



Building Decarbonization Levers in Washington State

Getting to Zero Forum

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Agenda

- Shift Zero Overview
- Zero Carbon Trajectory in Washington
- Spectrum of Electrification Levers
- Electrification as an Outcome:
 - Washington State Energy Code Case Study
- Moving Toward “Decarbonization Uniform Methods”



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Shift Zero Overview

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Member Organizations

SEATTLE
2030
DISTRICT®

WASHINGTON
ENVIRONMENTAL
COUNCIL



Emerald Cities
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PH_{nw} Passive
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Northwest

NW Energy Coalition
for a clean and affordable energy future

**NORTHWEST
EcoBuilding
Guild**
ADVANCING A 100-YEAR PERSPECTIVE FOR THE BUILT ENVIRONMENT

Optimum Building Consultants, LLC

350 SEATTLE

350
SPOKANE

South Seattle
Climate Action
Network

A&R SOLAR



PAE

brien & company

PHIUS
Passive House Institute US

AIA
Seattle

2050
INSTITUTE

AIA
Washington Council

nk
ARCHITECTS

**Sustainable
Connections**

NWR
NORTHWEST
RENEWABLES

**Solar
Washington**

NEEC
NORTHWEST
ENERGY
EFFICIENCY
COUNCIL

[bundle] design studio

ECOTOPE

Climate Solutions

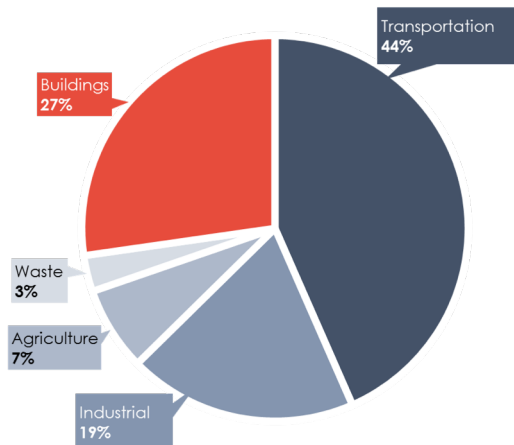


Zero Carbon Trajectory in Washington

Context for Washington

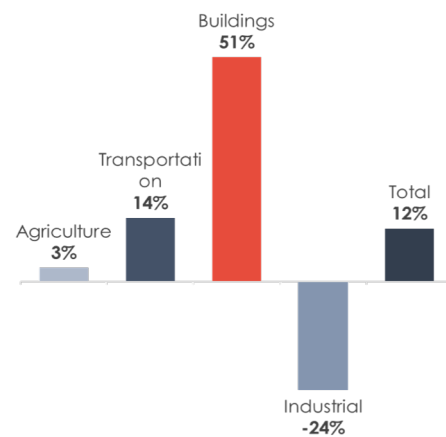
Progress?

Buildings are Washington's Second Largest Source of GHG Emissions



Buildings are the fastest growing source of GHG emissions in Washington:

