DORIS DUKE FOUNDATION

Duke Farms

Climate Toolkit Symposium – *Facilities Management Breakout*

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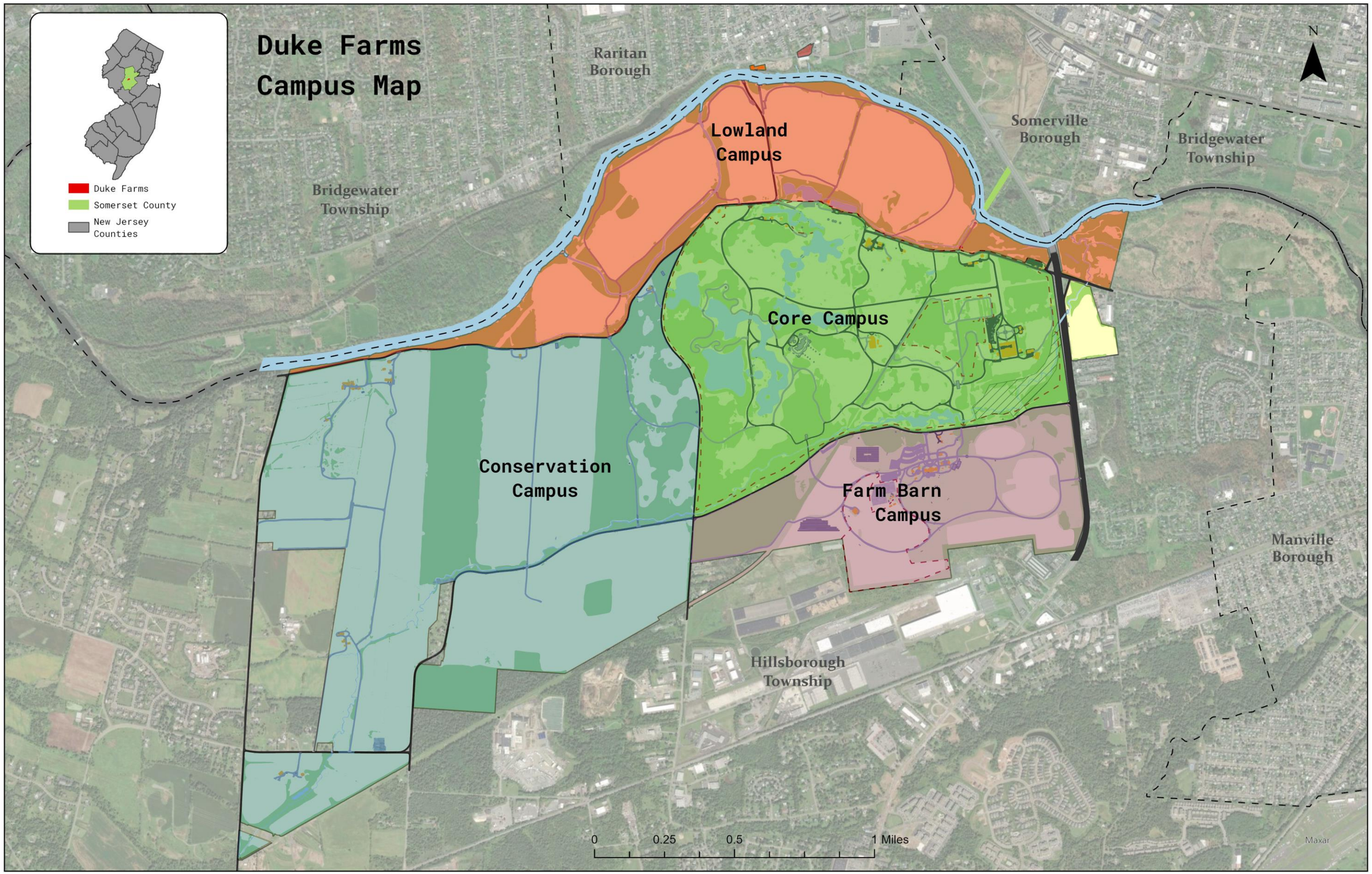
Facilities Management Breakout Agenda

