retrofit
- Pay for Performance Existing Buildings
- School & Small Business Stimulus Program (federally funded)

NJCEP/TRC Managed

Open

- New Construction
Was: Residential New Construction, SmartStart New Construction, Pay for Performance New Construction, Customer Tailored Energy Efficiency Pilot New Construction
- Large Energy Users
- Local Government Energy Audit
- Distributed Energy Resources

BPU/Utility Managed

Comfort Partners



What is the New Construction Program?

PROPOSED PROGRAM

ABOUT THE PROGRAM

Three pathways to fit your needs to achieve greater energy savings

INCENTIVES

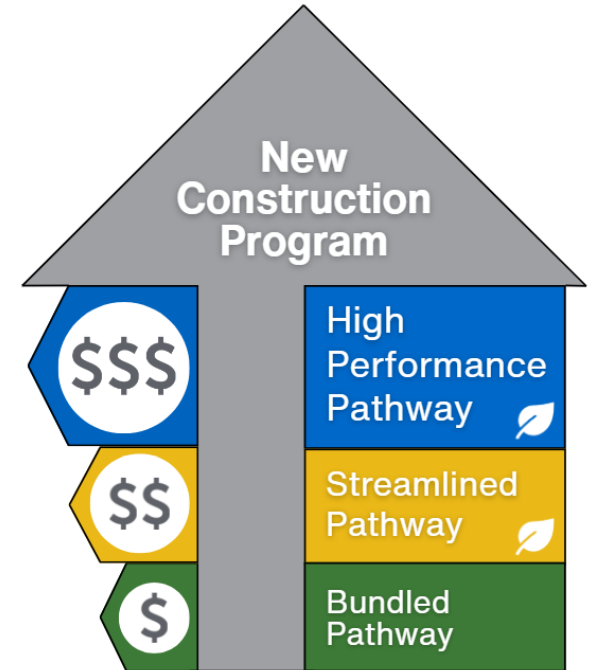
Based on selected pathways and size

WHO IS ELIGIBLE

All new construction buildings or eligible major renovation projects

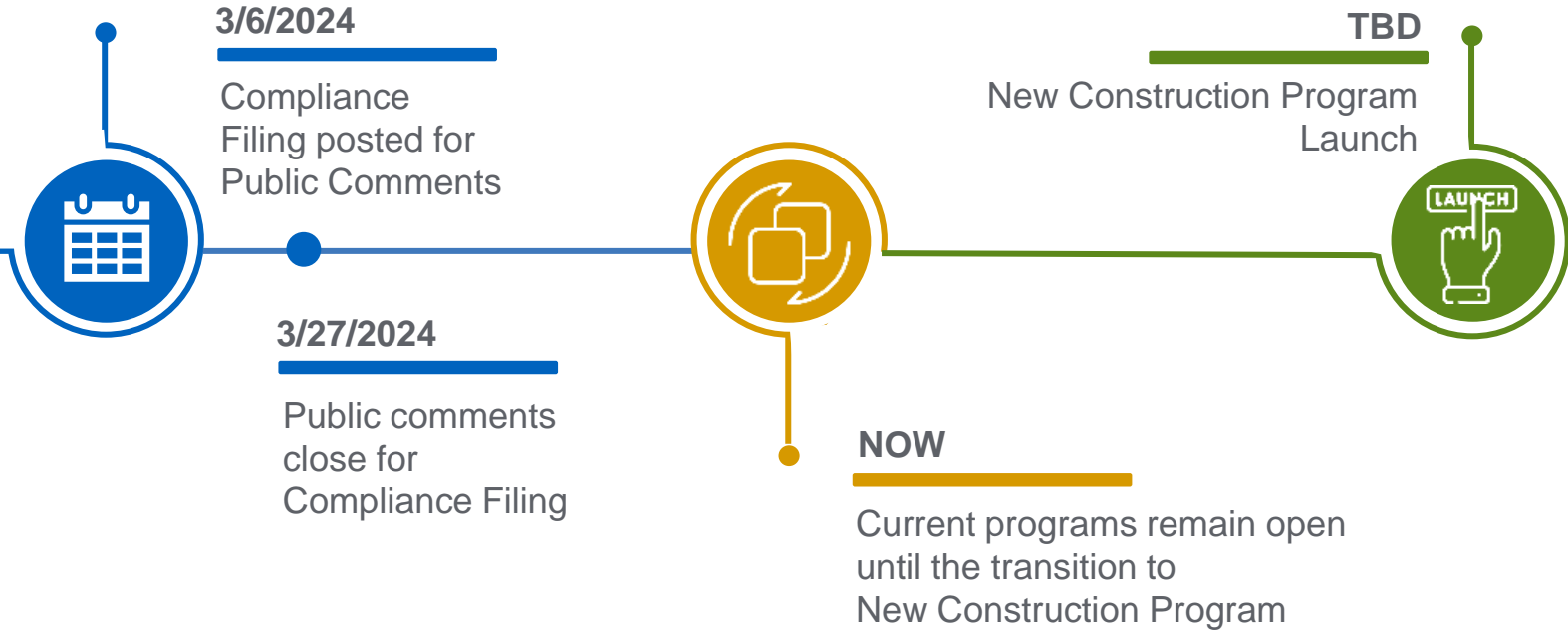
ADDITIONAL OPPORTUNITIES

Incentives for energy efficiency beyond code requirements, encouraging greater energy savings



New Construction Program Timeline

PROPOSED PROGRAM



Community Energy Plan Grant & Community Energy Plan Implementation Grant Update

These two grant programs support municipalities with community-level clean energy initiatives.

Community Energy Plan Grant (CEPG) Program

- Grants for municipalities to develop community energy plans aligned with their respective needs
- Two grant award levels
 - \$10,000
 - \$25,000 – overburdened municipalities

Community Energy Plan Implementation (CEPI) Grants

- Grants for municipalities to implement community energy projects
- Applicants eligible for \$250,000 with possibility of additional awards if funds remain after all priority projects are funded.

Sustainable Jersey will provide Technical Assistance for applicants, with a focus on assistance for overburdened municipalities



Community Energy Plan Grant & Community Energy Plan Implementation Grant Update

New Application Deadline!