Change in Washington Greenhouse Gas Emissions, 1990–2015



Source: Office of Gov. Inslee



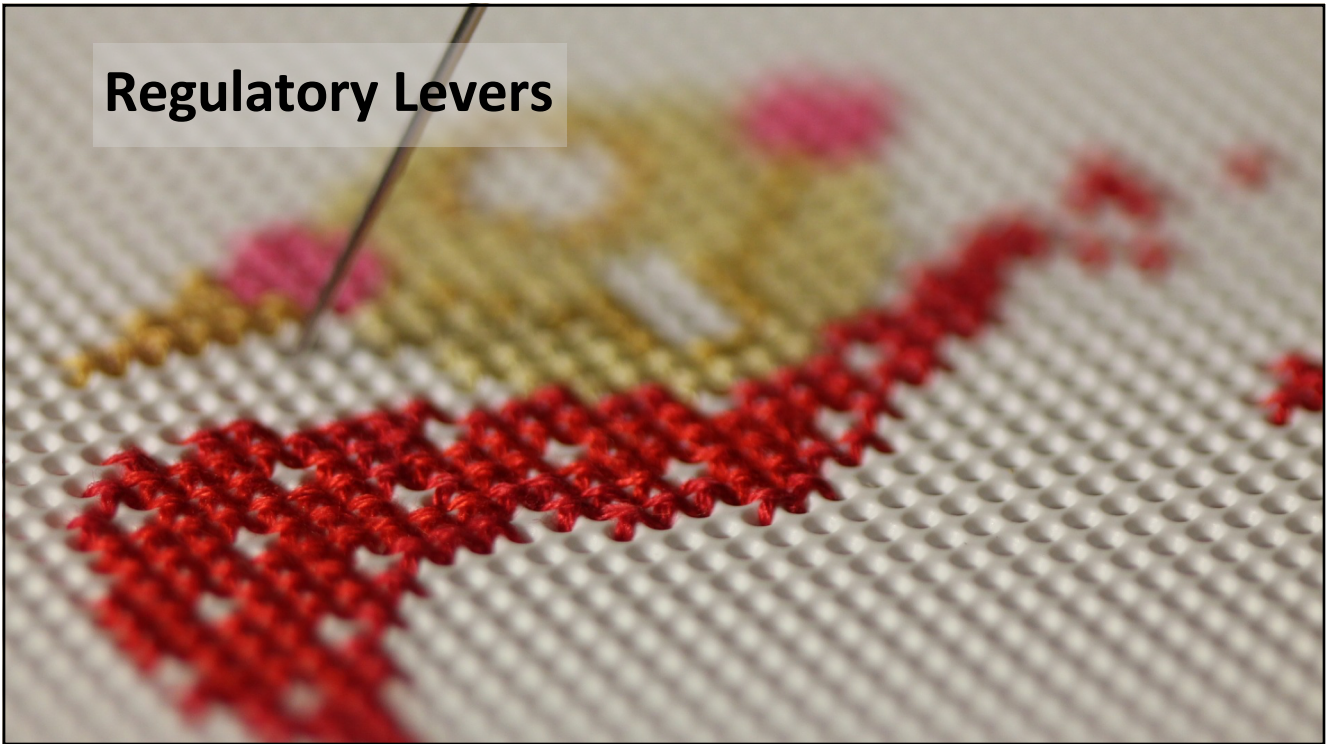
Spectrum of Decarbonization Levers



Legislative Levers

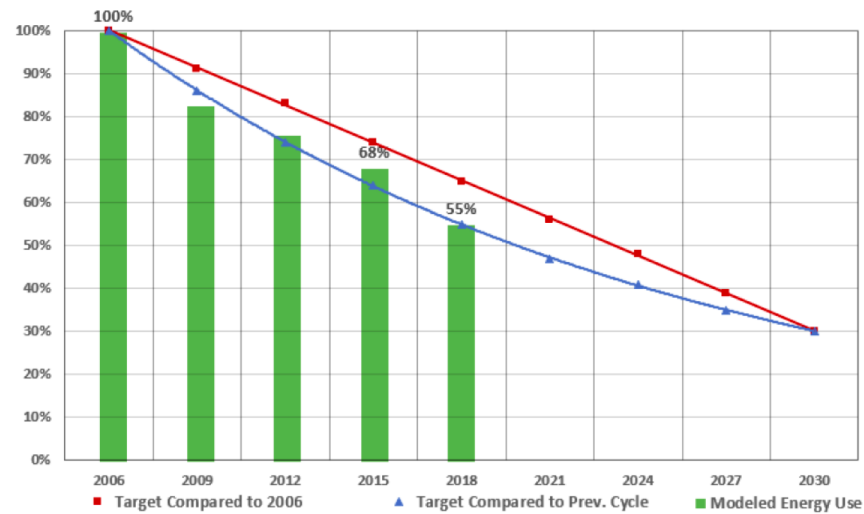


Regulatory Levers



Electrification as an Outcome: *Washington State Energy Code Case Study*

2031 Endpoint: Net-Zero Ready New Buildings

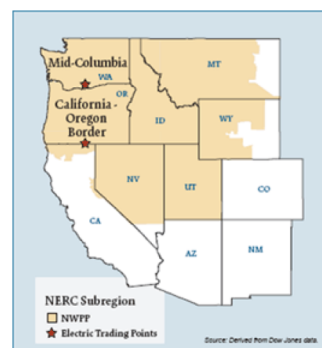