1. **Duke Farms and Natural Systems Energy Plan overview**
    - Guided Round Table Discussion Prompt 1
2. **Master Planning and Sustainability Framework Overview**
    - Guided Round Table Discussion Prompt 2
3. **Maintenance Management Systems Overview**
    - Guided Round Table Discussion Prompt 3
4. **Key takeaways, next steps and close out**

Duke Farms Campus Map



Duke Farms: Natural System Energy Plan
Carbon Negative, Nature Positive

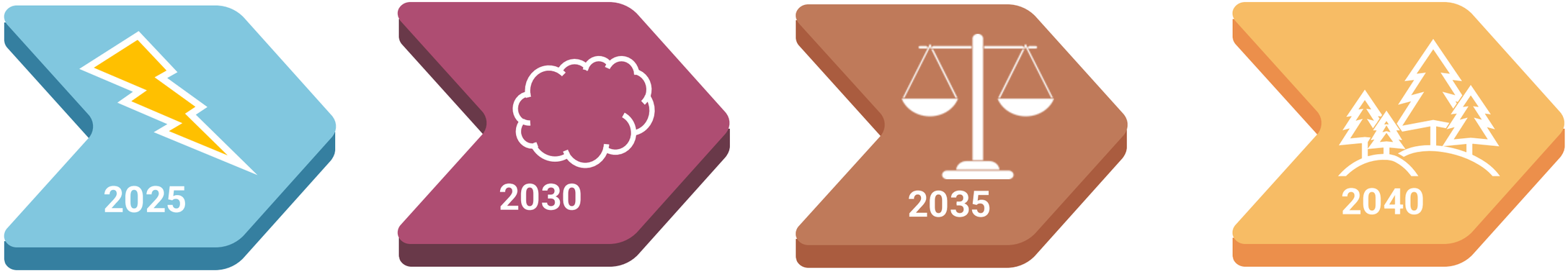
Motivations and Objectives

Take Responsibility: Address the climate crisis, environmental quality impacts, and human public health risks by being accountable for Duke Farms' energy footprint. Fulfill that responsibility by changing the way Duke Farms obtains and uses energy, with a focus on physical reductions in fossil fuel use.

Set a High Bar: Take a comprehensive and rigorous approach to develop and implement the Natural Systems Energy Plan, and "do it right" to deliver authentic and high-integrity physical emission/impact reductions (not just accounting offsets).Lead by example as a sustainable energy trailblazer, with a focus on innovation and synergies that Duke Farms is uniquely able to pursue.

Expand Our Impact: Demystify sustainable energy, conclusively demonstrate feasibility, and illustrate a path to action for other energy users. Duke Farms has intentionally prioritized solutions that can be replicated by others and intends to have an impact beyond its borders that will accelerate and expand deployment of sustainable energy solutions.

Natural System Energy Plan Goals



GOAL	CLEAN ELECTRICITY	REDUCED EMISSIONS	CARBON NEUTRAL	CARBON NEGATIVE
What it means	100% Clean Electricity	80% Clean Energy	Benign Activity, No Harm	Positive Impact and Restoration
Why it matters	Significantly cleaner, enables electrification	Mitigate climate crisis and public-health harm	Achieve long term operational sustainability and environmental health	Reduced emissions isn't enough: those who can do more, must do more
Measured how	100% of all electricity use from renewable sources on a net annual basis	At least 80% of all energy use from renewable sources on an hourly basis (no offsets)	Resilient operations with zero carbon footprint on a Scope 3 basis	Sequester more carbon than all operations emit, net generator of renewable energy

NSEP – Action Plan

Energy Conservation & Efficiency:

- LEED buildings
- Operational changes
- Basic envelope improvements
- LED lighting
- Smart thermostats/controls

De-Carbonize Electricity Supply:

- On-site Solar (100% of load, including growth) – Including EcoVoltaics
- Integrated Battery Storage (short term, possibly long-term storage later)
- Market procurement Of clean energy
- Site distribution system upgrades

