

Pittsfield Power Possibilities

A look at alternatives
to Pittsfield Generating's
fossil fuel operations



Pittsfield Generating Pollution Stats:

- Owned by Hull Street Energy based in MD
 - Most recent emissions, annual

CO ₂ equiv.	34,812 tons
CO ₂	34,777.0 tons
NO _x	5.7 tons
SO _x	1.5 tons
Methane	0.6 tons
 - Emissions per MW generated

CO ₂ equiv.	1,092 lb. MWh
------------------------	---------------
 - Actual MW supplied annually
63,751 MWh *at 4% capacity factor in 2021*
(emissions can rise to top of AQ permit if demand shifts)
 - Nameplate power potential 175 MW
- *Climate impacts, but also public health*



Health Impacts of Fossil Fuel Emissions

Burning fossil fuels produces PM 2.5, NOx and SOx:

- Effects are:
reduced lung function, asthma, cardiovascular disease, preterm birth, and premature death.
Children and elderly most vulnerable.
- Cellular damage and inflammation throughout the body linked to higher rates of cancer, heart disease, stroke, diabetes, asthma and higher incidence of severe COVID 19 cases.
- Pittsfield Board of Health [Letter of Concern](#) sent to Hull St., 8-21-2021



MA Clean Peak Coalition commissioned study of health impacts of Pittsfield Generating, in final stages to be released in the coming weeks.

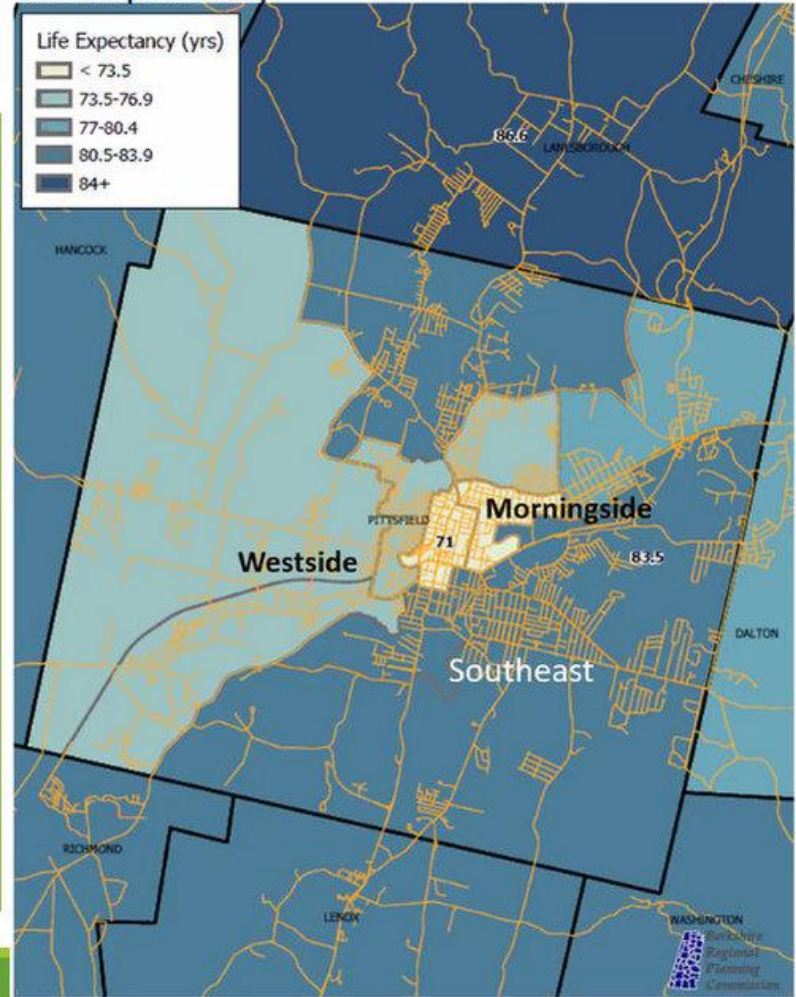
Life Expectancy in Pittsfield

A recent BRPC analysis showed stark differences in life expectancy across Pittsfield based on neighborhood of residence.

Those living in the Morningside/Westside neighborhoods live, on average, 10-12 fewer years than those in the more income-secure Southeast neighborhood:

- Morningside: 71
- Westside: 73.9
- Pittsfield average: 79.5
- Southeast: 83.5 years

Life Expectancy





Pittsfield Generating Economic Stats:

- Currently employs only 2 crew members approx. 96% of the time. 6 when running. **reported by company*
- Currently pays \$693K in taxes to city.
- **Appealed to state board to lower tax bill because of depreciation. As of 2026 will be around \$350K**
- **Capacity payment rising from \$4.6M to \$6.4M**
**payment to be available even if it never runs*

Is a huge tax cut appropriate for a major source of pollution to City neighborhoods, especially as it ages and emissions are likely to increase?