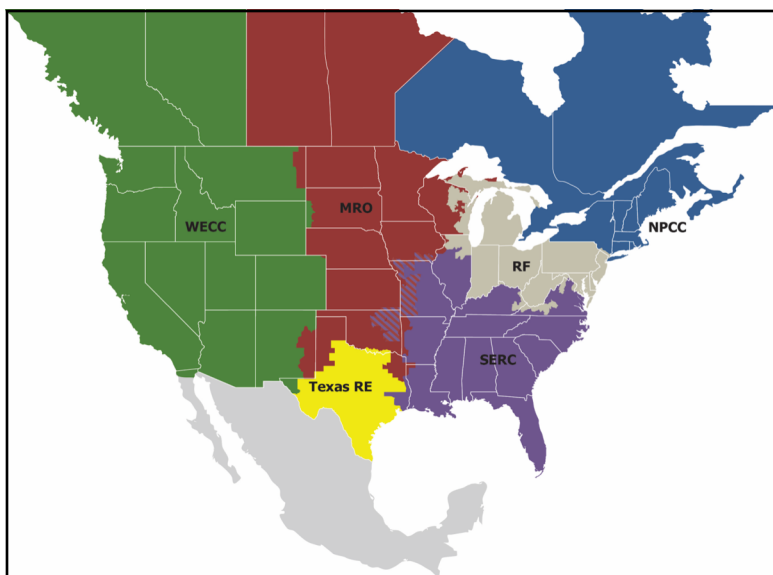


Shift to Carbon Accounting in Options Table

Units	2015	Proposed 2018
Small Dwelling Unit	1.5	4.5
Medium Dwelling Unit	3.5	6
Large Dwelling Unit	4.5	7
Multifamily	2.5	4.5

Carbon Credits: Fuel Equalization + Options

Starting Heating System	Single-Family Credits	Low-Rise Multifamily Credits
Gas Furnace	0	0
Heat Pump	1	N/A
Electric Resistance Only	-1	-1
Electric Resistance & DHP	.5	N/A
All Other	-1	-.5