Friday, May 24

Applications must be submitted before 5 pm Eastern time

- Applications for both programs available on the NJCEP website at NJCleanEnergy.com/CEP
- Questions can be submitted to: community.energy@bpu.nj.gov

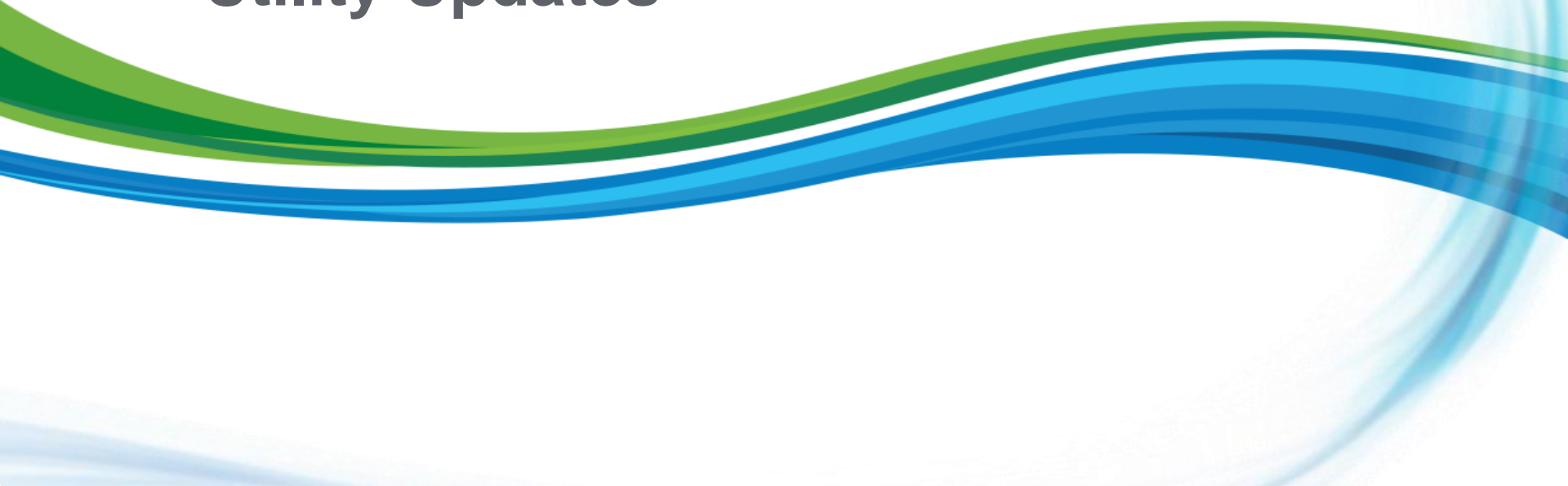


Benchmarking Update

- As of April 2nd, postal mailings were sent to commercial building owners
 - Building owners should expect to receive a notice within the first two weeks of April
- The submission deadline is July 1, 2024 for this reporting year (2023)
 - Building owners will have a 90-day grace period after the July 1st date to report
- A Helpdesk is available to answer questions about the benchmarking program and Portfolio Manager
 - To view frequently asked questions, submit a general inquiry or an exemption request, receive instructions for how to report, and obtain training resources and important updates: <https://nj.beam-portal.org/helpdesk/>
 - To submit an inquiry to the Helpdesk, please visit: <https://nj.beam-portal.org/helpdesk/> and select "New Ticket"
 - To respond to a previously submitted ticket or a received email, please email njbpubenchmarking@beam-portal.org or call phone number 888-533-4571



Energy Efficiency Updates:
Utility Updates



Utility Updates

NJ Energy Efficiency Stakeholder Meeting

Kyle Haddock and Phil Madnick, RECO on
Behalf of The NJ Joint Utilities – April 18, 2024



Utility Updates

- **All utilities submitted their filings for the Second Triennium (1/1/2025-6/30/2027), as well as their extension request for the First Triennium (to cover 7/1/2024-12/31/2024)**
 - Working through extensive discovery requests
- **Joint Utility Contractor Calls**
 - Residential HVAC contractor event- Spring- scheduled for April 18th
- **Community Events**
 - ACE is participating in the following community outreach events
 - **Bridgeton Wellness Expo**; April 18 from 6pm – 8pm; 550 Buckshutem Rd, Bridgeton, New Jersey 08302
 - **Cape May Zoo Earth Day Celebration**; Saturday, April 20 from 10am-3pm
 - **Lower Township Chamber of Commerce – 2nd Annual Business to Community Night** ; April 23 from 4-7pm; Naval Air Station Wildwood
 - **ACUA Annual Earth Day Event**; April 28 from 10am – 4pm; 6700 Delilah Road Egg Harbor Township, NJ 08234
 - **Appliance Recycling Event**; May 4 from 8am-1pm; Lowe's; 3171 Rte 9 S, Rio Grande, NJ, 08242
 - JCPL will be attending the Hope Environmental Commission Green Team Fair in Hope Township, April 27th and the Concordia Green Team Fair in Concordia, May 4th.
 - South Jersey Gas will be tabling an event at Stockton University for the Annual Successful Aging Festival, May 15th

2024 NEW JERSEY

SUSTAINABILITY
SUMMIT



MAY 3, 2024
9:00 AM – 4:00 PM
BELL WORKS, HOLMDEL, NJ

Utilities supporting green teams,
serving as exhibitors and sponsors



[2024 Sustainability Summit Webpage](#)



Utility Updates

Earth Month Campaigns

- Rockland Electric – *Make Everyday Earth Day*
 - Unique Earth Day discounts on our marketplace [oru.com/save](https://www.rocklandelectric.com/save) on smart thermostats, EV chargers, and water saving products
 - Behavioral Home Energy Report Marketing Module promoting MyORU Store
 - Campaign promoting FREE Home Energy Assessments via bill inserts and newsletter
- PSE&G
 - External communications promoting the Earth Month smart thermostat sale
 - Bill inserts, Residential e-newsletter, Google Postcard , MyEnergy Postcard , MyEnergy Challenge Email, PSEG.com Homepage Banner, Social media on PSEG's Facebook, Instagram, and X accounts
 - PSE&G Spring 2024 Residential Trade Ally Event
 - Pre-Registration is required: <https://www.eventbrite.com/e/pseg-spring-2024-awards-ceremony-and-residential-trade-ally-event-tickets-851101005017>
- NJNG
 - Exclusive Earth Day smart thermostat discounts promoted via the NJNG Marketplace (4/3 – 4/30)
 - Omnichannel marketing approach communicating promotion to residential customers using historical marketplace purchase data and propensity modeling for further personalization and segmentation.
 - Primary channels: marketplace banner, direct mail postcard, social ads, social posts, drip emails and customer newsletter
- ETG, and SJG are offering Earth Day promotions on their Efficient Products marketplaces
 - www.elizabethtowngasmarketplace.com
 - www.southjerseygasmarketplace.com

New Jersey Natural Gas - Major Spring Events



We're celebrating 21 years of ocean discovery, coastal stewardship and energy conservation. Ocean Fun Days is an eco-friendly event the whole family can enjoy! Includes an Energy Scavenger hunt featuring the BPU!

Dates (both days will run 11 a.m. – 3 p.m.)