Should we instead be pressing for non-emitting alternatives like battery energy storage?

Possible decarbonization scenarios *(least to best):*

1. Simply add BESS to operations

- a. Could effectively replace fossil fuel generation, stopping emissions while extending lifespan of its operation / preserving existing tax base
- b. Could run into space limitations; small lot, not much room for two sets of power supply, unless extra space is negotiated with City or GE

2. Retire fossil fuel plant, convert to BESS

- a. Could completely replace fossil fuel generation, stopping emissions while extending lifespan of its operation / preserving tax base
- b. More space would be available either inside existing plant structure or if demolished

Possible decarbonization scenarios *(least to best)*:

3. Retire fossil fuel turbines, convert to **BESS & solar**

- a. Adding solar generation to BESS would ensure that power generation for charging is also zero-emission
- b. MA Clean Peak Standard allows generation to be off-site and/or owned by another party with whom storage operator has power purchase agreement



PittsGenerating-Parcels of interest
Areas for consideration for solar and/or BESS
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Parcels of Interest

Individual styles

NorthOfSabic

SouthOfSabic

EastofPittsGen

WoodlawnWest

Infrastructure

Individual styles

PittsGen Plant footprint

ElectricalSubstation1

ElectricalSubstation2

Base map

Parcels of interest for power redevelopment scenarios



Pittsfield Generating plant footprint - 5 acres

Electrical Substation 1

Electrical Substation 2

North of Sabic - 19.8 acres

South of Sabic - 6.7 acres

East of Pittsfield Generating - 2.75 acres

West of Woodland / South of Kellogg (not pictured) - 6.6 acres

Potential power generation of alternative scenarios



SCENARIO 1

- Add BESS to existing operations

— BESS on 2.75 acre site

Low density - 5.5 MW

Higher density - 8.25 MW

SCENARIO 2 - Retire plant, BESS only

— BESS on 5 acre site

Low density - 10 MW

Higher density - 30 MW

— BESS on 2.75 acre site

Low density - 5.5 MW

Higher density - 8.25 MW

— or Solar on 2.75 acre site -

SCENARIO 3

Solar on lots north & south of Sabic

— North - 99 MW - or mix with BESS

— South - 33.5 MW - or mix with BESS

Benefits of converting fossil fuel peaker plants to Battery Energy Storage System (BESS) and renewables:

- **Keeps plant on the tax rolls for longer**, rather than just retiring it when no longer allowed for climate compliance or just dies
- **Keeps tax base higher** with new tech rather than an old, depreciated plant
- **Ideal location:** converting an already industrial zone with existing interconnection infrastructure (no additional land acquisition, forest destruction or new interconnection needed)
- ***Improves local health outcomes for the community***

Could decarbonizing this giant, iconic piece of infrastructure be a selling point for clean tech development?

- Updates City image as more green
- Upholds the values of clean tech and renewable energy companies
- ***Possible 4th alternative:***
Could possibly provide steam service, a desirable asset for manufacturing, pharmaceutical or research development.
This is currently happening in Cambridge.



How can we make this happen?

Can the City work with Hull Street Energy
to help facilitate a transition?

We are willing to work with City officials and/or PEDAs to understand options. We have transition experts we work with in the [MA Clean Peak Coalition](#) and access to energy analysts who are already studying possible paths to and public health benefits of transitioning Pittsfield Generating off fossil fuels.

*Hull Street is willing to talk with City officials
about transition options for Pittsfield Generating.*

We are willing to introduce interested officials to
Hull Street Energy staff to start the discussion.

How could the City help make a transition away from fossil fuel operation happen?

Is there room to develop solar to supply the plant?
Could the City or PEDDA help Hull St. negotiate land use with GE?

Community-owned solar?
*Could solar development and purchase agreement with
Hull Street be a community-based endeavor?
Could this be a springboard for municipal microgrid?**

Can a new steam loop be constructed similar to
former GE steam supply?
(similar to Vicinity Energy eSteam™ conversion of Kendall Station)

Funding Opportunities

- Inflation Reduction Act Clean Energy Incentives for Municipalities

PAST OPPORTUNITIES:

- [EPA Environmental and Climate Justice Community Change Grants Program](#) - *Help communities improve community health, including removal of emissions sources.*
- [Grid Resilience and Innovation Partnerships \(GRIP\) Program](#) - *enhance grid flexibility and improve the resilience of the power system against growing threats of extreme weather and climate change*

There may be similar grant programs in the future.

- We are in contact with Sen. Markey's office for spotting opportunities.
- [FFIO](#) is managing payout of IRA funds already procured by the state.

We need to start exploring possibilities to be ready for opportunities.