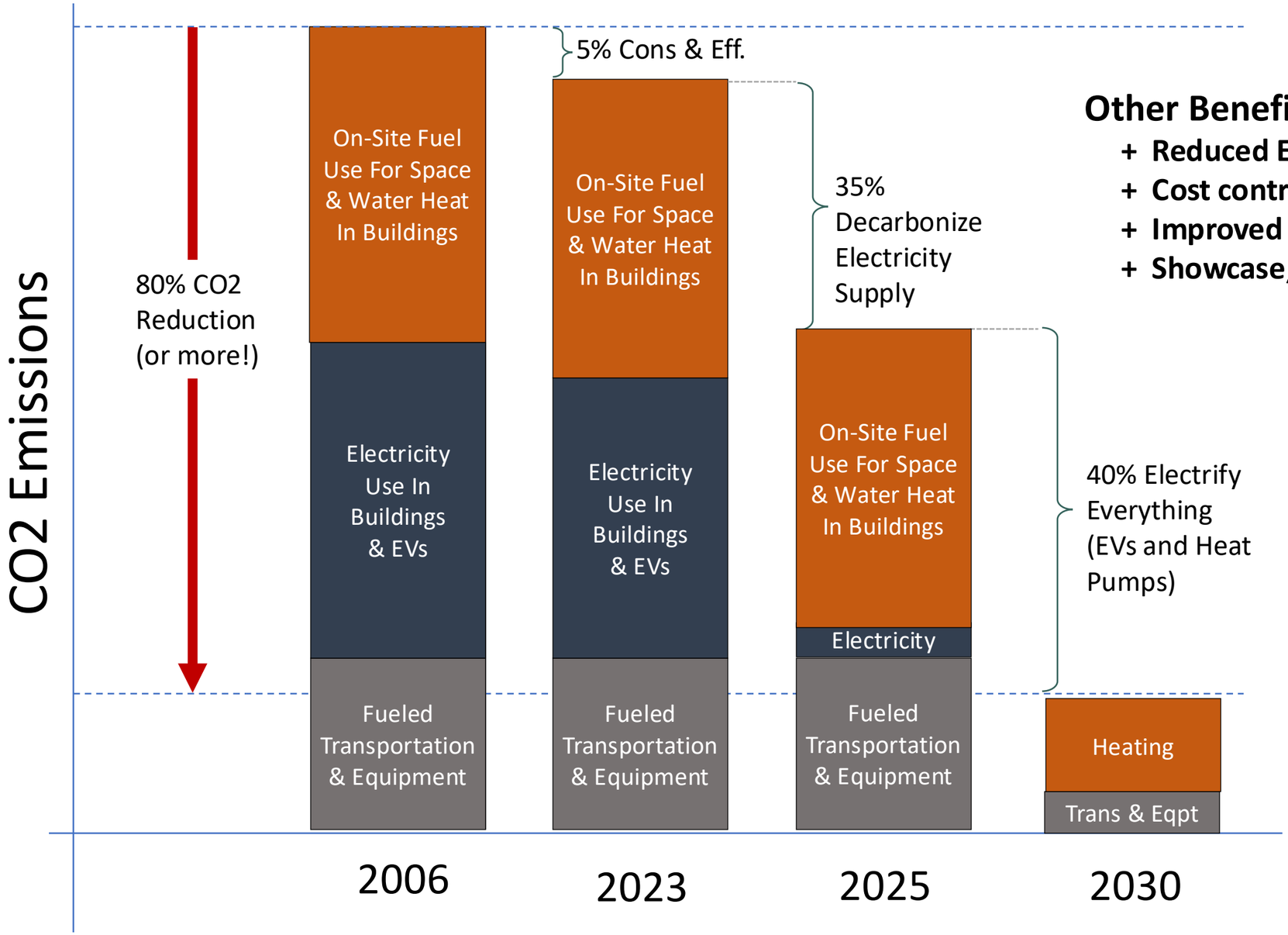
Electrify Everything:

- 100% vehicle electrification (5-yr plan under development)
- Hosting public EV charging infrastructure (Scope 3 impact)
- 100% heat pumps for space/water heating (5-yr plan under development)
- Resiliency enhancements (microgrids, etc)

Specialized Solutions:

- Greenhouse heating
- Synergies between clean energy and agricultural practices

NSEP – Projected Results



Other Benefits:

- **+ Reduced Energy Costs**
- **+ Cost control, predictability**
- **+ Improved resiliency**
- **+ Showcase, Enable Others**

Note: Impact Estimates Being Updated Based On Latest Plans And Updated Analysis

Discussion Prompt 1:
Natural Systems Energy Planning

Big “I”

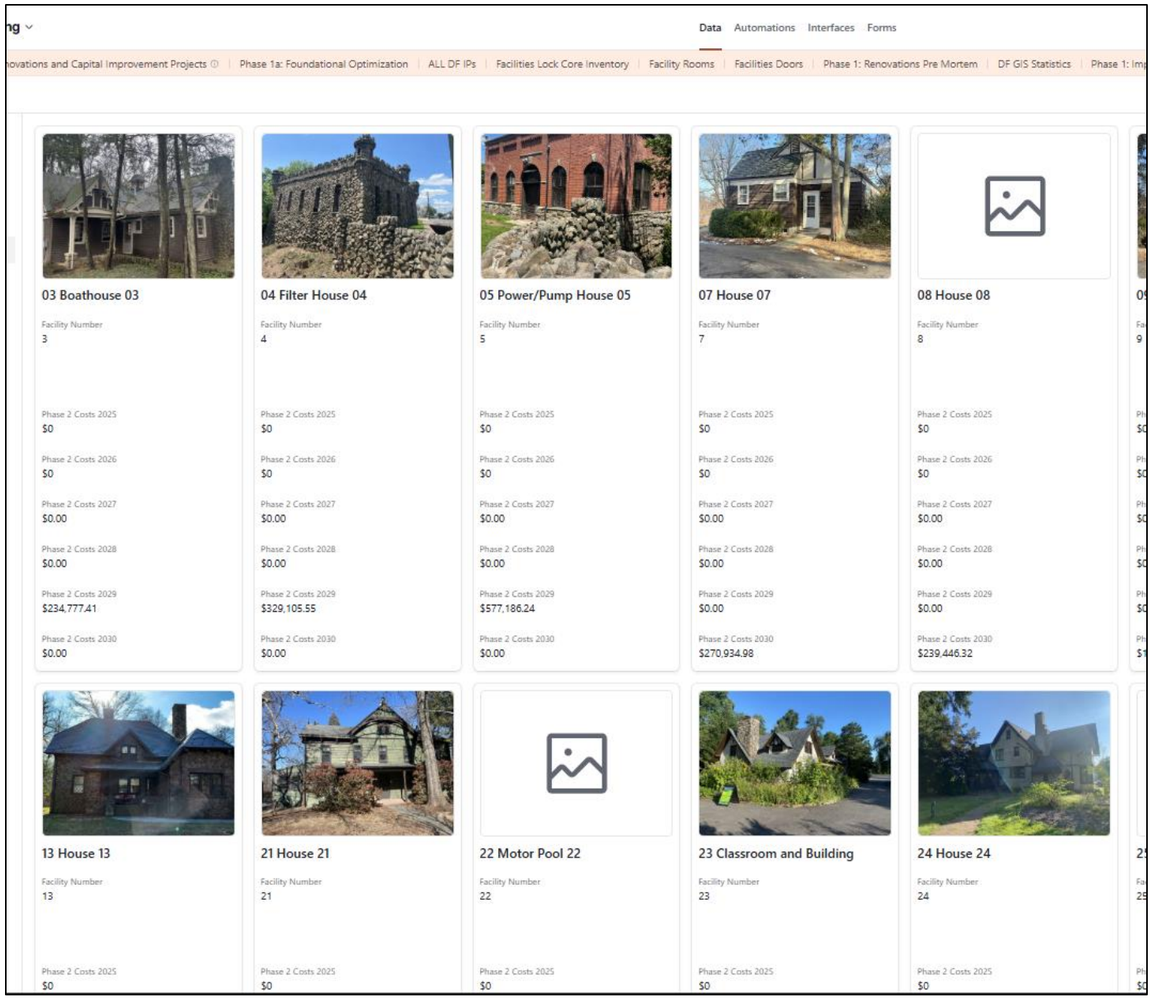
How can long term energy planning align with your organization’s broader sustainability and climate goals?

