Building Performance Standards Advancements in Minnesota

Meeting 3 – 10.31.2024

Agenda

- Introductions
- Renewable energy as part of BPS
- Ensuring the data is accurate
- New alternative compliance pathway ideas

Speakers

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Center for Energy and Environment

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CEE's Principles for a BPS

Build upon existing benchmarking policy

Set practical milestones and targets using best practices

BPS should align with our state's economy wide GHG reduction goals

This policy will require significant ongoing funding, and we should leverage existing sources as much as possible

Utilities will be able to claim savings and support retrofits

Renewable energy as part of BPS

Renewables and Buildings 101

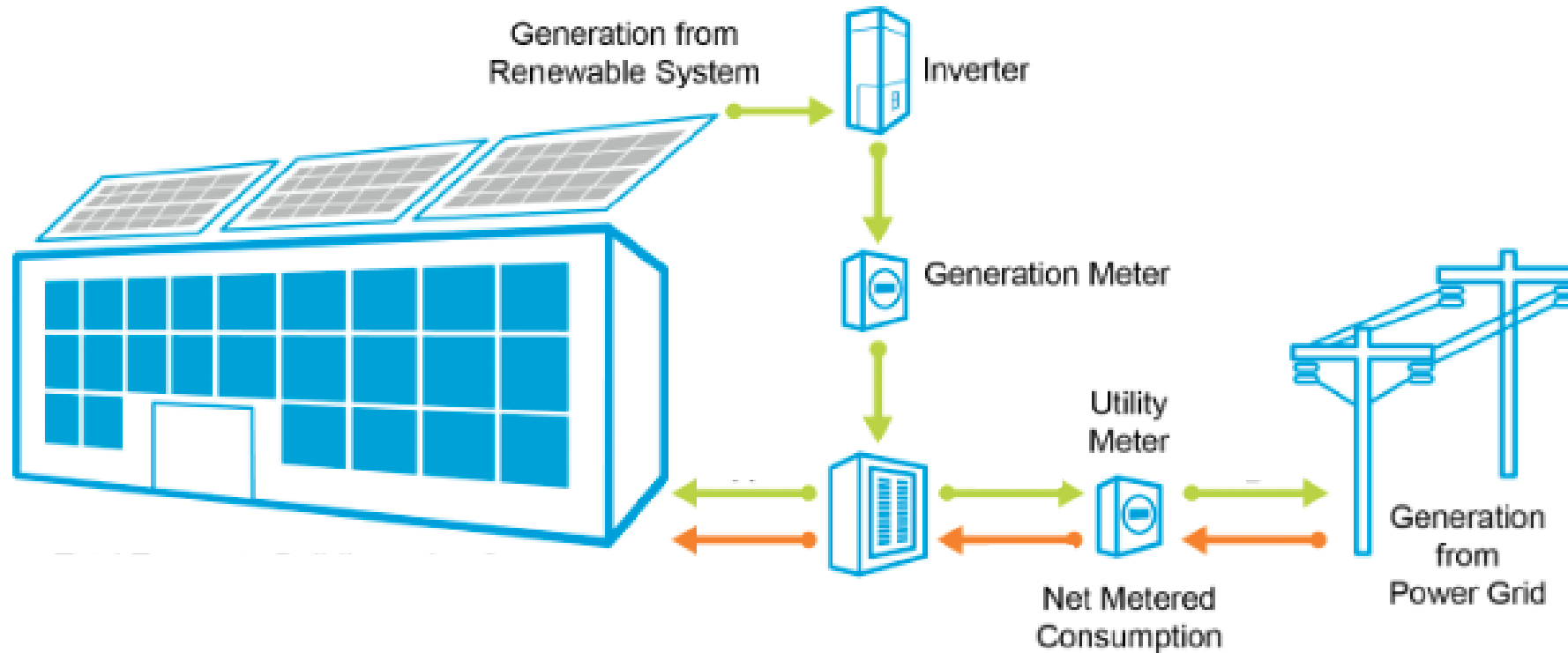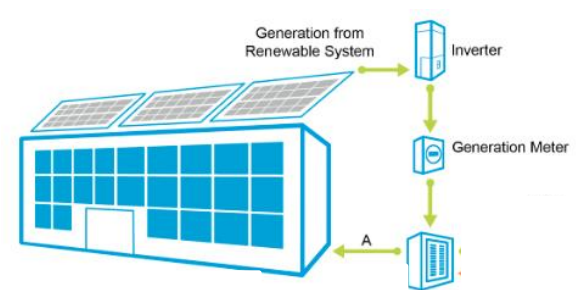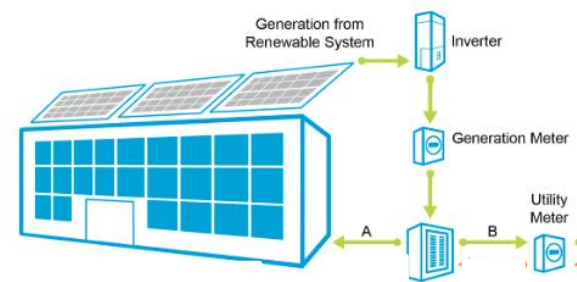Figure 1: Net Energy Metered (NEM) Solar System – graphic created by author for BEPS Task Force in 2020