Hull Street in Pittsfield Jan. 14

**Office of Energy Transformation Decarbonizing the Peak
Focus Area Working Group Meeting
Berkshire Innovation Center
11:00 - 2:00**

Hybrid - online participation will be available option.

There may be a tour of the power plant afterward.

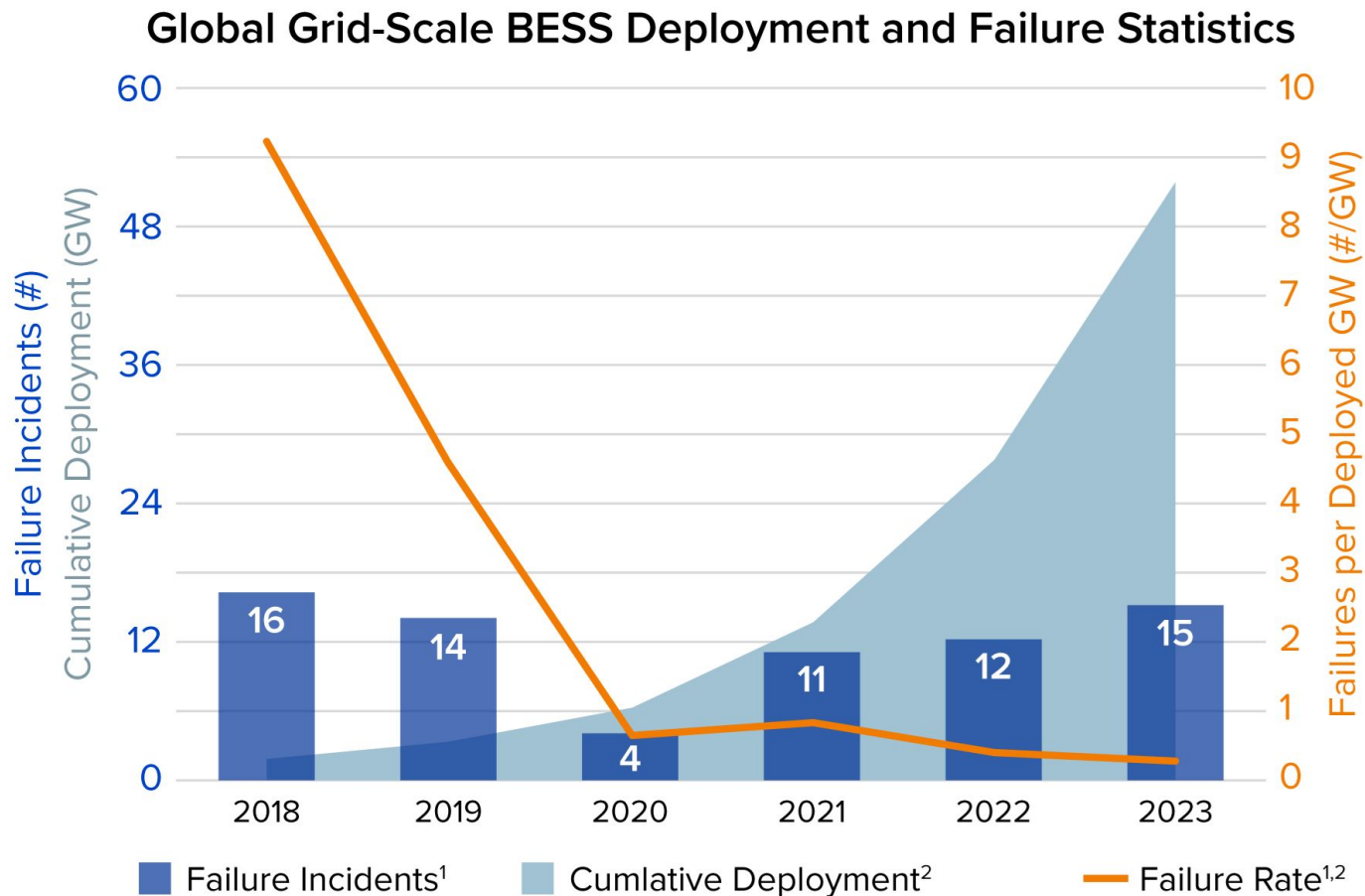
OET Director is interested in hosting a local listening session at another date. Especially interested in having local officials and public attend.

Hull Street officials regularly visit Pittsfield a few times a year.

EXTRA SLIDES

Current BESS safety and chemistries

Since 2018, the failure rate per GW of BESS has dropped by 97%.



Sources: (1) EPRI Failure Incident Database, (2) Wood Mackenzie. Data as of 12/31/23.

