Commonwealth of Massachusetts

**Executive Office of
Energy and Environmental Affairs**

2035 CECP Kickoff

GWSA IAC Meeting
December 4, 2025

Agenda

1. Welcome & Introductions

   - Review and approval of meeting minutes from 9/25/25

   - Updates and announcements

2. Innovative Approaches to Climate Solutions

3. Approaches to Modeling

   ~ Break ~

4. Decision-Making Framework

5. Public Comment

Welcome & Introductions

Reminder on CECP Requirements

At a high level, these plans must:

Address the pathway to meeting sublimits for electric power, transportation, commercial and industrial heating and cooling, residential heating and cooling, industrial processes, and natural gas distribution and service

Consider equity; costs; benefits (including societal benefits); interaction with air quality standards; administrative burden; relative contribution of each source or category of sources to statewide emissions of greenhouse gases; and whether greenhouse gas emissions reductions achieved are real, permanent, quantifiable, verifiable, and enforceable
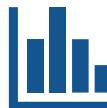
Set technological adoption benchmarks

Summarize Commonwealth efforts to improve/mitigate economic, environmental and public health impacts on low- or moderate-income individuals and EJ populations

Measure carbon flux of, adopt sequestration goals for, and develop action plans for natural and working lands

Include the results of quantitative modeling and analysis of the commonwealth's energy economy and GHG emissions in their state and regional context, publishing those results where feasible

Innovative Approaches to Climate Solutions

Rebekah Emanuel

Rebekah is the Senior Advisor for Social Entrepreneurship and Climate at Harvard University. She brings over 15+ years of experience in the social entrepreneurship and climate spaces. Rebekah is the Chair of Harvard's Climate Entrepreneurs Circle, teaches "How to Create a Climate Venture" which is offered across 55 universities, and has also hosted Harvard Business School's podcast on climate, Climate Rising. She has brought multiple start-ups from a few team-members to several hundred and from little revenue to multiple millions. Prior to joining Harvard Innovation Labs, Rebekah was the Executive Director of Imagine Boston 2030, the first longterm plan for the City of Boston in 50 years. Imagine Boston tackled issues from where to build, to how to plan for decarbonization. Rebekah is a graduate of Yale and Harvard Business School, and holds an MBA and an LLM.

Decarbonization

Innovation Techniques

Tools from Startup Land
to See Old Problems New Ways

Instagram	@harvardinnovationlabs
Facebook	@harvardinnovationlabs
LinkedIn	@harvardinnovationlabs
YouTube	@Harvardilab

Cross Pollinating Tools
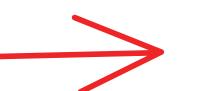
→ Our Agenda Together

01
Tools

- To turn a well-chewed on problem into a new insight

02
Three Things

- Personas
- Problems
- The magic wand moment

03
The Decarb Who

- Key decarb areas
- 7 people who care (tables)
- Problems to solutions (gallery)

Write Down

A Reverse It

Reverse It

More People
Small Space
Trying to Get Somewhere
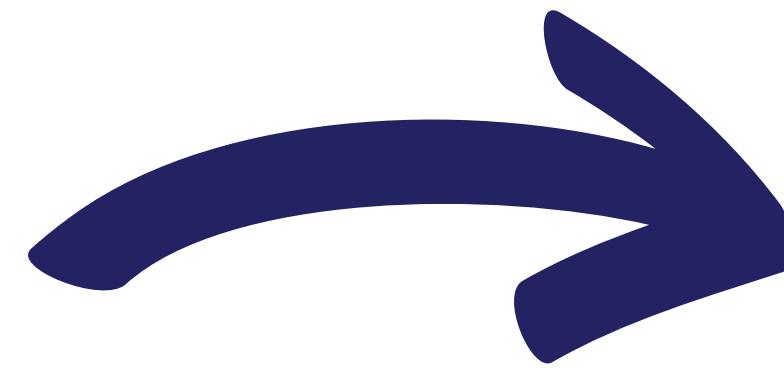
→ More Emissions

Reverse It

More People
Small Space
Trying to Get Somewhere
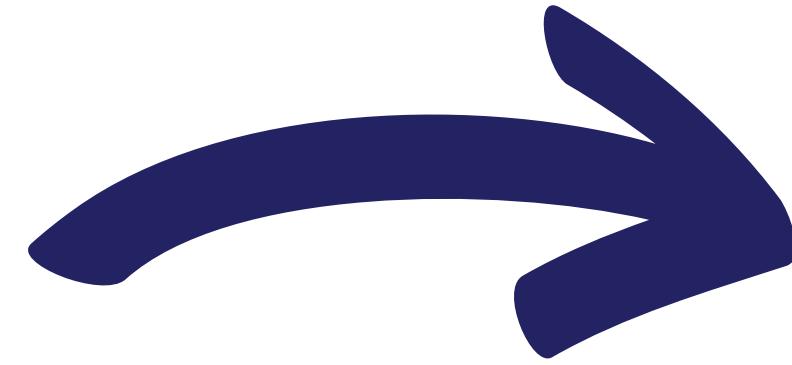
LESS

More Emissions

Identify the topic

Pinpoint the key outcome


Reverse it

Eliminate It

Eliminate It

Pinpoint the key feature

Eliminate it

Get Out of Your Box

Get Out of Your Box

WWI Military designers borrowed from the Cubist Art of Picasso to create better camouflage patterns for tanks

Identify someone laughably outside the domain

Ask how they would solve it

Combine It

Hoboken pretty much filled up like a bathtub. It was pretty hellish.