Generation from Renewable System

Inverter

Generation Meter

Utility Meter

Net Metered Consumption

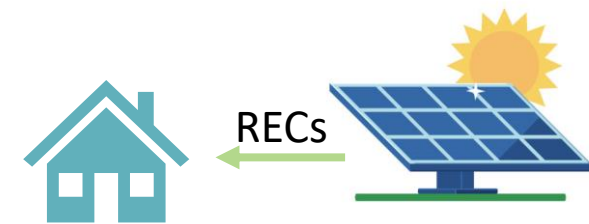Generation from Power Grid

Image credit: DC Government
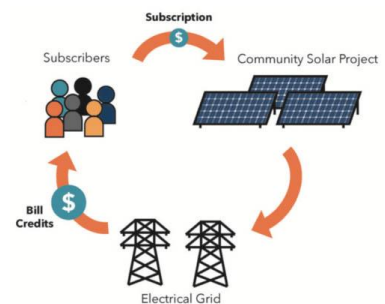
Renewable Energy Scenarios

On-Site Renewable
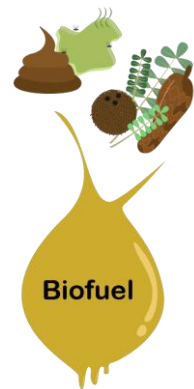Energy Use, generated
and used onsite

On-Site Renewable
Energy Generation,
exported to grid

RECs

Off-Site Renewable
Energy Purchase

Community Solar

Biofuel

Biofuels

RPS and Utility Renewables

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Summary: Does renewable energy count towards BPS?

	On-Site Renewable Generation and Use	On-Site Renewable Generation, exported to grid	Off-Site Renewable Purchase
Energy-based BPS (EUI)	**Sometimes** About half of EUI-based BPS provide full or partial credit on-site renewable use	**Rarely** A few jurisdictions do also allow credit of exported generation—e.g., net EUI. Cannot offset non-electric use. *(Denver, MoCo, WA)*	**No (generally)** In general, EUI-based BPS ignore off-site renewables. *(Denver is only energy-based BPS that credits off-site renewables, and only for <20% of use, and only before 2030.)*
Emissions-based BPS (GHGI)	**Always** All GHGI BPS policies treat on-site renewable use as emission-free	**Usually** Most GHGI BPS net out on-site renewable generation that is exported from energy use. Cannot offset non-electric use.	**Sometimes** Several jurisdictions do allow local or in-state off-site renewable purchases to count as emission free; RECs must be retired.

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Additional Points

- On-site is not necessarily the same as "net metering": With exceptions, on-site generation usually only counts for an EUI BPS if it is also used onsite. It also cannot offset other energy sources.

- Community solar or other "grid-tied" renewables are treated as off-site renewables; their physical presence on a building is irrelevant.