BESS chemistries

Lithium Ion

- 4 hour duration max.
- 1 to 3 MW per acre

Lithium Iron Phosphate

- 4 hour duration max.
- 1 to 3 MW per acre
- increased protection from fire/thermal runaway

Iron Flow

- Far less toxic than lithium based
- 4-12 hour duration
- Up to 6 MW per acre ([ESS](#))

Iron Air

- Far less toxic than lithium based
- 100 hour duration
- 2-3+ MW per acre ([Form Energy](#))



Community Opposition

Community Concern

Concerns for public health and environment are what compelled over 300 people to sign a petition, and dozens to stand out in protest, pressing peaker owners to come to the table to speak with us.

tinyurl.com/PittsfieldPeakerPetition

They're also what compelled Pittsfield's Board of Health to send their letter of concern to Hull Street.



Who can make this happen?

Contact your City Council members and the Mayor and let them know you want them to work with Pittsfield Generating to transition off fossil fuels.

And sign the petition - tinyurl.com/PittsfieldPeakerPetition



Contact:

Rosemary Wessel, Program Director, Put Peakers in the Past
an initiative of BEAT's No Fracked Gas in Mass program

rose@thebeatnews.org

[**nofrackedgasinmass.com/put-peakers-in-the-past**](https://nofrackedgasinmass.com/put-peakers-in-the-past)

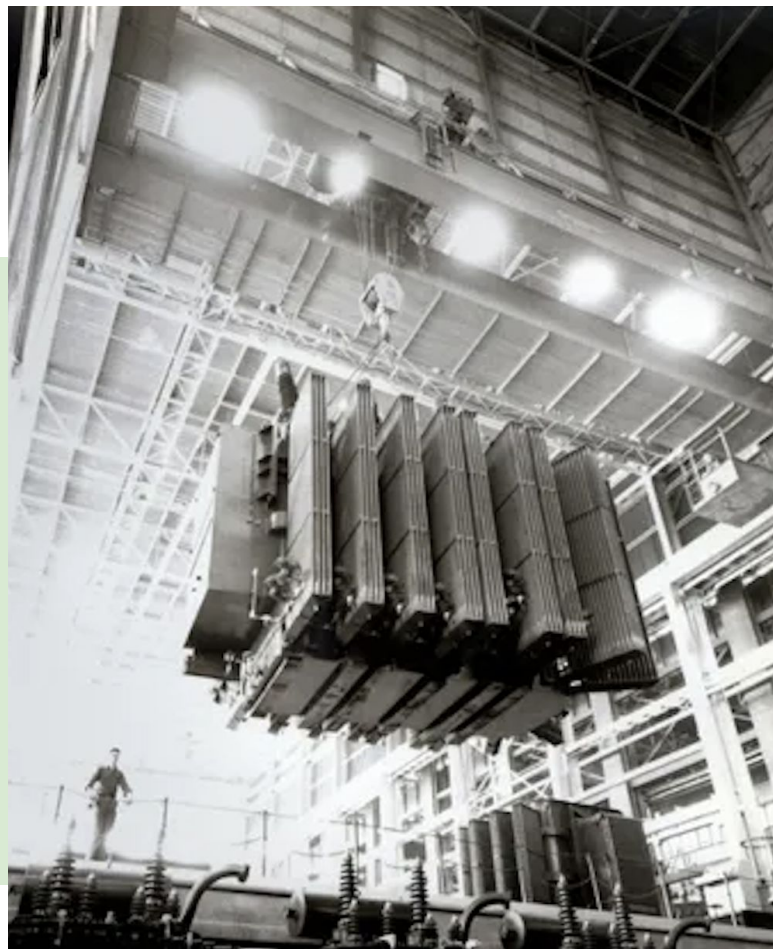


BEAT is a member of the MA Clean Peak Coalition
Working statewide to transition peakers off fossil fuels
cleanthepeakma.org

Benefits to City

Pittsfield's Legacy of Innovation

Long history of technological innovation and job creation. In the past century, Pittsfield was at the cutting edge of development in new technologies that helped shape the industrial age.



Transformer unit on lift in Bldg 12Y, 1950 ©GE

Pittsfield's Future of Innovation

Berkshire County and Pittsfield are pursuing a future in clean tech development.

It's in the interest of the City to leave behind yesterday's technology and embrace a clean energy future.

Decarbonizing our last large peaker power plant would show that Pittsfield is a forward looking, environmentally minded center, friendly to its natural surroundings while embracing its legacy of technological innovation.