- **May 18** - Island Beach State Park, Seaside Park
- **May 19** - NJ Sea Grant Consortium, Sandy Hook

Hit an energy-saving home run this season with New Jersey Natural Gas and the Lakewood BlueClaws. During the games, NJNG's SAVEGREEN team will be sharing information on energy efficient tips and resources – plus some great swag.

Dates (all games start at 7:05 p.m.)

- **May 5** – Medusas, Night 1
- **May 31** – Medusas, Night 2
- **June 29** – Irish Heritage Night
- **August 15** – Medusa, Night 3

NJNG x BlueClaws Games



Current Heat Pump Incentives

Measure Description	Minimum Efficiency Requirements†	Rebate Amount – ACE	Rebate Amount – JCP&L	Rebate Amount – PSE&G	Rebate Amount – RECO
Air-Source Heat Pump – Tier 1	SEER ≥ 16, EER ≥ 12.5, HSPF ≥ 9	\$600	\$600	\$450	\$300
Air-Source Heat Pump – Tier 2	SEER ≥ 18, EER ≥ 13, HSPF ≥ 10	\$1,000	\$1,000	\$600	\$390
Air-Source Heat Pump – Cold Climate – Tier 1	SEER ≥ 16, EER ≥ 12.5, HSPF ≥ 9, and COP ≥ 1.75 at 5°F	\$1,000	\$1,000	\$600	\$300 *CH: \$1,600 per 10 MBH
Air Source Heat Pump – Cold Climate – Tier 2	SEER ≥ 18, EER ≥ 13, HSPF ≥ 10, and COP ≥ 1.75 at 5°F	Does not have a Tier structure for this equipment.	Does not have a Tier structure for this equipment.	\$600	\$390 *CH: \$1,600 per 10 MBH
Ductless Mini-Split Heat Pump	Single: SEER ≥ 20, EER ≥ 12.5, HSPF ≥ 10 Multi: SEER ≥ 18, EER ≥ 12.5, HSPF ≥ 10	\$400	\$400	\$240	\$240
Ductless Mini-Split Air Conditioning	SEER ≥ 20, EER ≥ 12.5	\$500	\$500	\$300	\$270
Heat Pump Water Heater	ENERGY STAR Certified	\$750	\$750	\$600	\$450 *CH: \$1,000

- RECO's Clean Heat (CH) Pilot program offers enhanced heat pump rebates for customers interested in electrification.
- Additionally, residents with low to moderate income may be eligible for an additional incentive of \$200 (eligibility based on income at or below 400% FPL)

Energy Efficiency Updates:

Regulatory – State & Federal



Triennium 2 Filings Review (Docket No. QO23030150)

- February 26, 2024 – Presiding Commissioners’ Orders
 - Summaries of proposed utility programs, budgets, cost recovery mechanisms
 - Rulings on motions to intervene and participate
 - New Jersey Natural Gas Company (QO23120868)
 - Intervenors: EEA-NJ, NJLEUC, NRDC, NJPEEC, Sierra Club
 - Participants: Uplight, Joint Utilities
 - Elizabethtown Gas Company (QO23120869)
 - Intervenors: EEA-NJ, NJLEUC
 - Participant: Uplight, Joint Utilities
 - South Jersey Gas Company (QO23120870)
 - Intervenors: EEA-NJ, NJLEUC
 - Participant: Uplight, Joint Utilities
 - Atlantic City Electric Company (QO23120871)
 - Intervenors: EEA-NJ, NJLEUC
 - Participants: Convergent, CPower, Google, Uplight, Joint Utilities
 - Jersey Central Power & Light Company (QO23120872)
 - Intervenors: EEA-NJ, NJLEUC
 - Participants: Convergent, CPower, Google, Joint Utilities
 - Public Service Electric & Gas Company (QO23120874)
 - Intervenors: EEA-NJ, NJLEUC, NRDC, NJPEEC, Sierra Club
 - Participants: Convergent, CPower, Google, United, Uplight, Joint Utilities
 - Rockland Electric Company (QO23120875)
 - Intervenor: EEA-NJ
 - Participant: CPower, Joint Utilities



Triennium 2 Filings Review (Docket No. QO23030150)

- Next steps:
 - Ongoing discovery
 - Prehearing orders: procedural schedules, issues to be resolved
 - PSE&G: March 28
 - ACE, JCP&L, RECO: April 12
 - NJNG, SJG, ETG: on deck
 - Settlement conferences (March–April 2024)
 - Public hearings on each filing – TBA (expected to occur mid-May to mid-June)
 - Board action (summer – early fall 2024)
 - Triennium 2 starts January 1, 2025



Guest Presentation



William Amann, P.E., LEED Fellow
President, M&E Engineers, Inc.

Heat Pumps

- Heat Pump Carnot Efficiency
- Air to Water Heat Pumps
- Water Source Heat Pumps
- Ground Source Heat Pumps

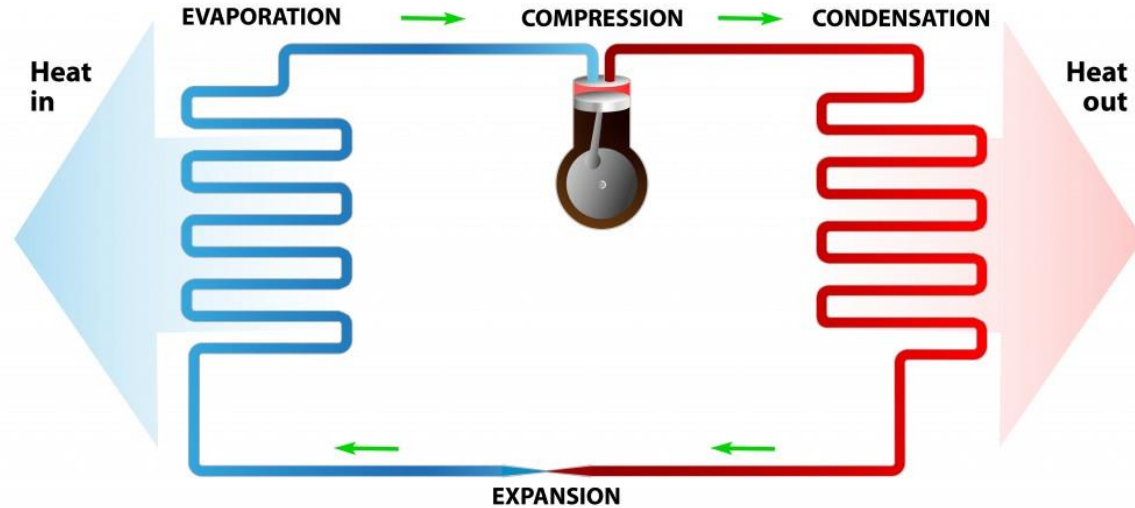
Closed Loop

Open Loop

William Amann, P.E., LEED Fellow
President, M&E Engineers, Inc.