- Biofuel use is not treated as renewable energy source in any BPS in the United States – generally use EPA-provided emission factors that are comparable with fossil fuels.

- All GHG based standards count overall renewable generation on the grid when calculating electricity GHGI; if additional renewable purchase is allowed, it is functioning, effectively, as limited form of carbon offset

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EPA Position on Net Energy Metrics

- A 'net energy metric' is subtracting out renewable energy from total EUI

- EPA recommends against 'net energy metrics' in a BPS:

  - Confusing

  - Inconsistent treatment by different jurisdictions on range of issues

  - Often incorrectly tracked in Portfolio Manager

  - Subtracting renewable energy requires calculations outside Portfolio Manager

  - Energy exports don't change energy used by a building; shouldn't impact EUI

  - Net energy metrics can allow a building bypass energy efficiency if it can site enough renewables

  - There are other policies to incentivize renewable energy

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IMT Recommendation

- For a Site EUI-based BPS (like MN proposal):

    o Best practice: Do not subtract renewable energy from EUI

    o Acceptable alternative: Only subtract on-site renewable energy that is consumed onsite

    o Do not provide any deduction for exported renewable energy or off-site purchase

- For a GHG-based BPS:

    o Treat on-site renewable generation as emission-free, but do not allow off-site purchase

Rewewables proposal for the policy

Include only: On-Site Renewable Energy Use, generated *and used* onsite.

This approach holds close to the goal of BPS, which is building performance at the site.

This approach also responds to stakeholder feedback requesting flexibility.
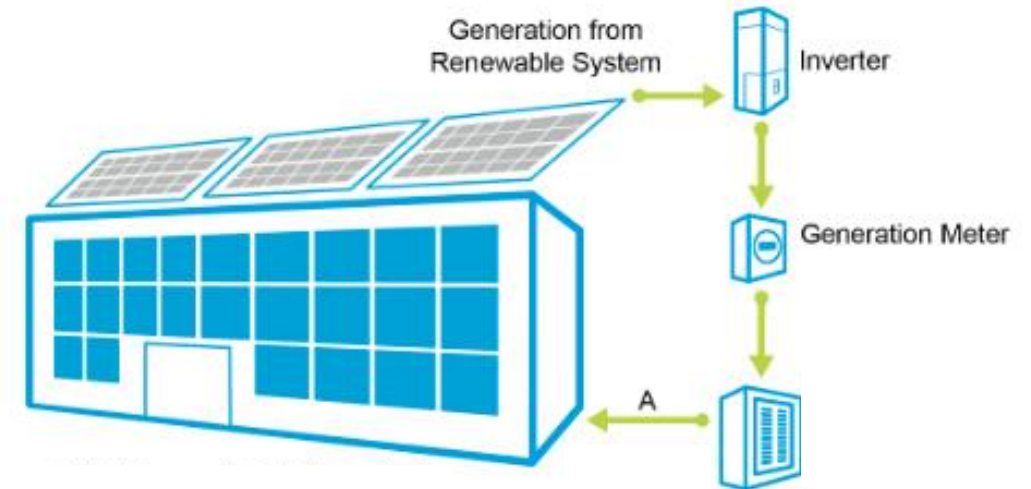
Generation from Renewable System → Inverter

Generation Meter

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Questions/Concerns

Please enter into the chat or raise your hand to speak.

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Ensuring Accurate Data

Ensuring accurate data

Without accurate benchmarking data, we won't see the appropriate:

- Building performance improvements
- Bill savings
- Carbon savings

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Ensuring Accurate Data
Common Issues identified by verifiers

Incorrect Data Category	Examples
Gross Floor Area	• Estimate that needs verification (e.g., original GFA was only estimated) • Missing common areas • Missing ground floor retail • Missing parking (when not sub-metered)
Missing Meters	• Missing meters for residential or commercial tenants • Missing energy/fuel types
Building/Meter configuration	• Incorrect mapping of meters to buildings in multi-building property • Incorrect breakdown of space uses in a mixed-use building
Other utility data errors	• Missing months • Wrong units (especially common with steam!) • Utility company errors and corrections • Renewable energy errors (very common!)
Property type	• Incorrect property classification
Vacancy	• Incorrect tracking of vacant space

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Third Party Verification

- Requiring third party verification of benchmarking data for key reporting years is also essential

- Incorrect data has significantly greater consequences for a BPS than a benchmarking policy.