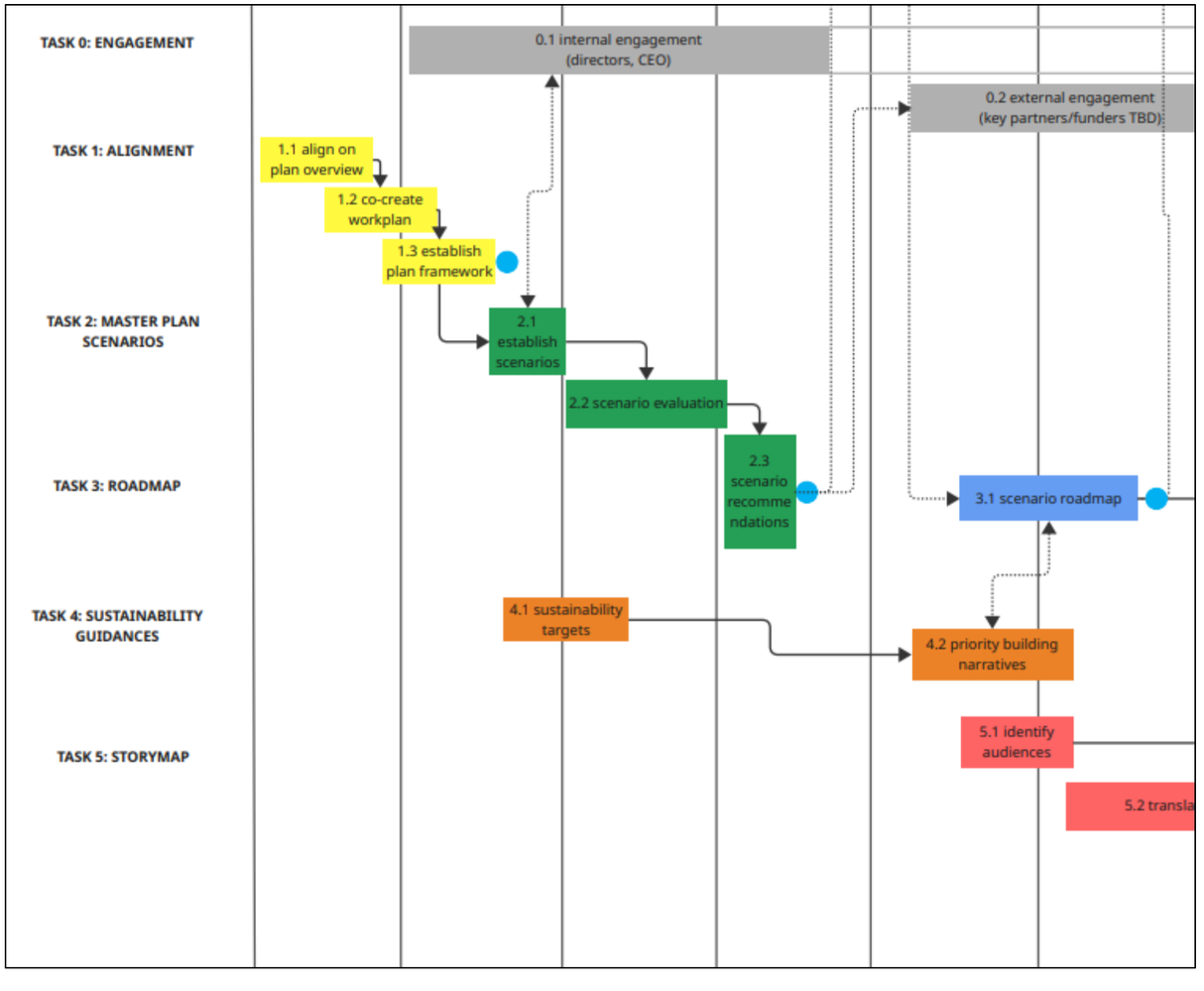
i.e. what commitments have you made for the next 5-10 years.

Little “I”

What specific steps or technologies have been most effective in reducing Scope 1 and Scope 2 emissions at your facility?