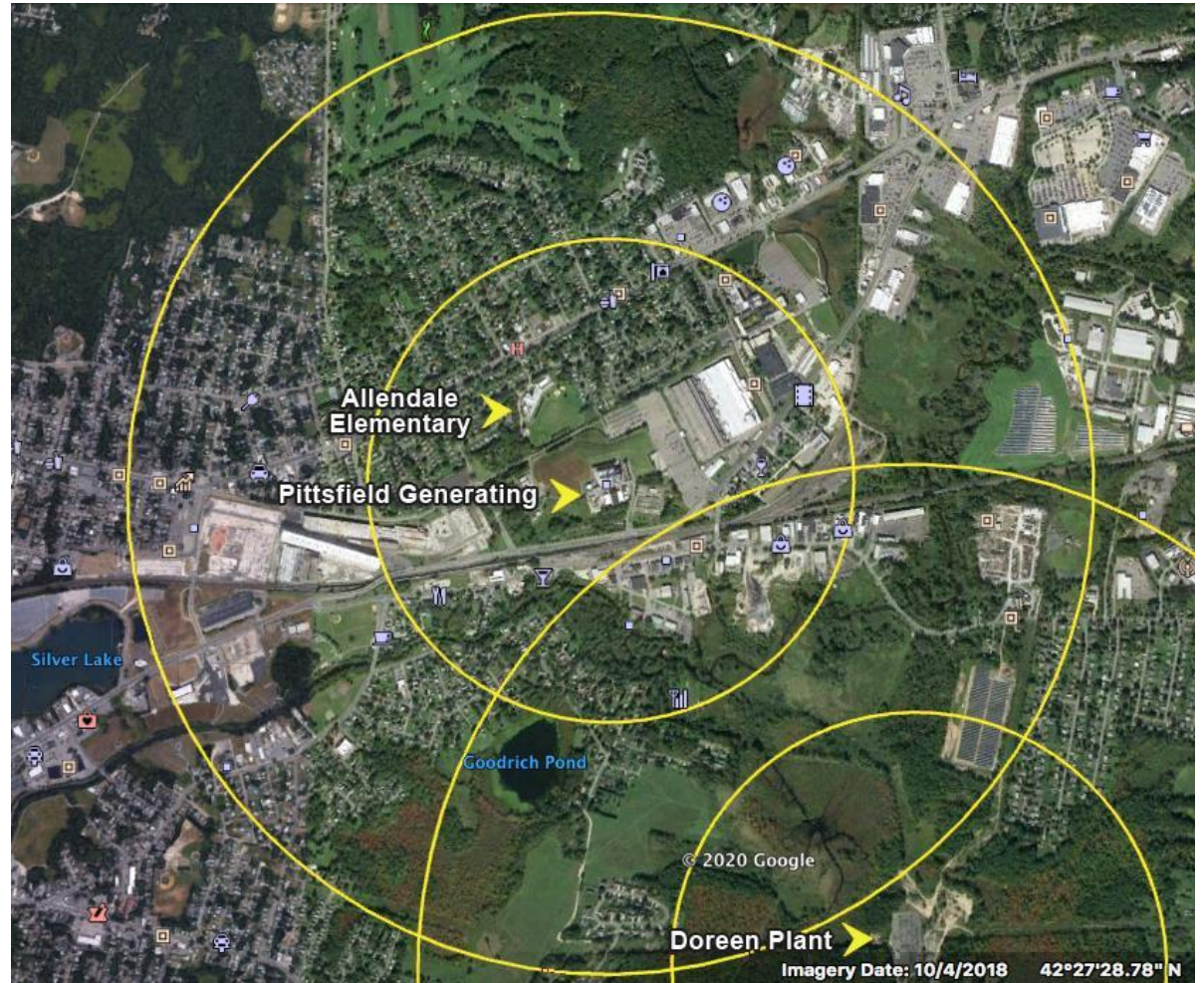


Declining conditions at Berkshire Co's last large fossil fuel peaker power plant.

Public health impacts

Pittsfield Generating

- Directly adjacent to Environmental Justice neighborhoods
- Allendale and east side of Morningside within 3 mi. West Side within 5 mi.
- Less than 1,000 ft. from Allendale Elementary School



What are Peakers?

Power market info

What Are Peaker Plants?

Peaker power plants are the ones that our grid operator, ISO New England, asks to fire up when demand is high.