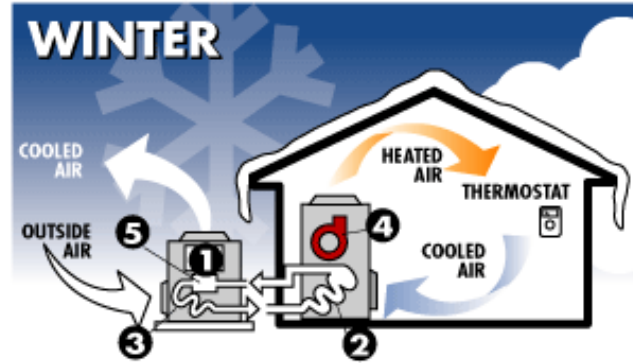
Heat Pumps

How does a heat pump work?



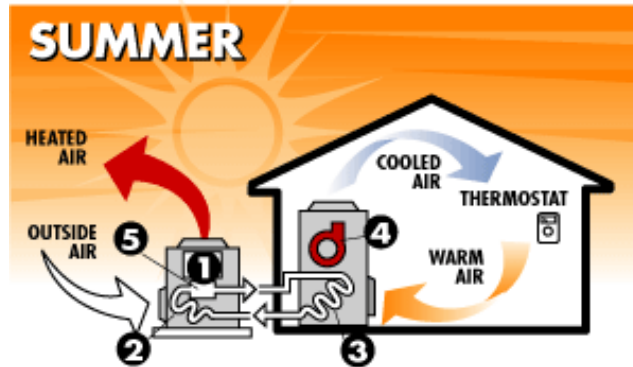
First Law of Thermodynamics – Energy cannot be created or destroyed

Heat Pumps



Temperature “Lift”
(Carnot
Efficiency)