Master Planning and Sustainability Framework Overview





Discussion Prompt 2:
Master Planning

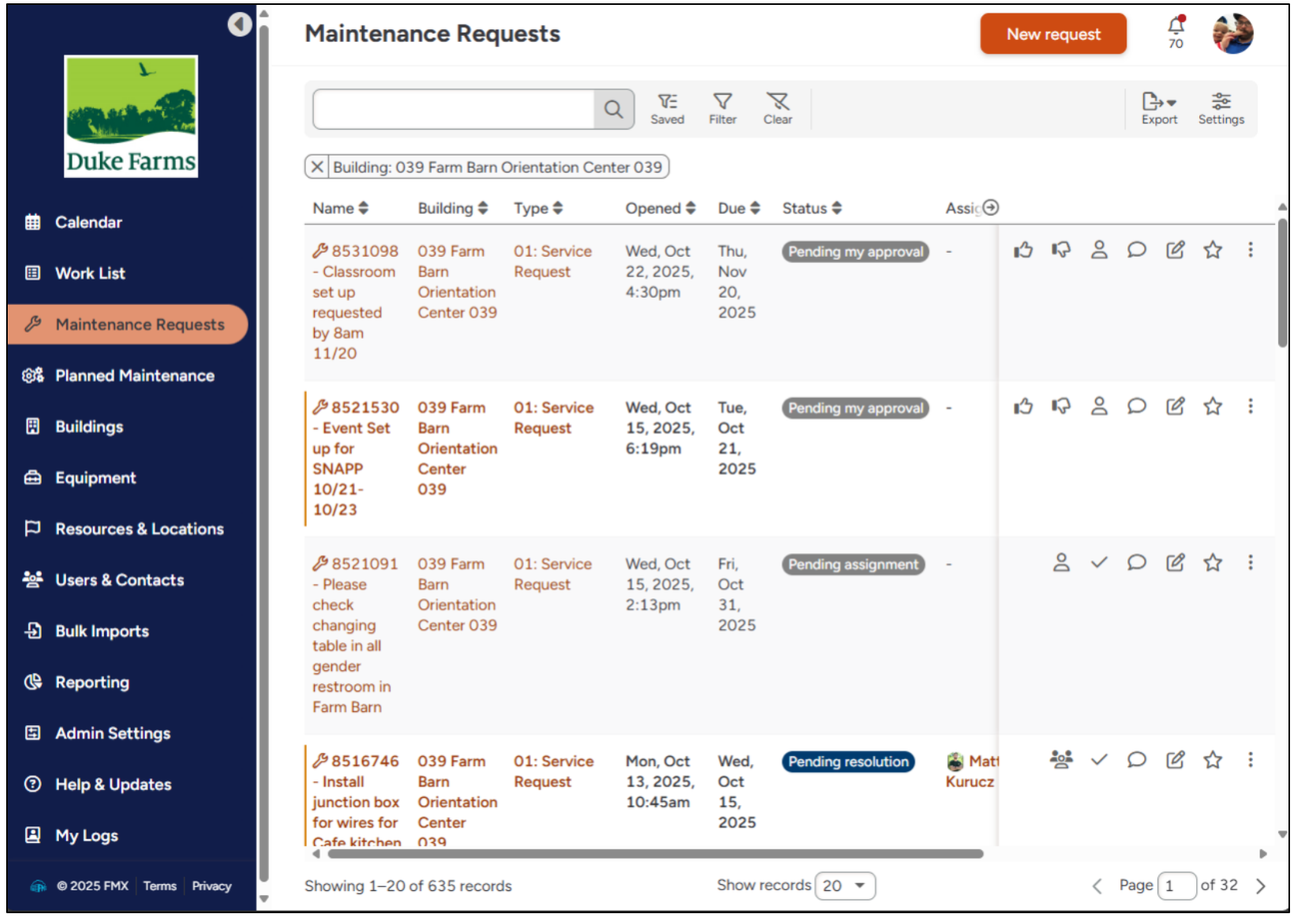
Big “I”