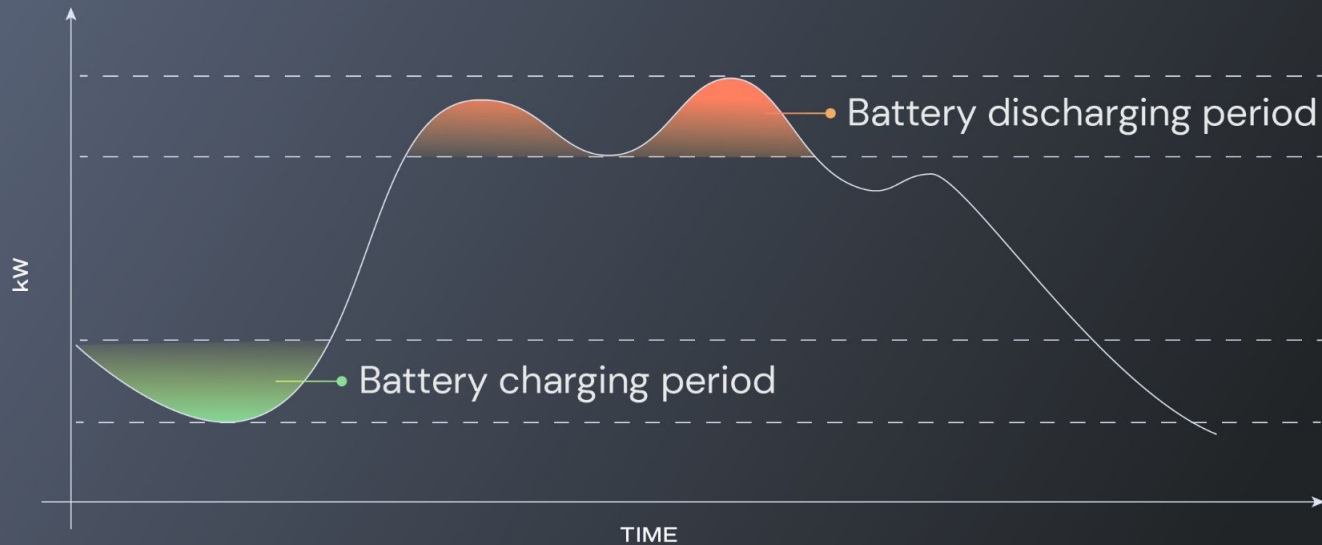
- Highest amount of pollution per MW
- They only run for a few hours, very few days a year (*5% of the time or less*)

This short term demand can be met by **Battery Energy Storage Systems** (BESS) charged during non-peak hours, ideally using renewable energy.



Charging Battery Energy Storage Systems during off-peak hours can replace fossil fueled peaker plants

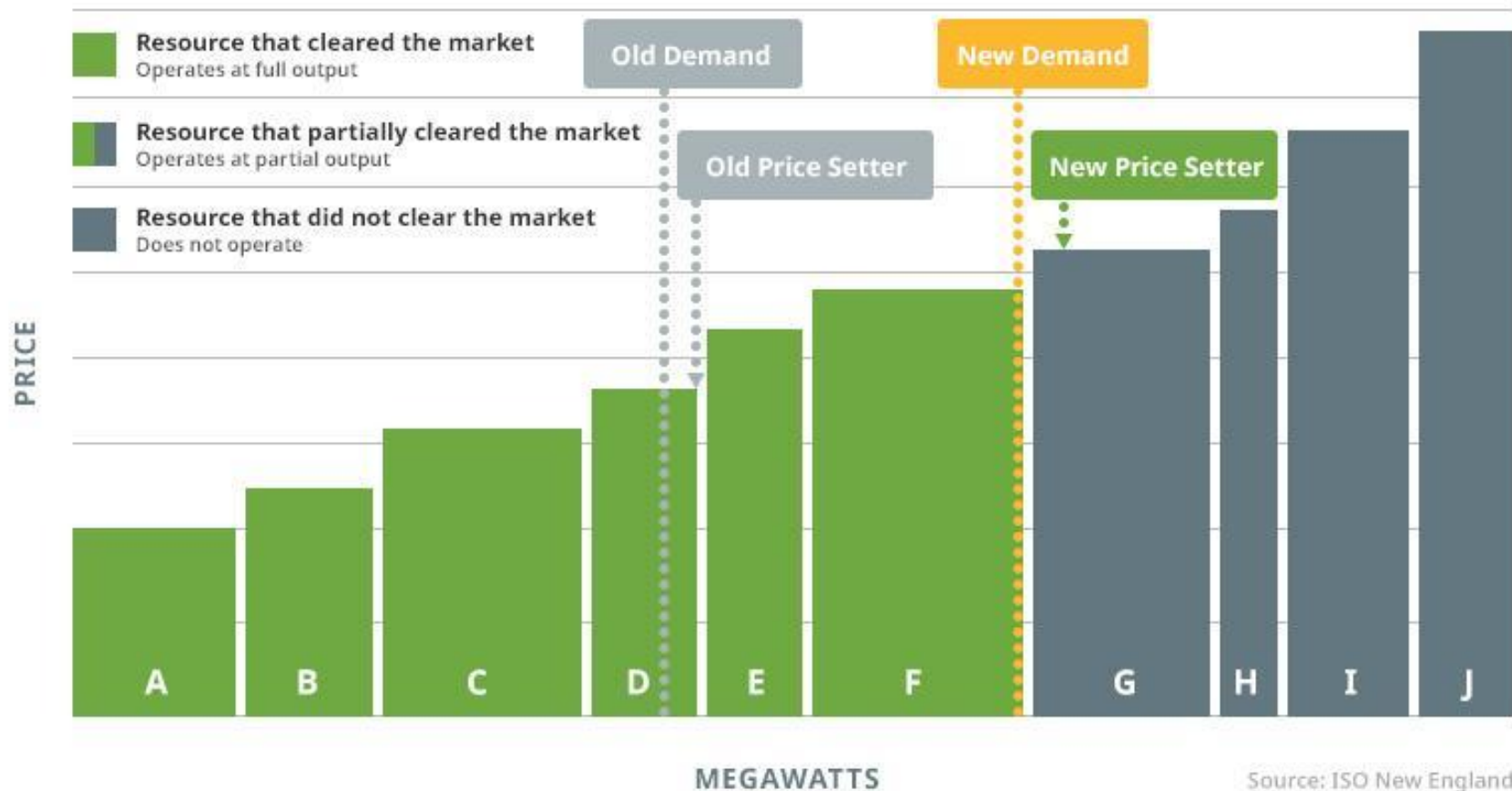
PEAK SHAVING WITH BATTERY ENERGY STORAGE SYSTEMS