Stephen Marks
City Manager, Hoboken

Complaints

No Parking

Not Enough Green Space

# Combine It
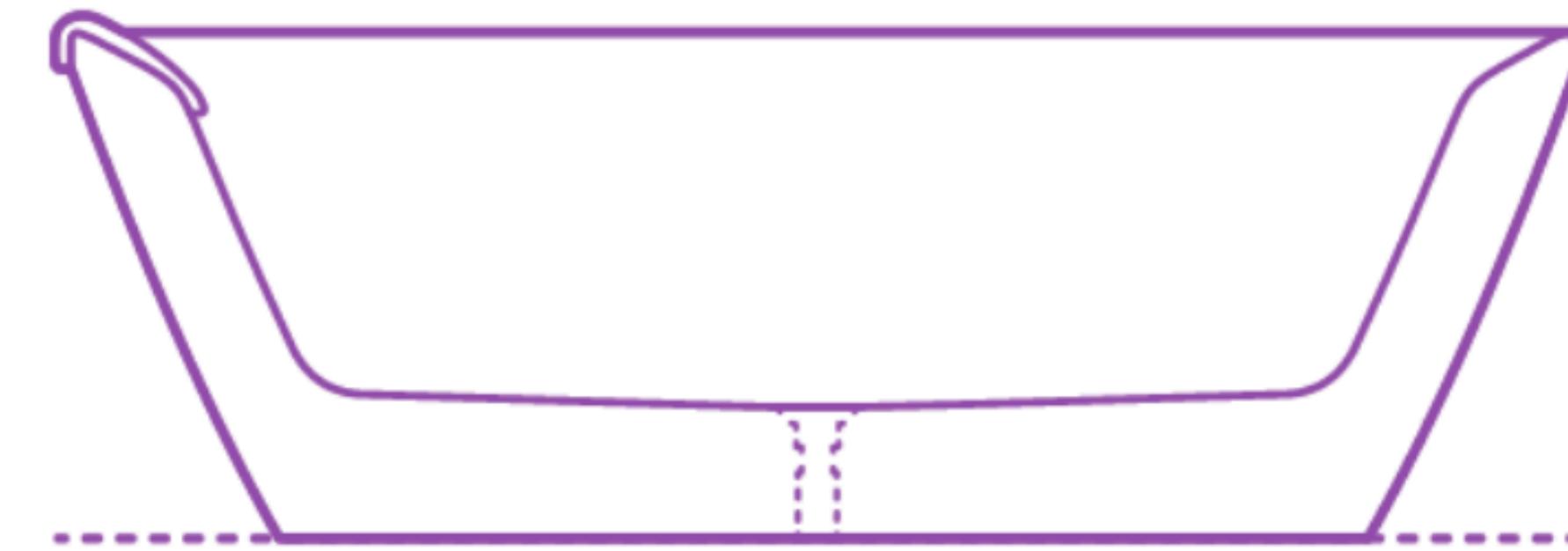
Combine It
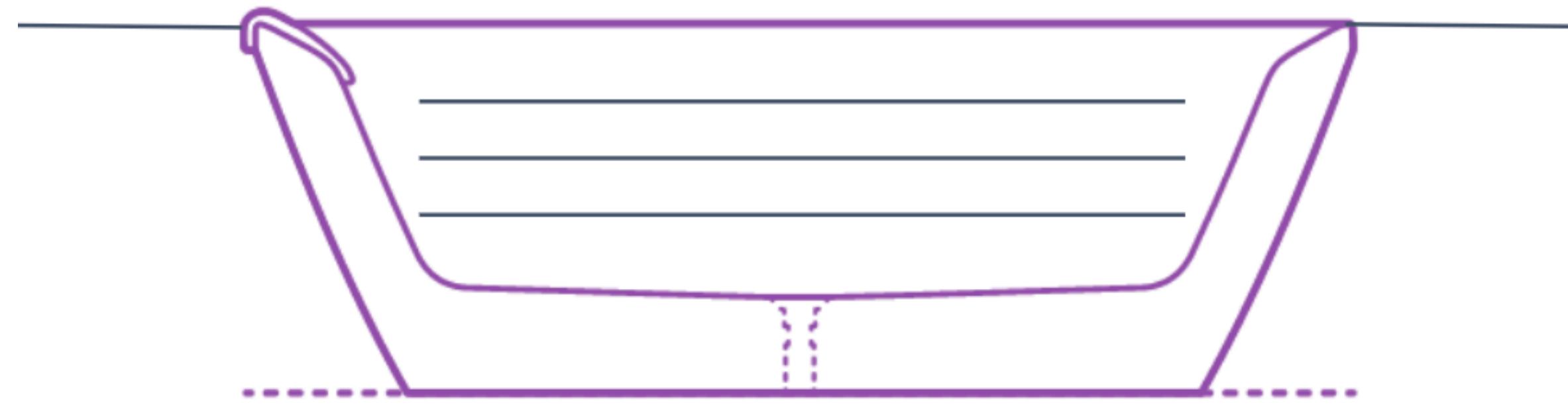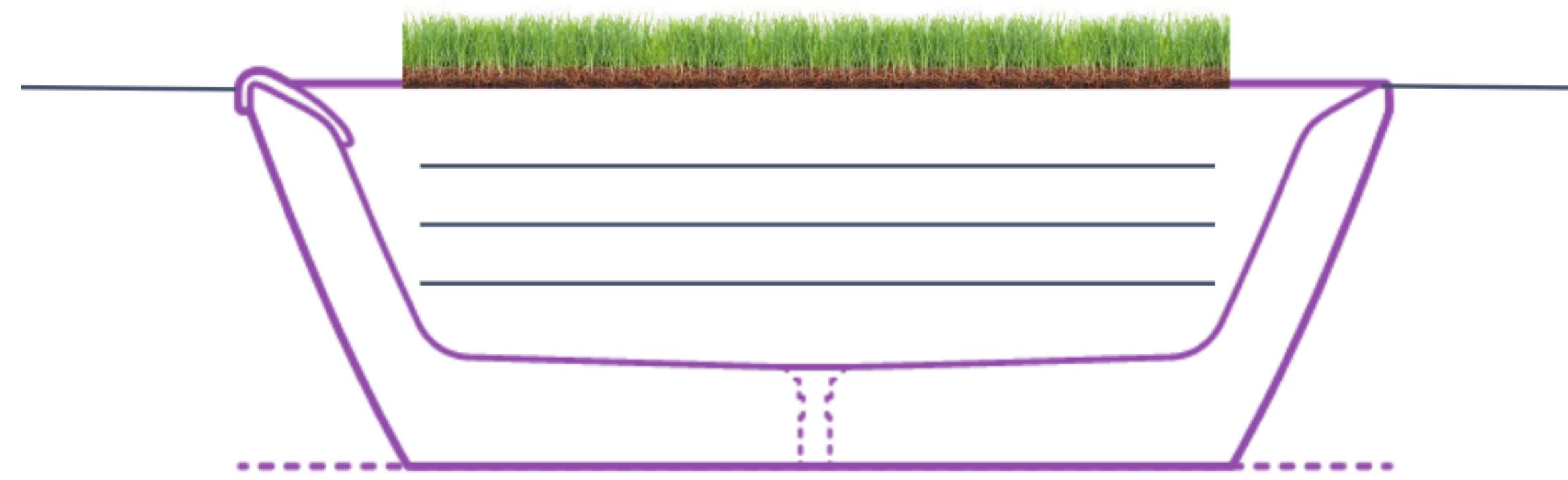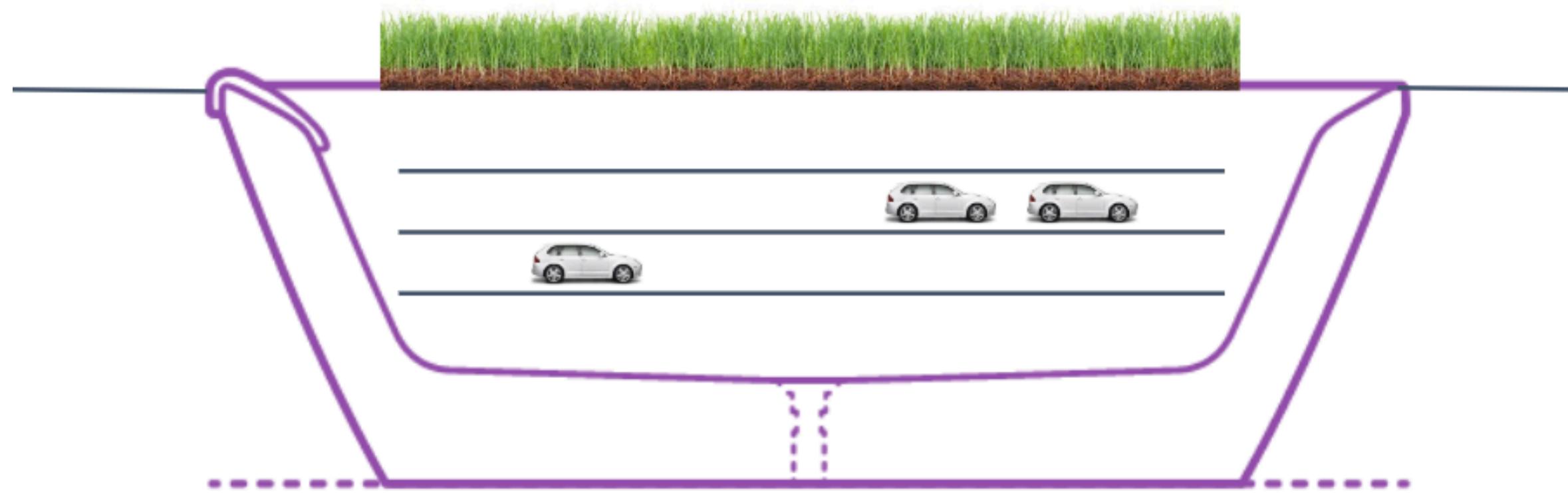
Combine It

