



**MINISTRY OF BUSINESS,
INNOVATION & EMPLOYMENT**
HĪKINA WHAKATUTUKI

Building for Climate Change

Transforming New Zealand's building performance settings to reduce emissions and improve climate resilience

February 2021



Welcome

Agenda

- Context for the Building for Climate Change programme
- Frameworks for Change
- Transforming Operational Efficiency
- Reducing whole of life embodied carbon

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The problem

If New Zealand is to reach its goal of net Carbon Zero by 2050, the Building and Construction sector must play a major part in this, and changes must be made.



The Building for Climate Change programme

Transforming the Sector

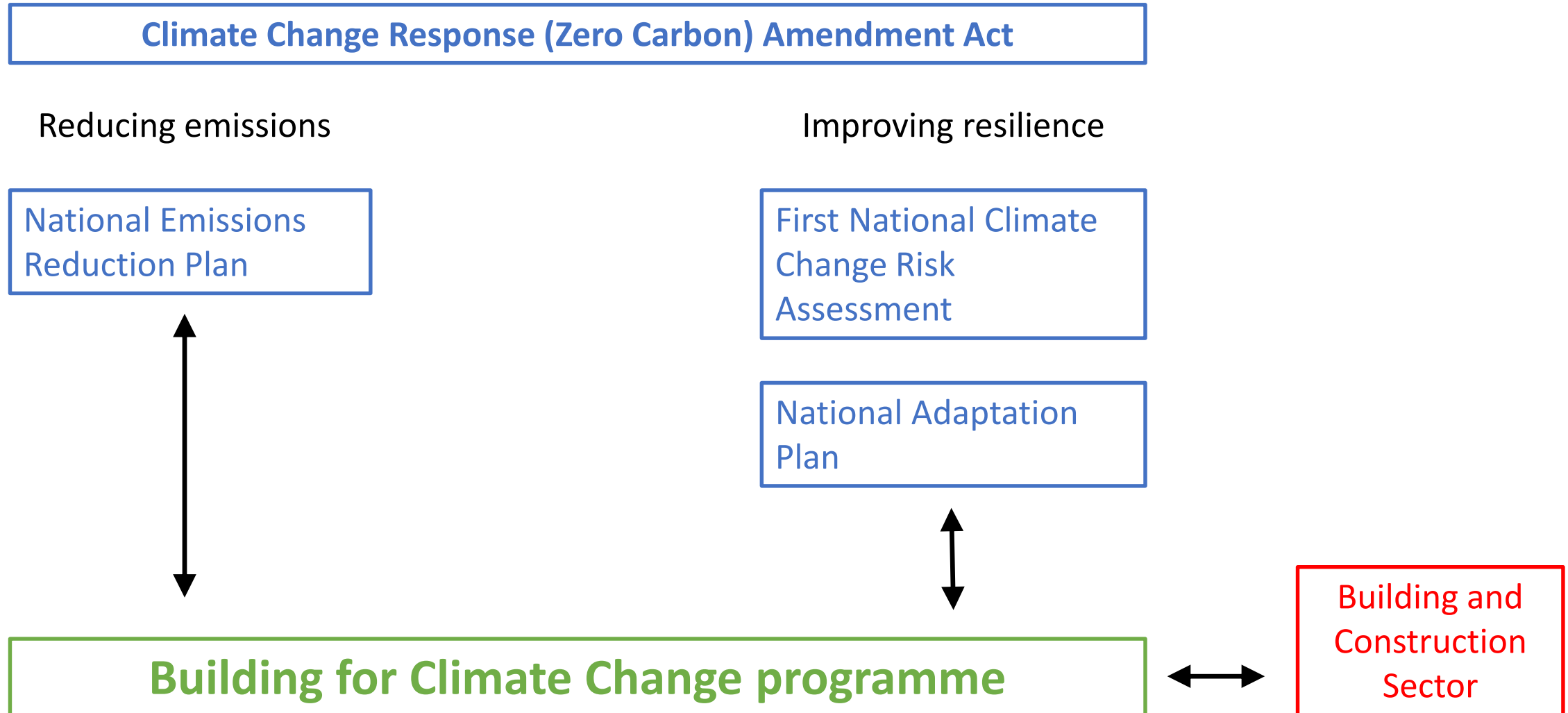


Reducing emissions



Improving resilience

Whole of Government Climate Change programme



Frameworks for change



Framework 1: Transforming operational efficiency

Objectives

- Reduce operational emissions
- Reduce water use
- Improve people's health and wellbeing