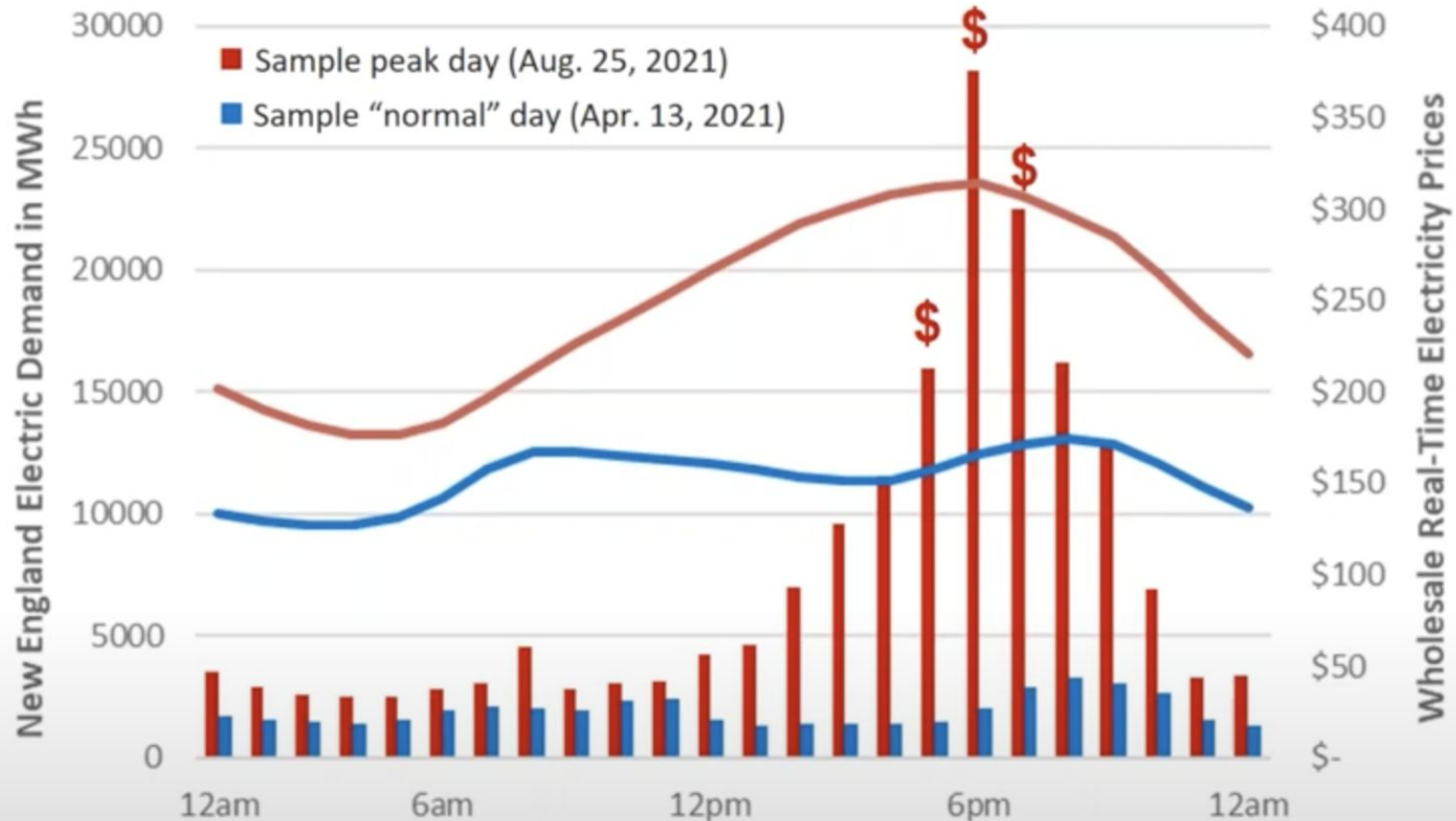
*This graphic is a simplified representation for illustrative purposes only.