Combine It

No Parking

No Green Space

Terrible Flooding
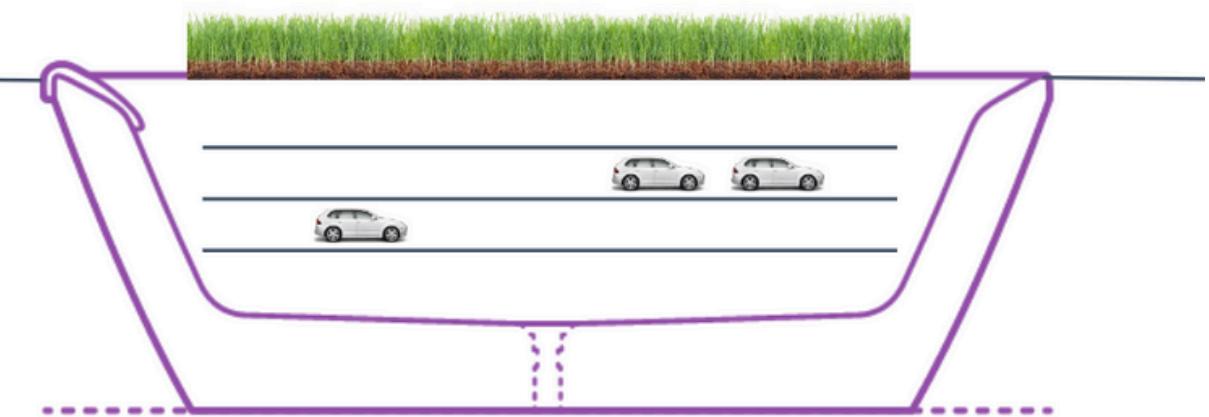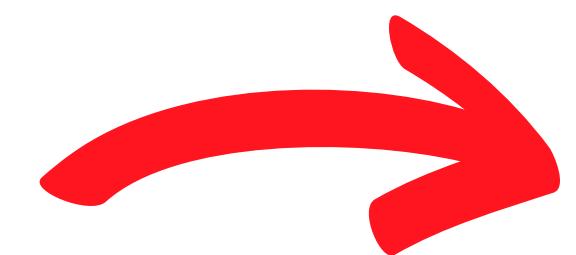
Cross Pollinating Tools
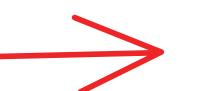
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How to Turn Problems into a Plan

What Is...

Kid-Tested,
Mother Approved

Who Was This?

Imagine you are a teacher...

Goals & Motivation

In general, you are dedicated to:

- Preparing students to build a better future. This includes teaching about climate change.
- Engaging and inspiring your students.

Jobs & Responsibilities

You have to:

- Plan lessons for 5 different classes for tomorrow.
- Develop a compelling unit in advance with relevant lesson plans, videos, articles, assessments, activities, etc.

AND

- Grade over 60 papers.
- Get dinner on the table for your family and help with your kids' homework.

SUBJECT to CLIMATE

Here is one story of your evening...

Pain Points

You start to Google climate change teaching resources, and you find:

- An **overwhelming amount** of hits with no way to sort them
- Websites that are **difficult to navigate**
- Resources that **lack credibility**
- Materials that **don't fit** what you need to teach

As you work into the night, you feel:

- A lack of confidence in your ability to teach about climate change.
- Tired, stressed, and overwhelmed by the planning process.*

SUBJECTto CLIMATE

Here is a different story...

As you search the internet, you find a website with:

- Easy-to-use filters resulting in a curated selection of **high quality** and **credible** materials that fit your needs.
- Lesson plans created by **current educators** who understand the realities of being a teacher.

As you develop your plans for your classes, you feel:

- **Confident** in your abilities.
- **Energized** to teach and inspire students.