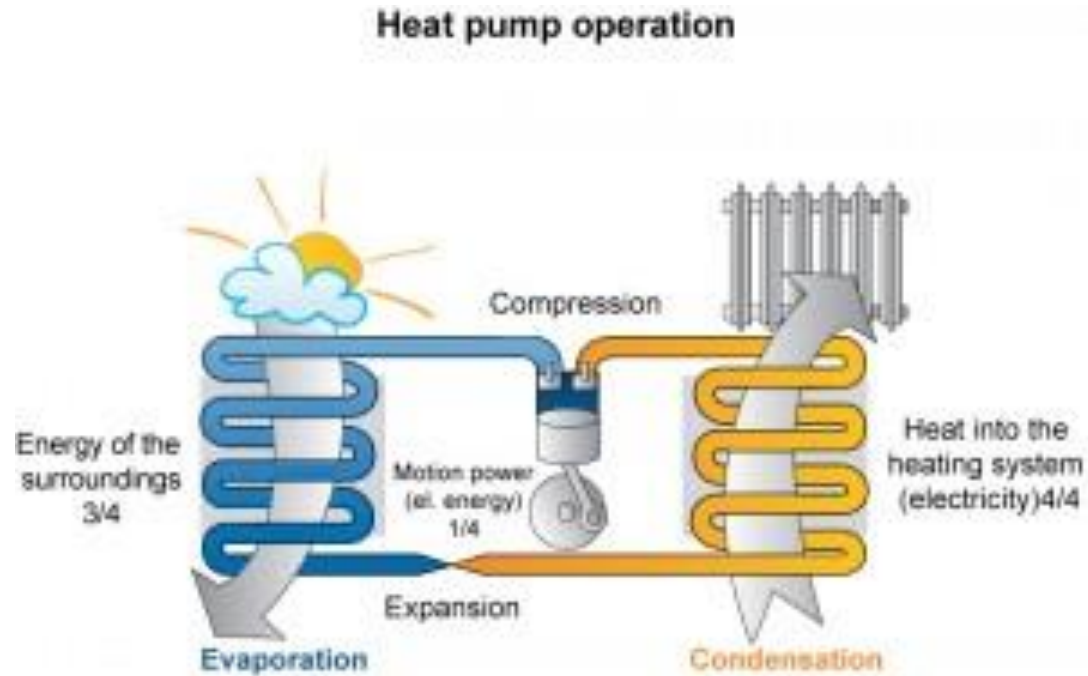
10°F - 70°F



75° - 95°F

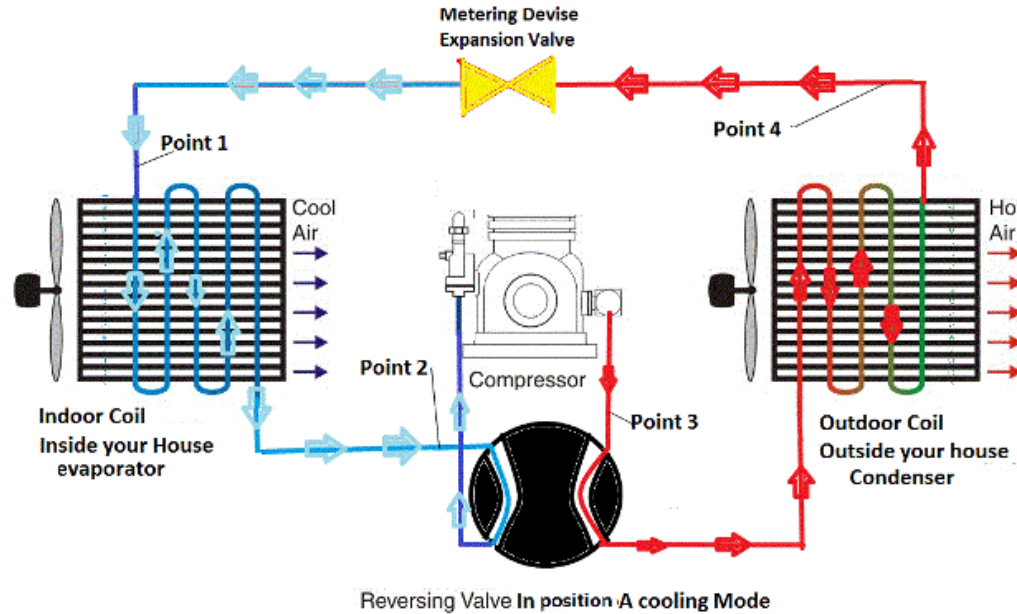
Air to Air Heat Pumps

Heat Pumps



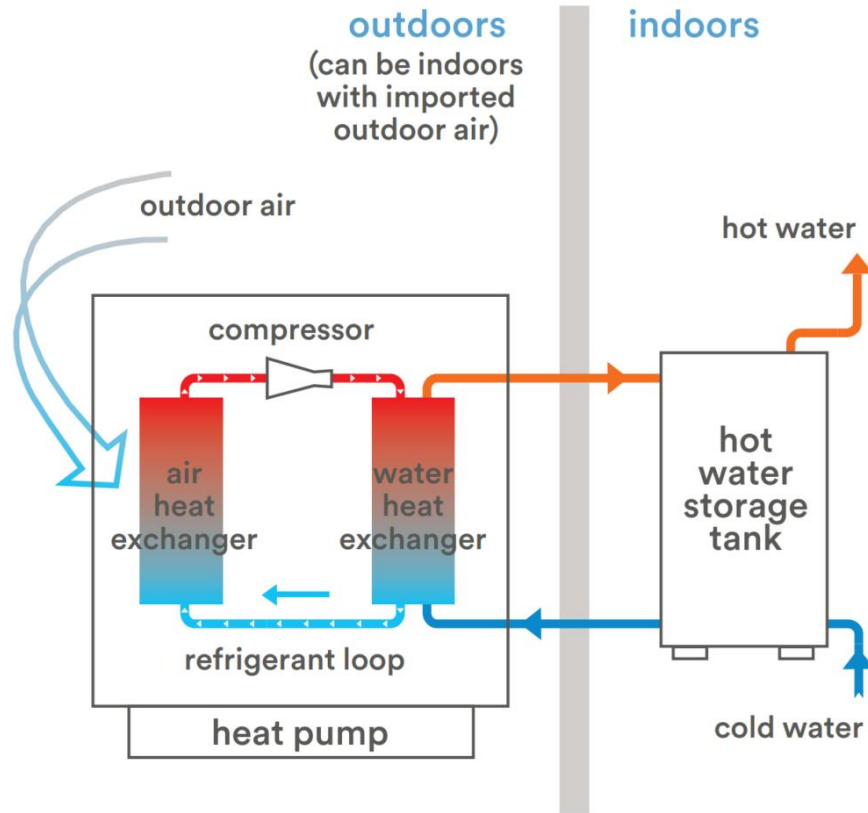
Ratio of Useful Heat Movement Per Work Input
Coefficient of Performance (COP) = 4

Units Typically Provide Heating & Cooling



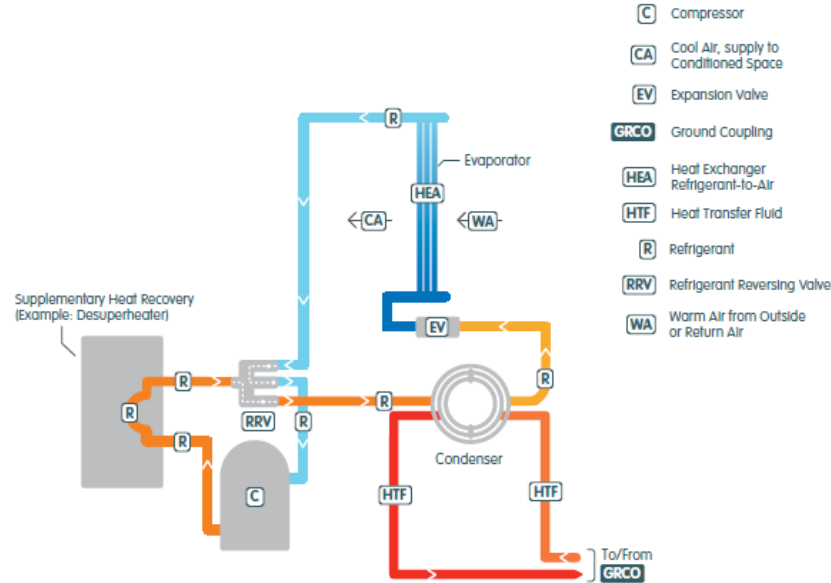
Reversing Valve Reverses the Refrigerant Flow Between the Evaporator and Condenser

Air to Water Heat Pumps



Low Temp Hydronic Heating, i.e. Radiant, or Domestic Hot Water

Water to Air – Cooling Cycle



Water-to-Air Heat Pumps Use Energy from Fluid Systems Instead of the Outside Air

Water to Air Types

- Console
- Horizontal (Ceiling Mounted)
- Vertical (In Closets)
- Vertical Stack
- Floor by Floor (VAV)
 - With Waterside Economizer
- Rooftop

Water to Water

- Chillers
- Low Temperature Water Heaters
- Domestic Water Heaters

Water Source Heat Pumps



Typical Horizontal and Vertical WSHP Units

Water Source Heat Pumps

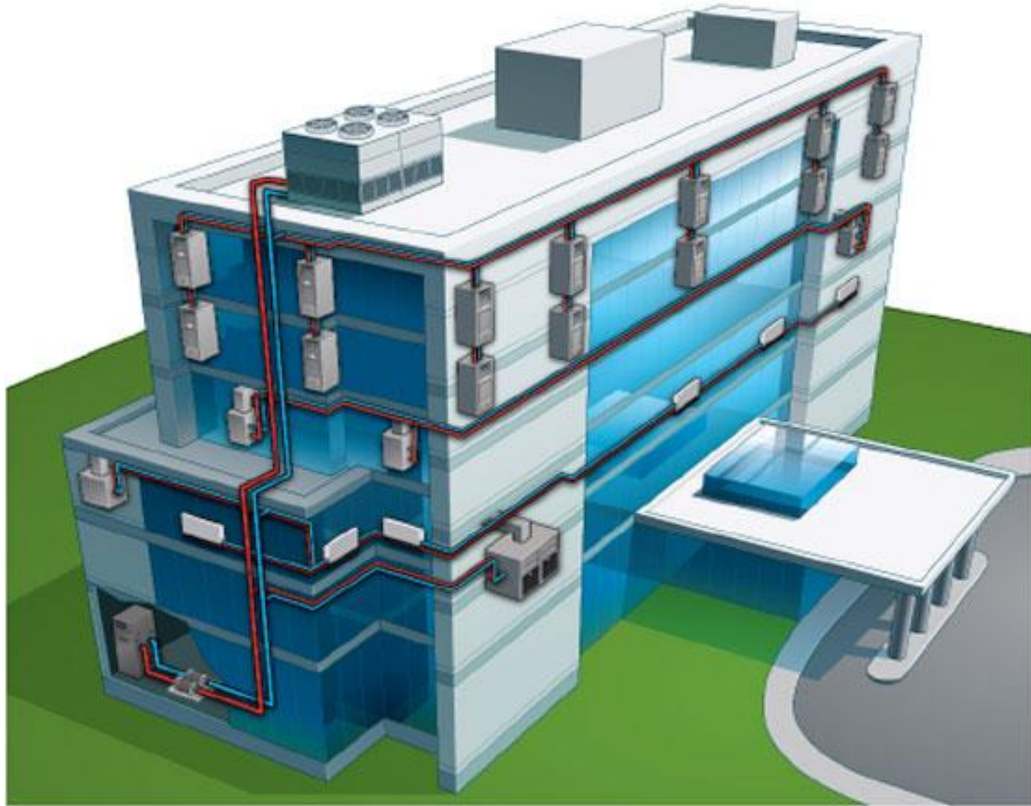


Water-to-Water Heat Pump

Chilled Water
Warm Water (130F)