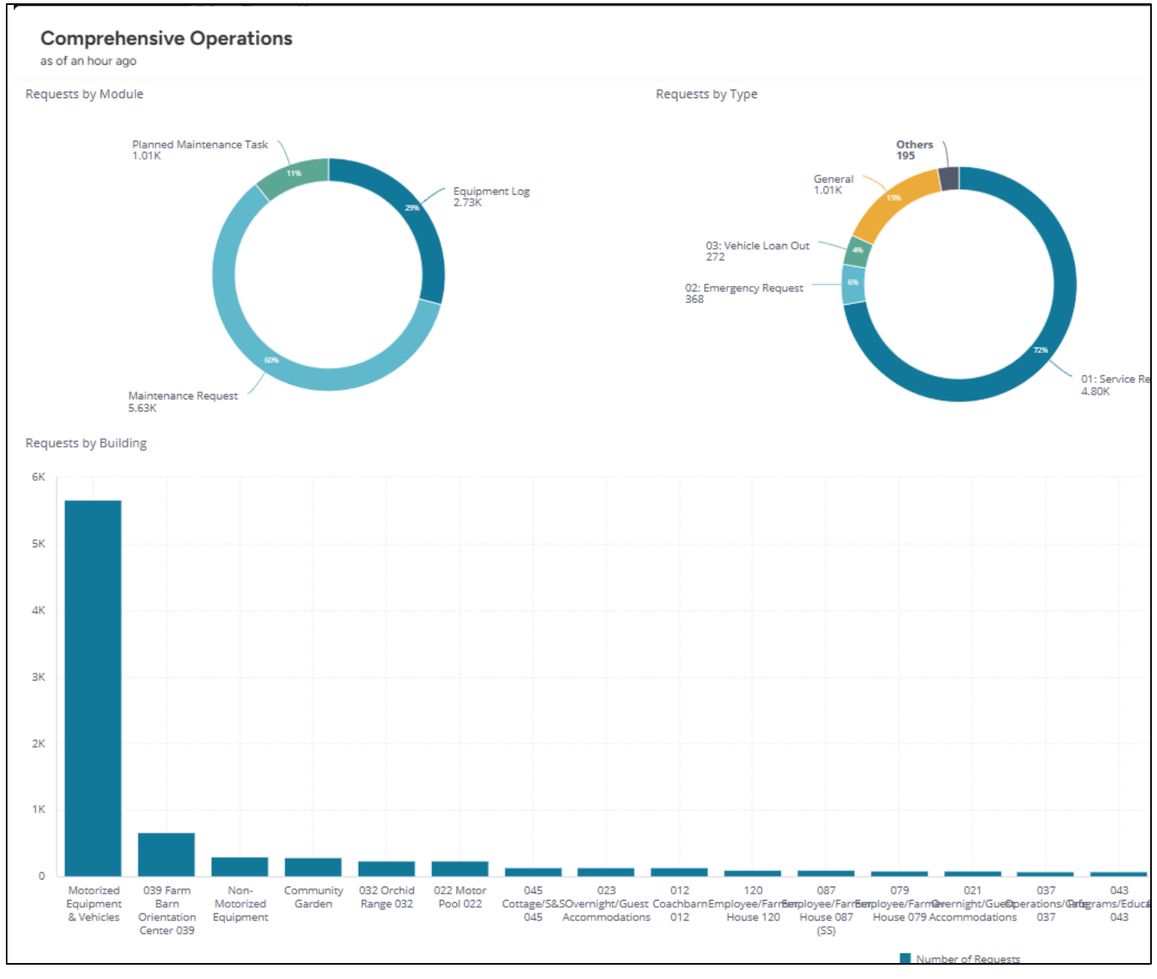
What criteria should be included in a modern sustainability framework for a 10-year master plan?

Little “I”

How are you integrating sustainability guidelines into daily operations, capital planning, or construction standards (waste stream and procurement).

Maintenance Management Systems Overview





Discussion Prompt 3:
Maintenance Management Systems

Big “I”

How can technology and data systems transform how we manage and measurement facility performance?

Little “i”

Which CMMS tools or processes have improved workflow efficiencies and mitigated staffing and budget constraints.

Key takeaways, next steps & close out

Scan QR to learn more about Duke Farms Natural System Energy Plan and download the Blueprint.

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