The Solution

I teach [English ▼] for grades [6-8 ▼]
I'm looking for [Lesson Plans ▼]
... to teach [Common Core ▼] [RL.6.3 ▼]
... about [water cycles] 🔍

SUBJECT to CLIMATE

NASA
YALE PROGRAM ON Climate Change Communication
CLIMATE GENERATION A WILL STEGER LEGACY
CLEAN
ART WORKS FOR CHANGE
The Nature Conservancy

Lost World - Cambodia
Global Oneness
Grade 6-8, Lesson Plans
NGSS, CCSS.ELA
3,129 likes

Water Water Anywhere
The Water Project
Grade K-8, Lesson Plans
CCSS.ELA
4,211 likes

Water and Climate Change
Inter-American Development Bank
Grade 6-8, Lesson Plans
NGSS, CCSS.ELA
2,182 likes

The opportunity is not to reinvent the wheel, but to be the connection between the demand from educators and the supply of teaching resources.

*See Appendix B for our list of current content partners.

SUBJECT to CLIMATE

Key Startup Concepts

Key Startup Concepts

01	**Persona**
02	**Pain Points**
03	**Value Proposition**

Elevator Pitch

For XXX people

who have YYY problem

we do ZZZ.

ç

For XXX people
who have YYY problem
we do ZZZ.

01	**Customer Persona (XXX)**
02	**Pain Points (YYY)**
03	**Value Proposition (ZZZ)**

Personas

The Decarb Who

Who cares about this?

What problems do "you" have?
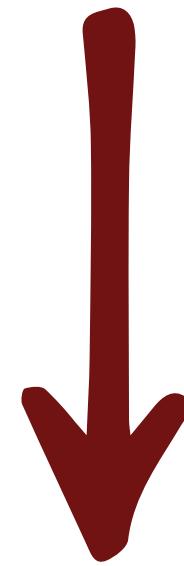
Give your persona a first name
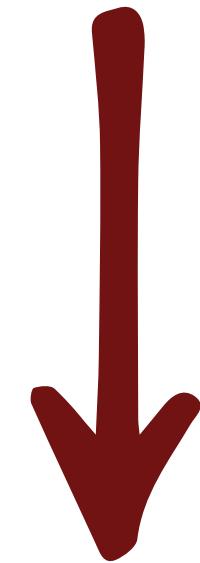
3 negative adjectives

The Decarb Who
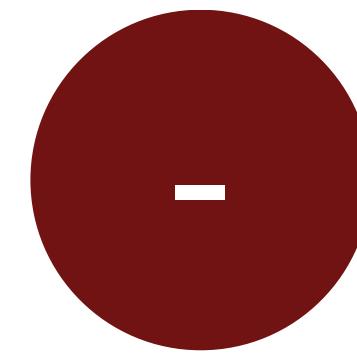
3 Negatives   3 Positives

Alma

A real estate developer who wants to build more housing

-

+

But
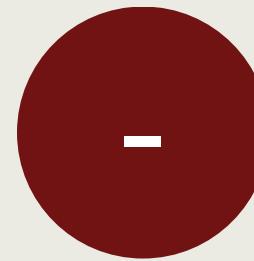
01	**Faces high construction costs**
02	**Is worried about siting/permitting delays**
03	**Encounters NIMBYism**
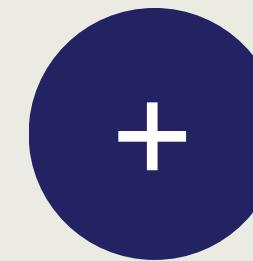
Avoided interconnection costs

**Fewer infrastructure upgrades leading to shorter utility timelines**

Less neighborhood disruption

Alma

A real estate developer who wants to build more housing
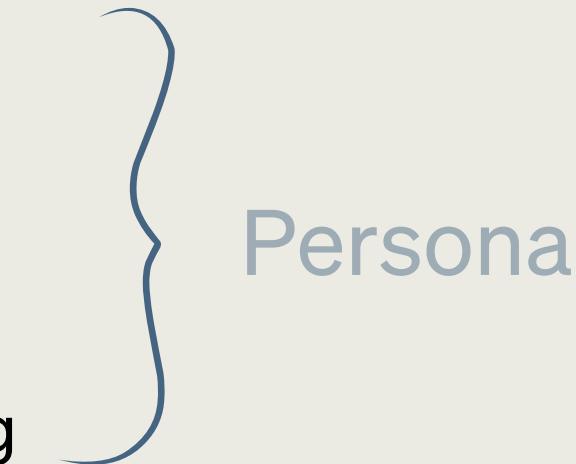
Persona

-

+

But

01	Faces high construction costs	Avoided interconnection costs	
02	Is worried about siting/permitting delays	Fewer infrastructure upgrades leading to shorter utility timelines	
03	Encounters NIMBYism	Less neighborhood disruption	

Pain Points

Value Proposition

"

For XXX people

who have YYY problem

we do ZZZ.

Elevator Pitch
Techstars Formula

01	**Customer Persona (XXX)**
02	**Pain Points (YYY)**
03	**Value Proposition (ZZZ)**

Eddie

An elderly homeowner

-

+
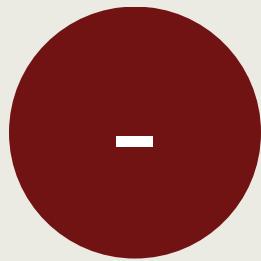
But

01	**Challenged by high bill costs**	**Lower monthly bills**
02	**Needs more bill predictability**	**More control over energy costs**
03	**Faces outages**	**Backup generation**
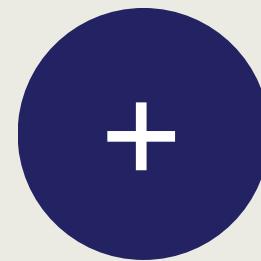
Cross Pollinating Tools

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How can decarbonization help address everyday problems?

01	**Home heating and cooling**
02	**Energy infrastructure that supports growth**
03	**Driving from point A to point B**

For XXX people

who have YYY problem

we do ZZZ.

Elevator Pitch
Techstars Formula

XXX	**Persona**
YYY	**Pain Points**

4 min

ZZZ	**Value Proposition**

6 min

Alma

A real estate developer who wants to build more housing

Persona

-

+

But

	Pain Points	**Value Proposition**
01	Faces high construction costs	Avoided interconnection costs
02	Is worried about siting/permitting delays	Fewer infrastructure upgrades leading to shorter utility timelines
03	Encounters NIMBYism	Less neighborhood disruption

Readout Time!