Supply Stack



On peak days: demand can be 2x a normal day, prices 10x a normal day



Source: Green Energy Consumers Alliance

Decarbonized CHP

Alternative possible decarbonization scenario:

Retire fossil fuel turbines, repower combined heat and power (CHP) steam capacity using zero emissions electrified technology

(similar to Vicinity Energy eSteam™ conversion of Kendall Station)

- a. Could supply district steam to development on former GE properties or nearby
- b. Could still provide power to grid during peak events with sufficient storage capacity



Vicinity-style transition

Combined heat & power, very similar to Pittsfield Generating.

Gas / Oil co-generation plant generates steam to supply district heat and electric to go to the grid.

Transitioning to zero emissions
eSteam™

NEWS:

• [WBUR](#) • [Business Wire](#) • [NEREJ](#)



Vicinity-style transition

- Electrode-based electric boiler uses electricity to turn water into high-pressure steam.

Water is injected across two oppositely charged plates creating flash steam. The result will be the generation and distribution of electrified steam — renewable thermal energy.

- Industrial-scale heat pump preheats water for the new electric boiler.
- 80+ MW molten salt thermal battery for thermal storage.

Pittsfield Generating capable of 1,208 MMbtu CHP

Can be run on standard grid power but best if supplied by renewable power.

Can also add BESS to store excess electric for peak supply.

Financing / Grants

Direct Pay incentives are available in MA

What types of projects might be eligible for Elective Pay?

- Direct pay will allow local governments to do things differently and to do different things.
 - For example, direct pay could help local governments invest in the replacement of existing vehicles with clean vehicles as part of a fleet transition.
 - Direct pay can also help local governments that currently don't generate clean energy for their government facilities to begin to do so.
- **Direct Pay is a powerful new financial tool to make necessary investments to achieve goals related to the clean energy transition, such as improved health outcomes, reduced reliance on the grid and potential cost savings.**

Funding Opportunities through Direct Pay

Direct Pay (also known as Elective Pay) is a program that allows cities, towns, and other tax-exempt organizations to receive federal tax credits for completing certain clean energy projects or investments.

Section 45 - Renewable Electricity Production Tax Credit

Section 48 - Energy Investment Tax Credit

Can include community solar and/or storage deployed at distribution level.

The IRS requires that eligible entities own the asset for which they are seeking credits

New funding review from Wood Mackenzie - 11/20/24 » [Download](#)

Applicable Tax Credits for Elective Pay

	Tax Provision	Description
Manufacturing	Advanced Energy Project Credit (§ 48C) Application required	For investments in advanced energy projects. A total of \$10 billion will be allocated, not less than \$4 billion of which will be allocated to projects in certain energy communities. Credit Amount: 6% of taxpayer's qualified investment; 30% if PWA requirements are met ¹
	Advanced Manufacturing Production Credit (§ 45X)	Production tax credit for domestic clean energy manufacturing of components including solar and wind energy, inverters, battery components, and critical materials. Credit Amount: Varies by component
Vehicles	Credit for Qualified Commercial Clean Vehicles (§ 45W)	For purchasers of commercial clean vehicles. Qualifying vehicles include passenger vehicles, buses, ambulances, and certain other vehicles for use on public streets, roads, and highways. Credit Amount: Up to \$40,000 (max \$7,500 for vehicles <14,000 lbs) ⁹
	Alternative Fuel Vehicle Refueling Property Credit (§ 30C)	For alternative fuel vehicle refueling and charging property , located in low-income and non-urban areas. Qualified fuels include electricity, ethanol, natural gas, hydrogen, and biodiesel. Credit Amount: 6% of basis for businesses and can increase to 30% if PWA is met.
Fuels	Clean Hydrogen Production Tax Credit (§ 45V)	For producing clean hydrogen at a qualified, U.S.-based clean hydrogen production facility. Credit Amount: \$0.60/kg multiplied by the applicable percentage (20% to 100%, depending on lifecycle greenhouse gas emissions), amount increases if PWA is met ^{1,7}
	Clean Fuel Production Credit (§ 45Z, 2025 onwards)	Technology neutral tax credit for domestic production of clean transportation fuels , including sustainable aviation fuels, beginning in 2025* Credit Amount: \$0.20/gallon (\$0.35/gal for aviation fuel) multiplied by CO2 "emissions factor"; \$1.00/gallon (\$1.75/gal for aviation fuel) multiplied by CO2 "emissions factor" if PWA is met ^{1,7}

* For footnotes, see irs.gov/pub/irs-pdf/p58170.pdf. You can also learn more at [IRS.gov/CleanEnergy](https://irs.gov/CleanEnergy) and [IRS.gov/ElectivePay](https://irs.gov/ElectivePay).