- While not all jurisdictions with benchmarking laws require third-party verification, **all** jurisdictions with a BPS have some sort of third-party data quality verification requirement. (ENERGY STAR Certification does qualify.)

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Verifier Certification

- Verifiers must be certified; specific certifications allowed vary by jurisdiction
- Always approved:
  - Professional Engineer (PE)
  - Licensed Registered Architect (RA)
- Commonly approved:
  - Certified Energy Manager (CEM), AEE
  - Building Energy Assessment Professional (BEAP), ASHRAE
- Local considerations:
  - May or may not require PE/RA to be licensed in the state
  - May add additional certifications that are promoted/offered by locally important educational institutions or training programs

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What is a "third party"?

- Most jurisdictions require the verification be done by a third-party who is neither the owner, nor the property manager, nor the consultant who conducted the benchmarking

- ENERGY STAR Certification counts. EPA is the third-party

- Some jurisdictions allow verification to be done by an employee of the owner or property manager and/or by the benchmarking consultant.
  - This creates challenges and is not recommended
  - *If* in-house verification is allowed, it should be limited to PE and RA, which have professional standards of care that govern in-house peer review, and clear revocation/accountability mechanisms.

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3rd Party Verification Proposal for the Policy

- Include third party verification data verification requirement beginning in 2026
- Third party verifier certifications include:
  - RA
  - PE
  - CEM
  - BEAP
  - Other equivalent certifications as developed in rules by the Commissioner
- Verifiers could not be in-house staff or the benchmarking consultant

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Questions/Concerns

Please enter into the chat or raise your hand to speak.

New Alternative Compliance Pathways

Reminder from last time

- Common flexibility cases in a BPS bill
  - Financial distress, major renovation, pending demolition, vacancy >50%, affordable housing

- Flexibility cases that could be addressed through rulemaking
  - Capital cycles, financial hardship, standardized target adjustments, campuses, portfolios
    - Most of these would result in the creation of a Building Performance Action Plan

Refresher: Flexibility cases that could be addressed through rulemaking

Capital cycles
- BPS may be less cost-effective if equipment already replaced recently
- Important to plan for long-term compliance

Financial hardship concerns
- Some programs offer additional flexibility to avoid putting building in financial distress
- Requires careful regulaotry review

Standardized Target adjustments
- Better to adjust standard than re-normalize EUI
- Standard adjustments available for uses like operating hours, swimming pools, data centers...

Campuses
- Compliance typically at campus level
- Long-term extension option to support district energy system transitions in some jurisdictions

Portfolio-based approaches
- Only Boston has for all buildings
- Many have this approach for public sector buildings