01	**Home heating and cooling**
02	**Energy infrastructure that supports growth**
03	**Driving from point A to point B**

Our next sessions

Thank You

Breakout

Approaches to Modeling

"All models are wrong, but some are useful" – George Box

*Modeling is storytelling grounded in science, social science, and mathematics. Decarbonization models tell **stories about what we can collectively do** – from a policy and technological standpoint – to remove greenhouse gases from the Massachusetts economy. They also tell **stories about why that matters** for health and well-being beyond the climate benefits. We do this modeling not just because of legislative requirements, but because these **stories are designed to motivate action**. Making the right modeling decisions can **support legislation**, **inform new policy**, and **inspire actors across the state**.*

FIGURE 3-5. PAST EMISSIONS THROUGH 2020, EMISSIONS LIMITS AND SUBLIMITS, AND ILLUSTRATIVE POTENTIAL EMISSIONS TRAJECTORY THROUGH 2050
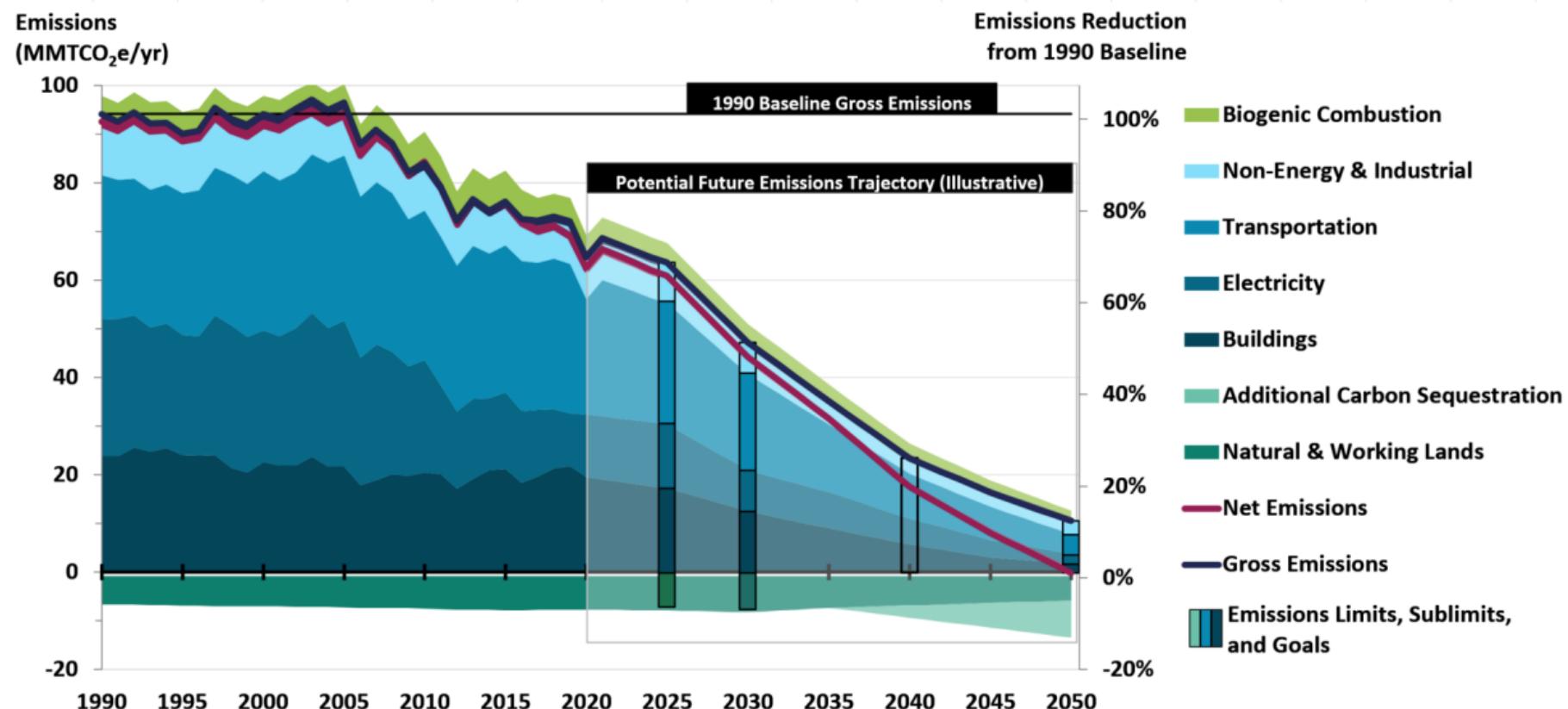
Modeling Approach