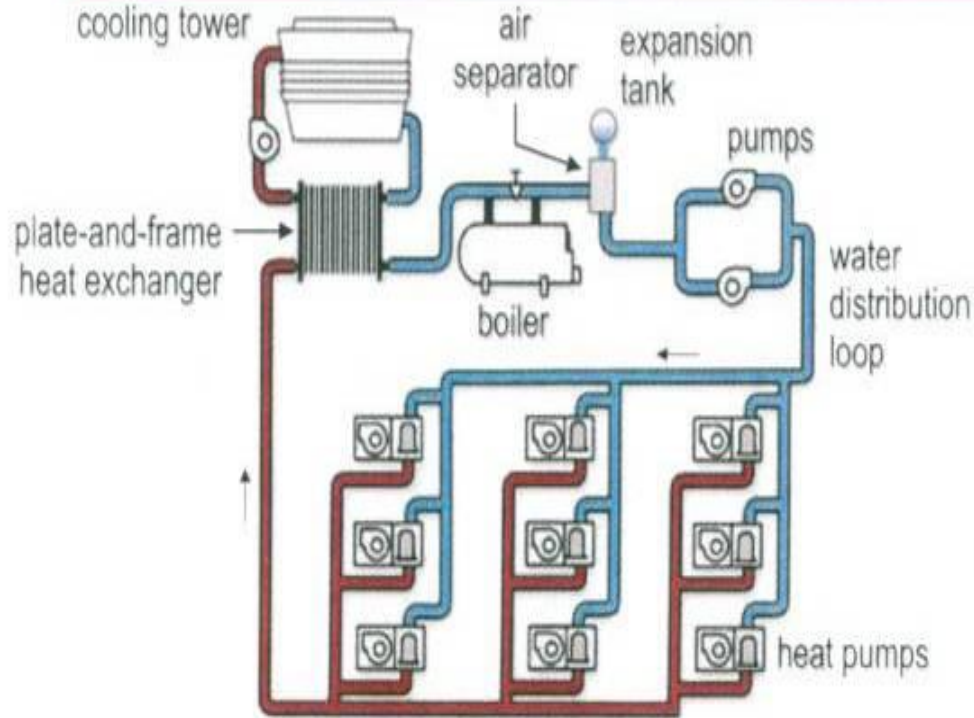


Water Source Heat Pumps



Water Source Heat Pumps

Water-Source Heat Pump System



Water Loop Temperatures:

Cooling - 86°F

EER ~ 15 to 18*

Heating - 68°F

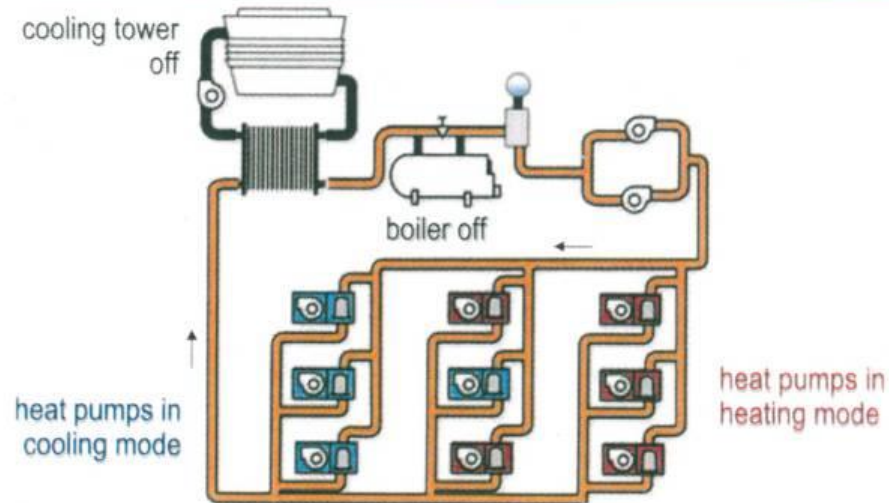
COP ~ 5 to 6*

* Typical ISO Ratings for Trane Axiom VSV/VSH Variable Speed 2- 5 Tons at Full Load.

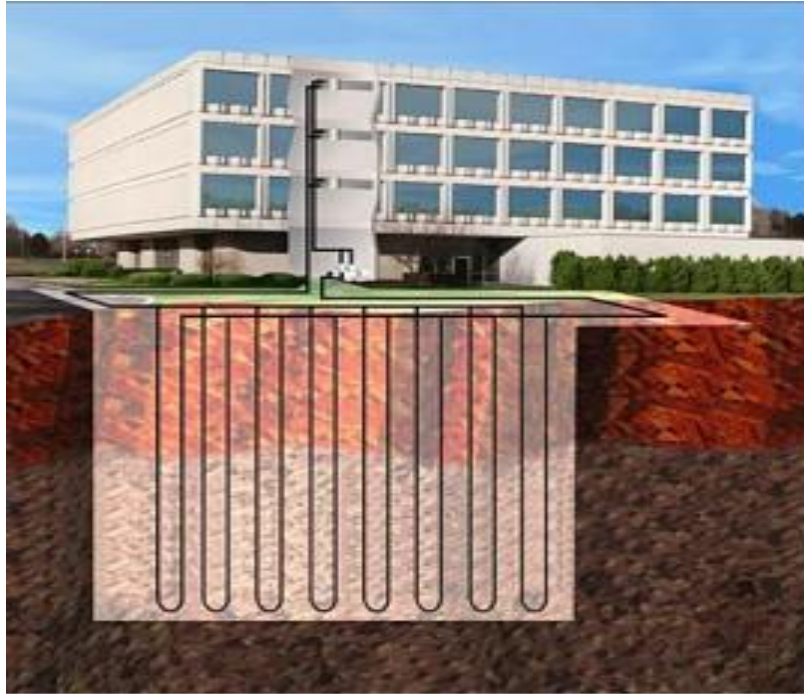
Note: Condenser Water Systems Typically will not sweat, and do not need to be insulated. And they have very little thermal expansion, therefore very little stress.

Interior zones in cooling mode reject heat to loop; perimeter zones absorb heat from loop. System is in balance, and no heat input (boiler) or rejection (cooling tower) energy is required.