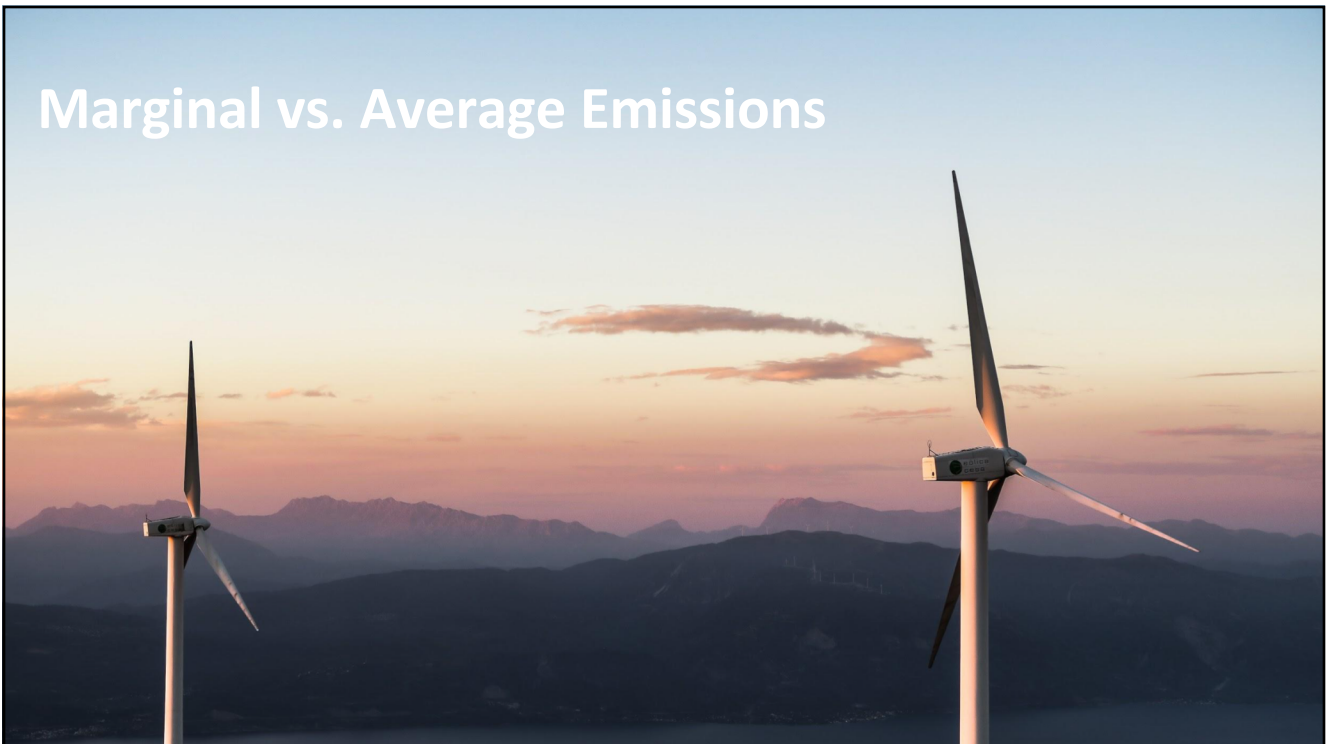


The geography of an emissions rate....

Marginal vs. Average Emissions



Marginal vs. Average Emissions



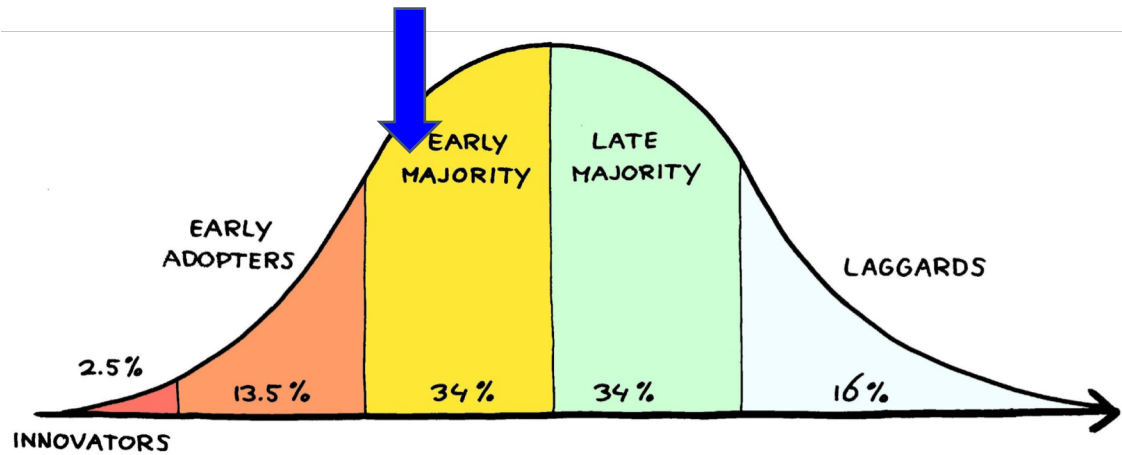
Paradigm Dependent Baselines



Market & Equity Impacts



Coordinating Mandates and Market Development to Accelerate Electrification



Credit: Jurgen Appelo



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Moving Toward “Decarbonization Uniform Methods”

New goals, new context,
new methods...



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Questions?

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Thank you!

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