Feature 1: Multiple scenarios including business as usual

Feature 2: Model policy packages

Feature 3: Affordability Analysis

Feature 4: Uncertainty Analysis

Example: Vermont Pathways Analysis Report

Figure 2. Transportation Sector Greenhouse Gas Emissions in Mitigation Scenario by Fuel Type
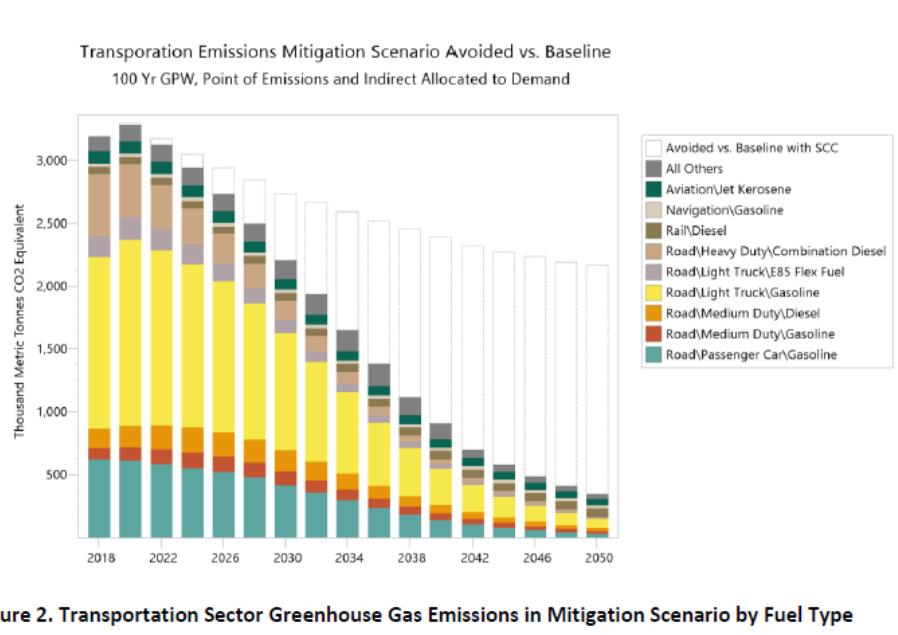
Example: Draft NY State Energy Plan
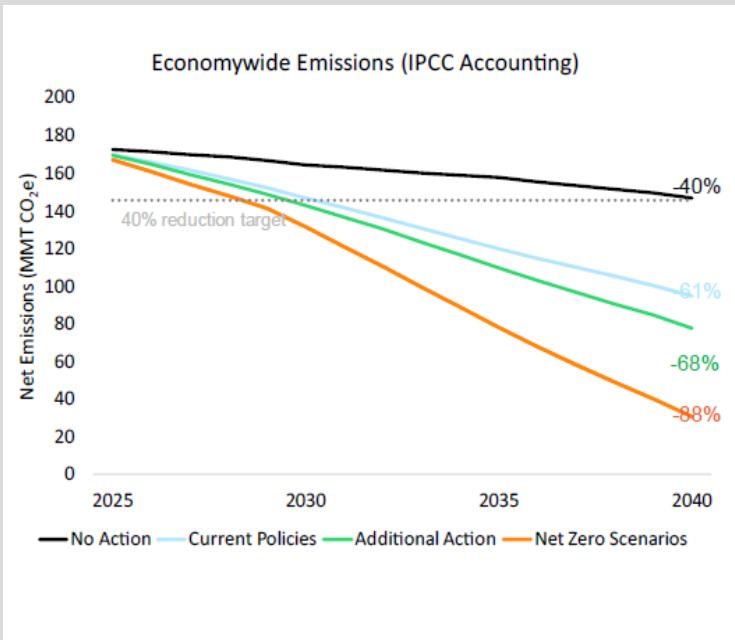
Story

This is the path we used to be on,

And we've done a lot to reduce emissions,
But we need to do a little more for 2030 goals,

Or much more to remain on track for net-zero.

Feature 2: Modeling Policy Scenarios

Example: North Carolina Clean Energy Plan

Table 4: Policy Scenarios Modeled for the Electricity Sector

Scenario Name	Description
Accelerate Fossil Retirement	All coal power plants retire by 2030 and the generation shifts to non-emitting sources
Expand REPS or Clean Technology Standard	Requires a certain percentage of a utility's retail electricity sales must come from non- or low-emitting resources, energy efficiency, or demand side measures.
Market-Based Carbon Reduction Program	NC establishes a carbon reduction program that is linked with similar programs in other states and sets an initial CO_2 budget that declines each year by 3.0%.
Market-Based Carbon + Clean Tech	A linked market-based carbon program in a combination with a clean energy technology standard.

Example: Maryland Climate Pollution Reduction Plan

2.3.1. ADDITIONAL MODELED MARYLAND-SPECIFIC POLICIES

Electricity Sector
- Clean Power Standard of 100% by 2035
- Regional Greenhouse Gas Initiative target of zero by 2035

Transportation Sector
- Advanced Clean Fleets
- Additional vehicle miles traveled reduction policies

Buildings Sector
- Zero-emission heating equipment standards
- Zero-emission construction standards
- Extended energy efficiency standards
- Clean Heat Standard

Industry and Other Sectors
- Fuel switching for cement and other industry
- Methane reductions with marginal abatement cost curves for gas, waste and agriculture

Economy-Wide
- Economy-wide cap and invest policy to achieve remaining emission reductions (with exemption for certain sectors)

Figure 2: **Maryland's statewide GHG emissions and sequestration trends**, historical and projected, from 2006 to 2050 based on current and new policies
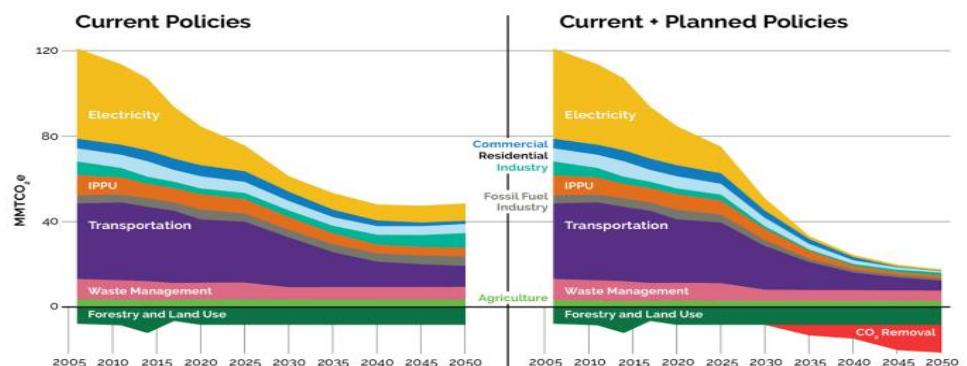
**Example:** Vermont Pathways Analysis Report