Spring and Fall Operation

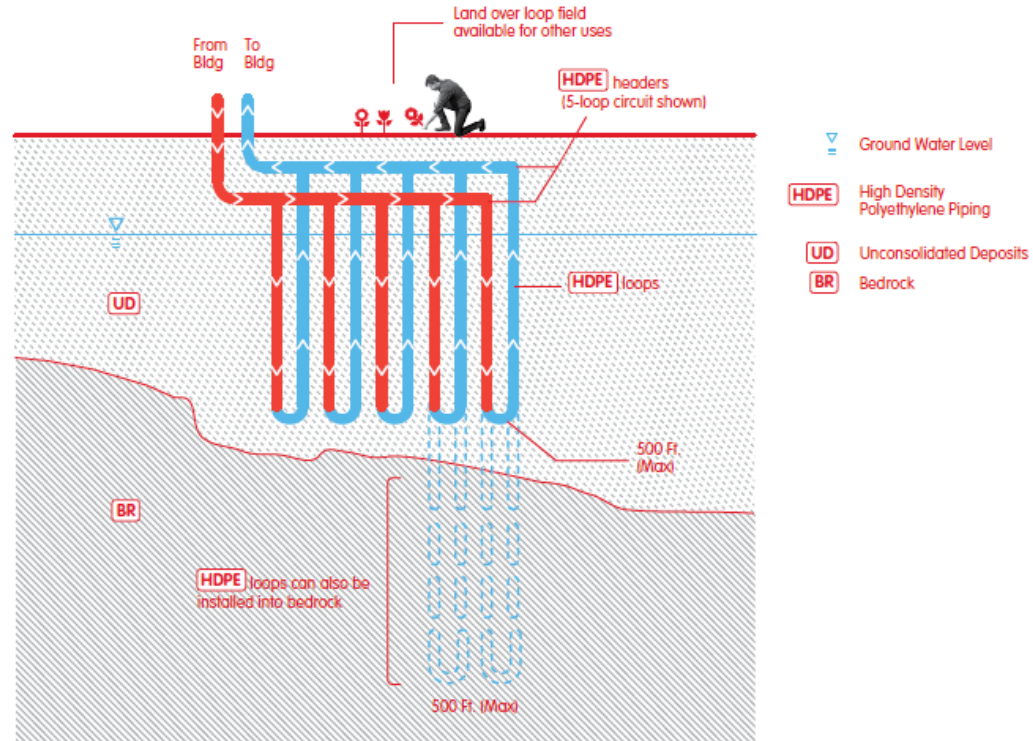


Ground-Coupled Heat Pumps



Closed-loop Heat Exchanger

Ground-Coupled Heat Pumps



Mean Earth Temperature = 55°F (New Jersey)

Ground Coupled Closed Loop Temperatures:

Cooling - 77°F

EER ~ 18 to 22*

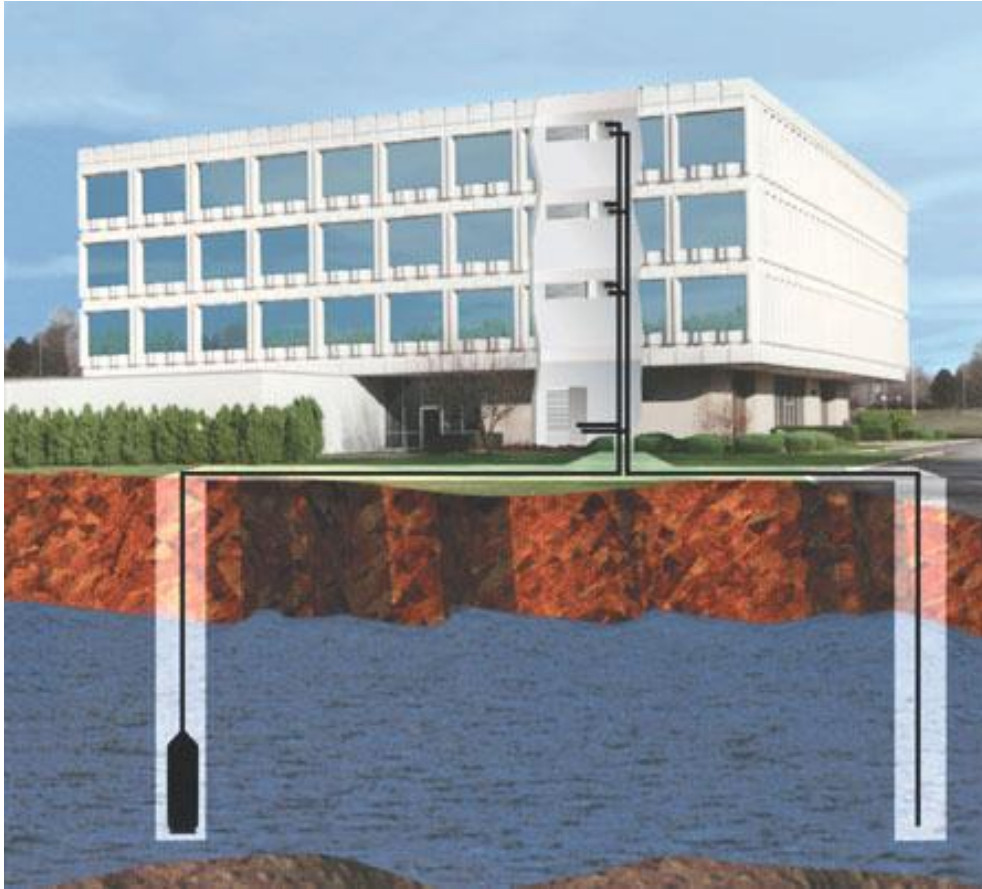
Heating - 32°F**

COP ~ 4*

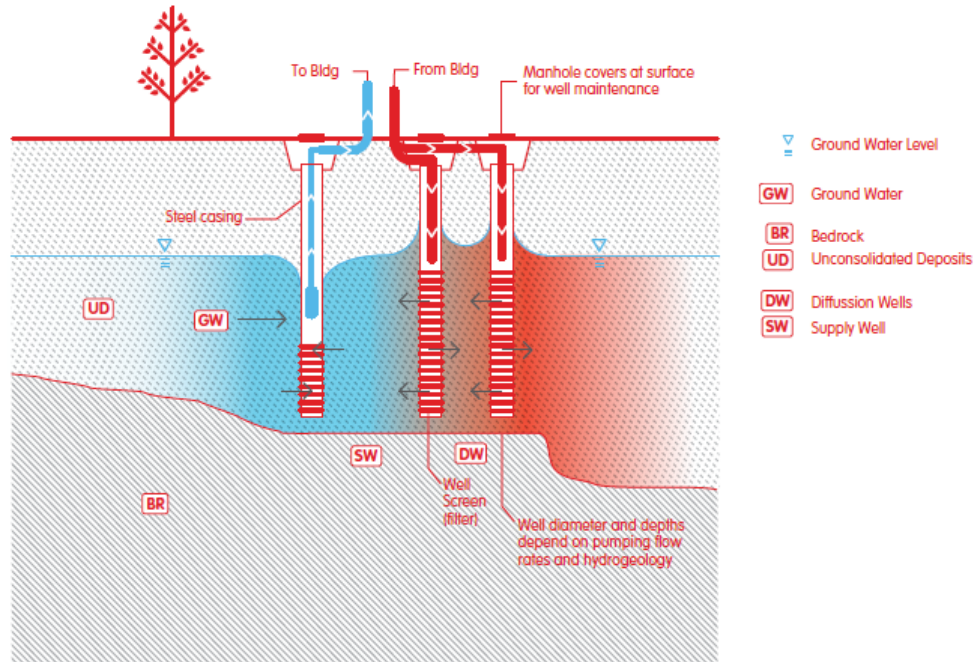
* Typical Values for Trane Axiom VSV/VSH
Variable Speed 2- 5 Tons at Full Load.