A Building Performance Action Plan can help with this

Requires planning and analysis

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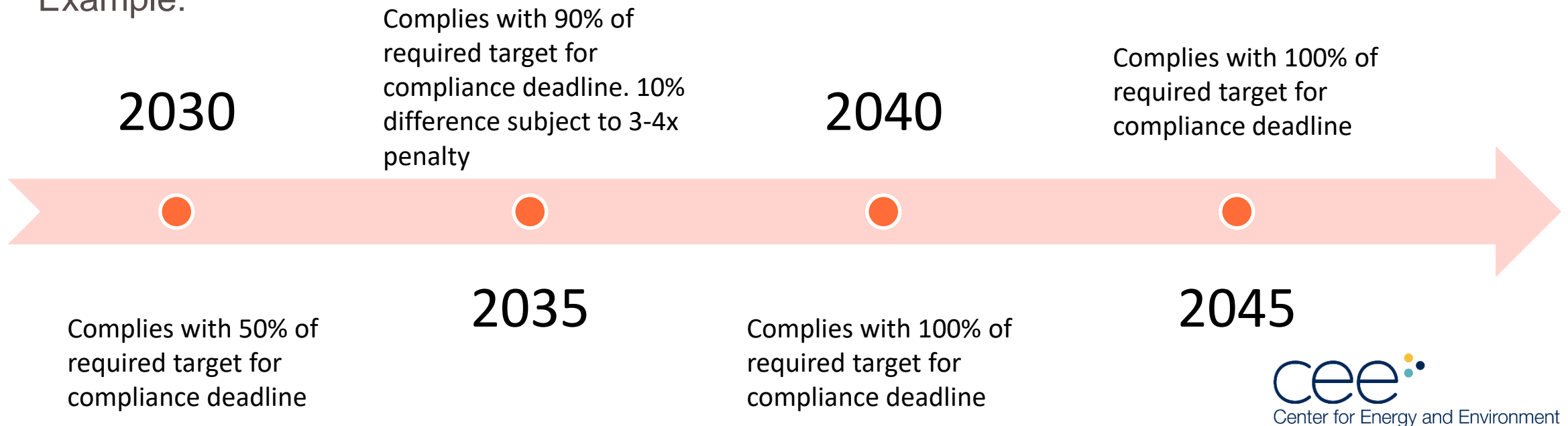
Issue with Building Performance Action Plans

- Can be time and resource intensive to create and compliance staff to review

- So….what other standardization options could there be?

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New Idea for Alternative Compliance Pathways

- **Meet 50% of target by compliance date.** If achieve 100% of *next* target, then no penalties. If miss next target, 3-4x penalty.
  - Stipulations: can't use twice in a row; can't use in 2045; compliance path must be declared 2 years early; if miss the first 50% target, receive full normal penalty

Example:

2030

Complies with 90% of required target for compliance deadline. 10% difference subject to 3-4x penalty

2040

Complies with 100% of required target for compliance deadline

2035

2045

Complies with 50% of required target for compliance deadline

Complies with 100% of required target for compliance deadline
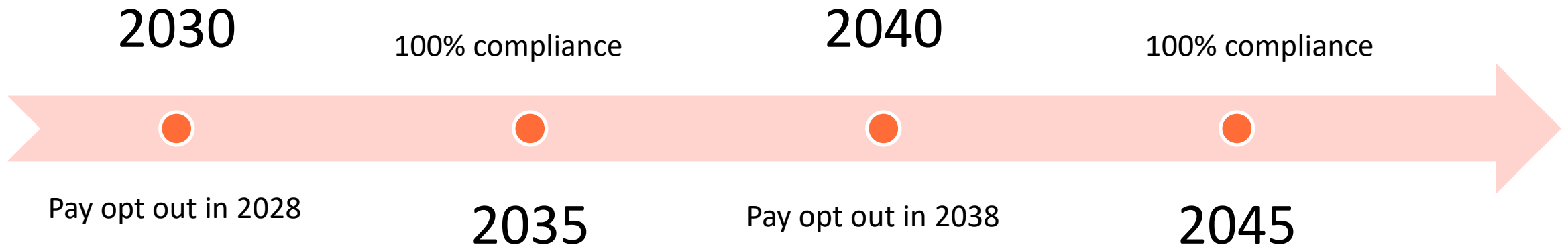
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New Ideas for Alternative Compliance Pathways

- Pay to opt out
  - Pay X% less than the penalty would be
  - Must be declared and paid 2 years in advance
  - Can only be done once in a row
  - Funds enter grant program pool

2030

100% compliance

2040

100% compliance

Pay opt out in 2028

2035

Pay opt out in 2038

2045

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Disclosure at the time of sale

- New Alternative Compliance Pathway ideas would likely necessitate transparency of BPS compliance path status at time of sale

  - To ensure protection for buyers

  - To facilitate successful compliance and energy improvements

Questions/Concerns

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Next Steps

- Future stakeholder conversations hosted by CEE will come from Aly Eilers and/or Molly Janis

- Rep. Kraft will continue to reach out to groups for feedback and address specific issues

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THANK YOU!

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