Figure 41. Mitigation Scenario Net Present Value Compared to Baseline - $6.4 Billion of Net Benefits through 2050.
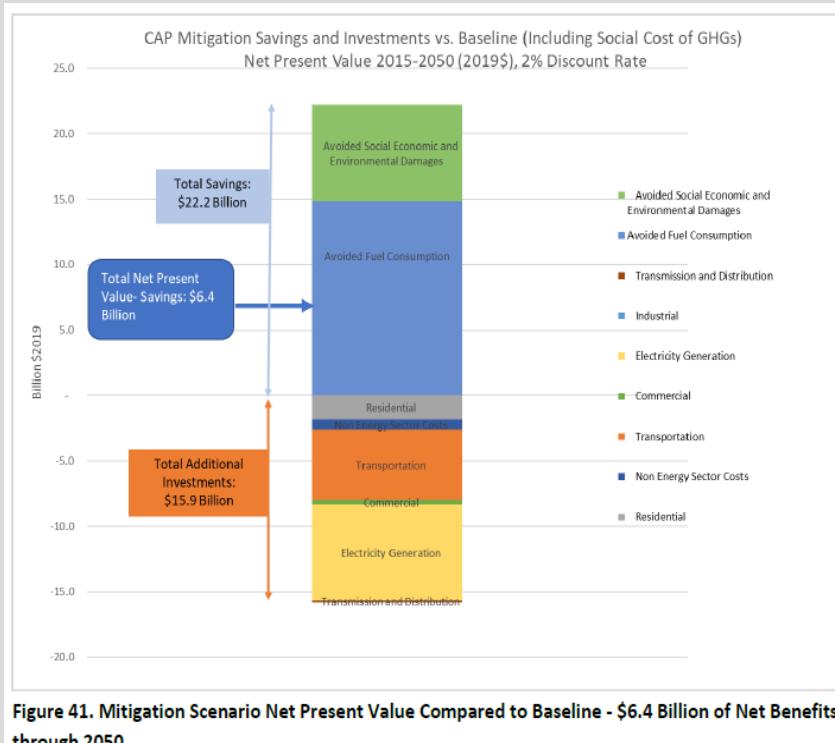
Example: Draft NY State Energy Plan Affordability Analysis
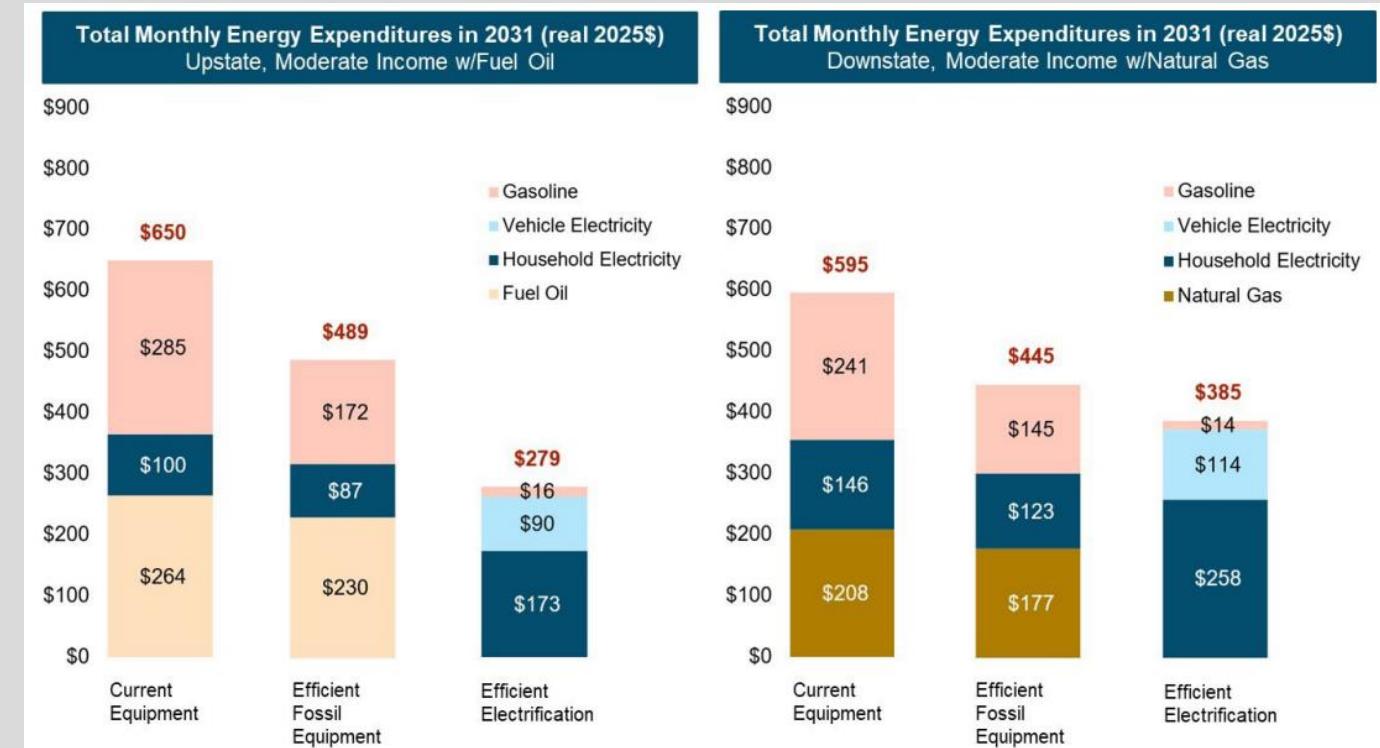
Demonstrates impact of energy choices on monthly energy costs for different customer profiles (upstate mod income vs. downstate mod income)

Feature 4: Uncertainty Analysis

Example: Colorado Greenhouse Gas Pollution Reduction Roadmap 2.0

Table 8. Sensitivity Analysis of Economy-wide Emissions in Baseline Scenario

| Year	Optimistic Scenario	Baseline Scenario	Pessimistic Scenario	State Target
2030	82.8	84.1	86.0	73.4
2050	64.1	66.0	71.1	0.0

Table 9. Sensitivity Analysis of Economy-wide Emissions in Near Term Action Scenario

Year	Optimistic Scenario	Near Term Action Scenario	Pessimistic Scenario	State Target
2030	75.7	76.9	79.9	73.4
2050	49.1	50.1	57.0	0.0

Example: California Climate Change Scoping Plan

Analysis of uncertainty pertaining to pace of renewable deployment

Figure J-1. California generation mix in 2030 under the Rhodium reference scenario and the delayed renewable capacity scenario

Legend: ■ Solar ■ Natural Gas ■ Hydro ■ Wind ■ Nuclear ■ Other

Rhodium reference scenario: Other 13%, Wind 8%, Hydro 19%, Natural Gas 16%, Solar 44%