** Requires Glycol/Brine

Open Loop Heat Pumps



Open Loop Heat Pumps



Supply Well & Return Wells

Water-Source Heat Pumps

Open Loop Temperatures:

Cooling - 59°F

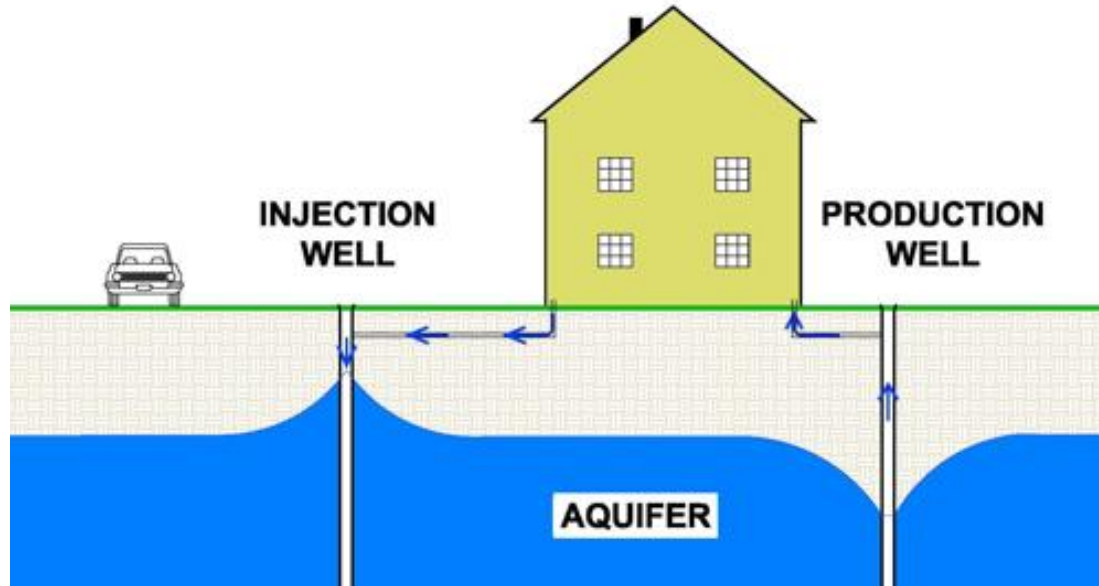
EER ~ 25 to 33*

Heating - 50°F

COP ~ 5*

* Typical Values for Trane Axiom VSV/VSH
Variable Speed 2- 5 Tons at Full Load.

Open Loop Heat Pumps



Hydrology Matters

William Amann, P.E., LEED Fellow
President, M&E Engineers, Inc.

General Q&A

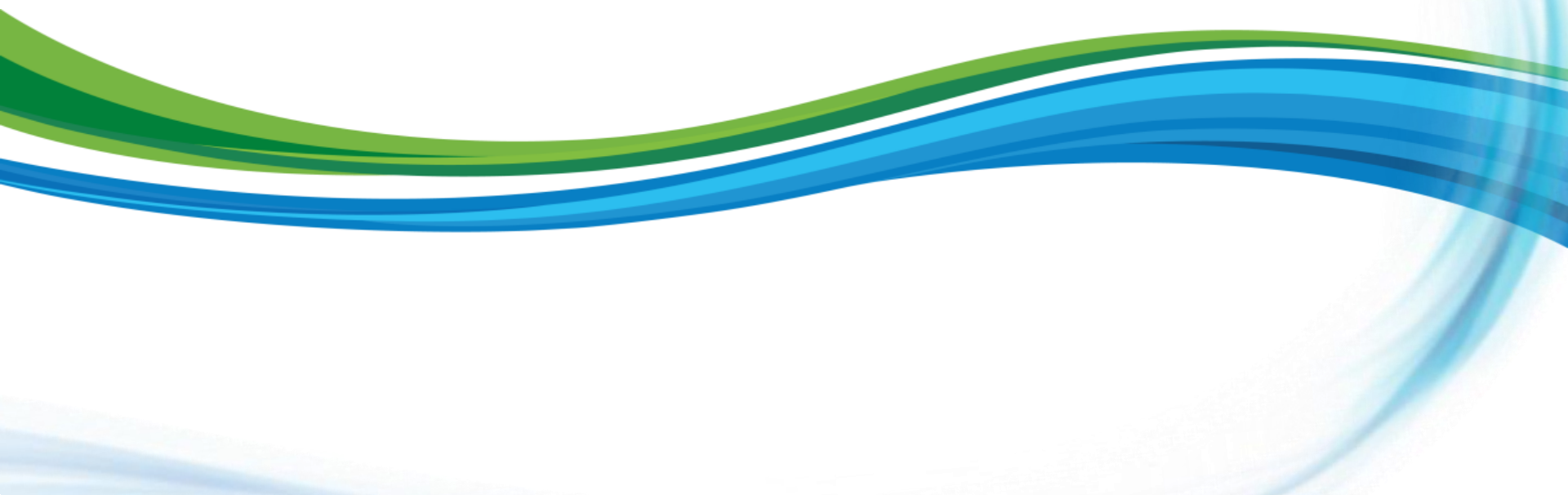


To submit questions in advance for next month:
EnergyEfficiency@bpu.nj.gov

Items of Interest



Next Meetings



Energy Efficiency Stakeholder Meetings

NJCleanEnergy.com/EE

3rd Thursday of the Month, 1-2:30pm

Next Guest Presenter:
Heat Pump Water Heaters
Chrissy Herkenham, TRC

May 16, 2024

June 20, 2024

July 18, 2024

August 15, 2024

September 19, 2024

October 17, 2024

(no November meeting)

December 19, 2024



More Information

VISIT

NJCleanEnergy.com

NJCleanEnergy.com/EE

CONTACT

EnergyEfficiency@bpu.nj.gov

866.NJ.SMART (657.6278)

EE LISTSERV

NJCleanEnergy.com/LISTSERVS



@NJCleanEnergy

THANK YOU