Delayed renewable capacity: Other 9%, Nuclear 5%, Wind 8%, Hydro 19%, Natural Gas 29%, Solar 30%
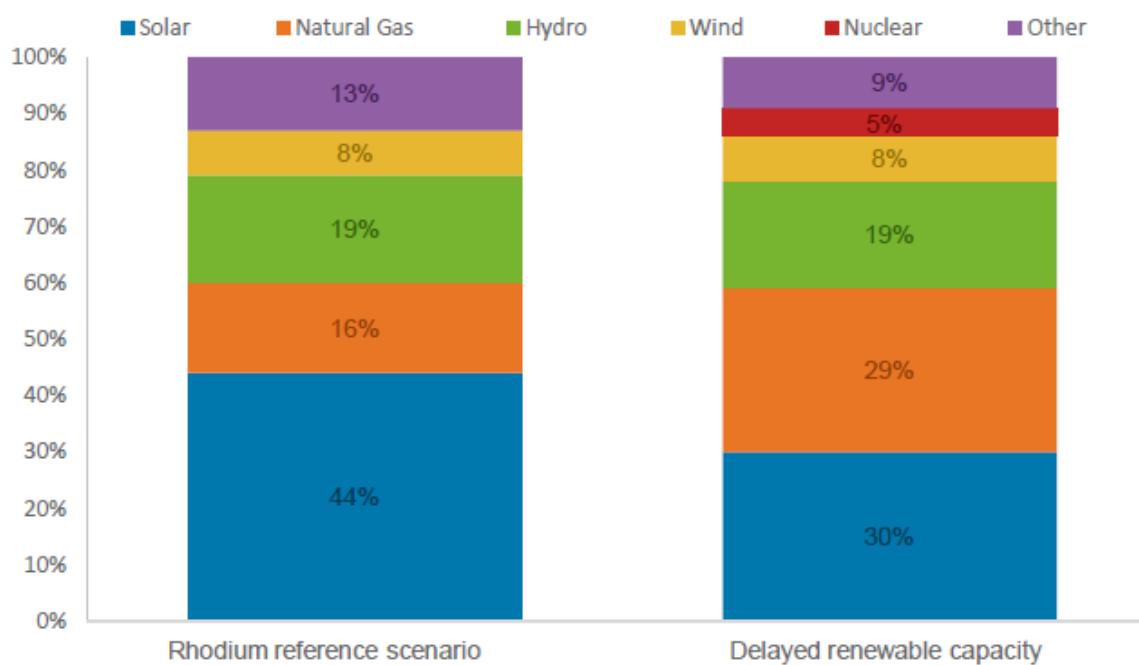
Questions & Discussion

Break (10 Minutes)

Decision-Making Framework

A way to organize what matters to the people of Massachusetts as we pursue our climate goals.

It will look like a rubric of priorities that will be woven into the modeling and policy design processes to ensure we are assessing the optimal pathway to 2035.

A Note on Priorities

There are many categories of "cross-cutting" concepts. We want to make one upfront distinction:

**Priorities are concepts that directly enhance human wellbeing**

Example: health
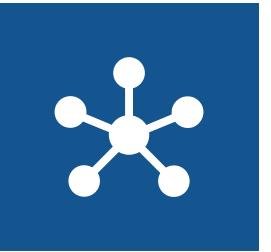
There are other topics that affect multiple sectors and improve effectiveness

Example: load management
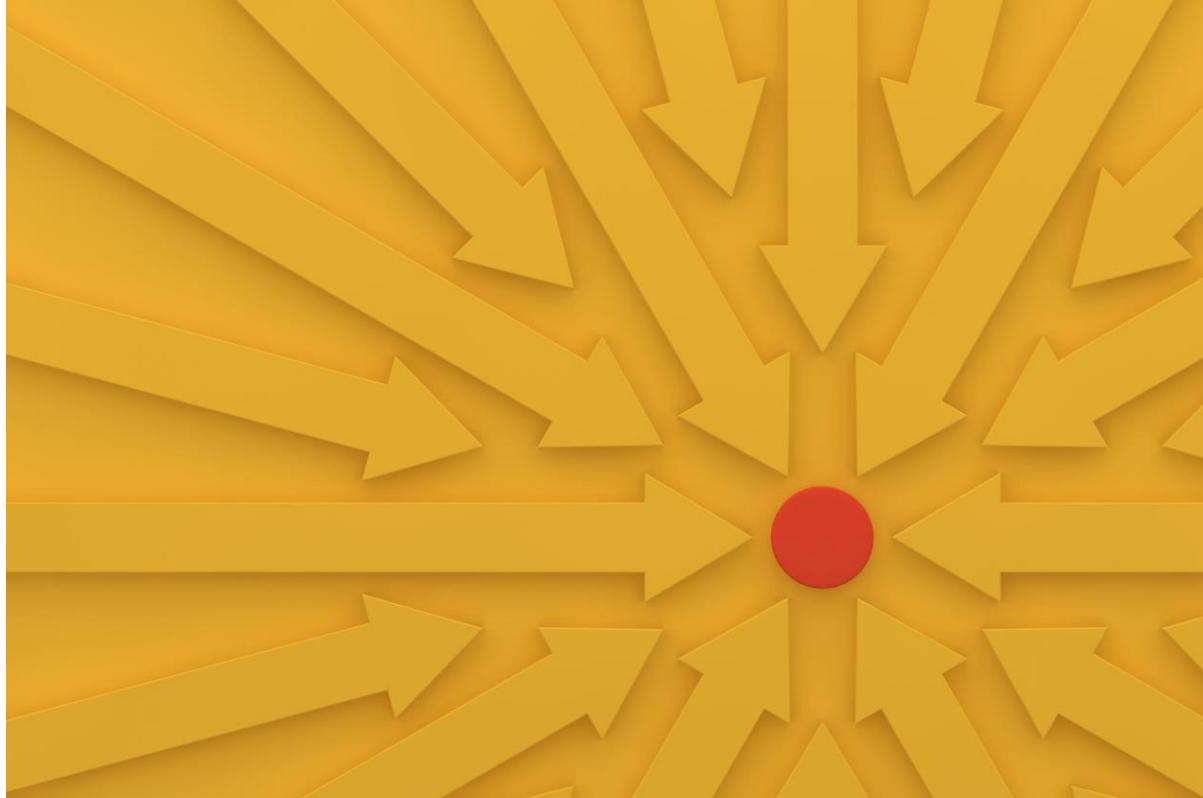
What priorities did we hear today in the first session?

✓ **Join a table with the priorities that most interest you.**

No more than 8 IAC members per table

✓ **Discuss: How would one experience and/or what is the effect of this priority being prioritized via climate policy?**

Jot down these ideas on sticky notes and add them to the wall by each priority.

Breakout

Breakout Group Recap

Next Steps

We are here.

...establishing priorities for Phase 2.

CECP Due date 1/1/28

2025	2026	2027

Priority Setting, Planning & Procurement

Policy Ideation, Modeling & Refinement

Plan Development & Publication

Phase 1

Phase 2

Phase 3

- Determining decision-making criteria used to choose optimal pathways
- Scoping the requirements for initial scenario modeling
- Establishing an engagement approach and stakeholder groups
- Procuring vendor support

- Working with internal and external stakeholders to discuss potential policies and pathways
- Modeling policies and pathways

- Converting chosen pathway into a plan (assigning roles, resources, etc.)

Are we missing a priority?

Think about how these priorities map onto your sector.

- **How does decarbonization advance each of these priorities in your sector?**

- **How would we know that a priority has been met in your sector?**

Please send us your thoughts (written memo/bullets fine) by January 30, 2026.

Public Comment

Closing