Framework 1: Transforming operational efficiency

Current State

- Only a specialist area
- Regulation not robust
- Lack of a system focus
- Slow-growing awareness

Vision for 2035

- Energy efficiency, water use, emissions are all core considerations when building
- New regulations, including emissions cap
- Buildings are healthier and wellbeing has improved

Framework 1: Transforming operational efficiency

Our approach

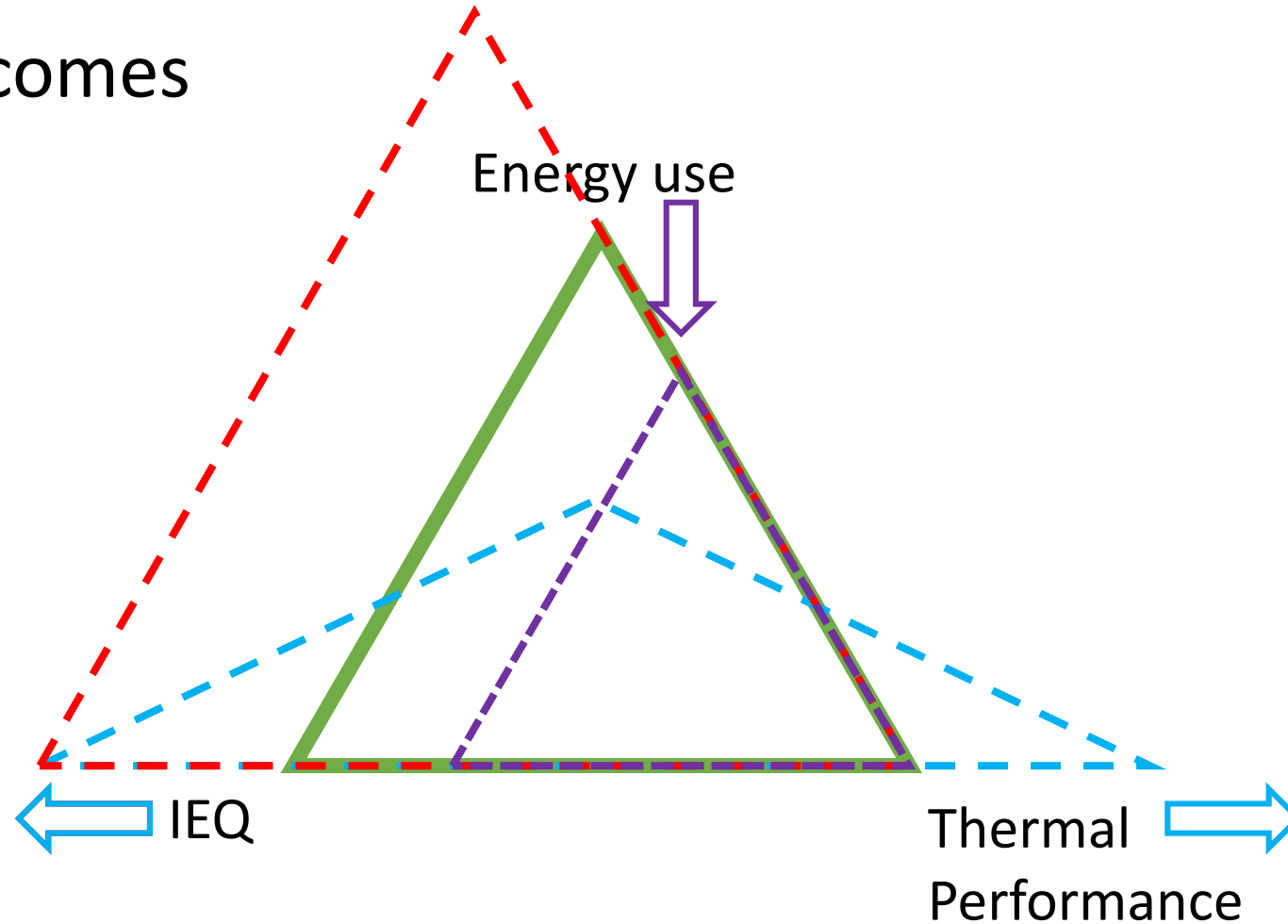
- Mandatory Operational Emissions Cap setting out the total allowable annual emissions per square meter per annum for all new buildings.
 - Mandatory Water Use Cap setting out the total allowable potable water use per square meter per annum for all new buildings.
 - Defined Indoor Environmental Quality parameters for all new buildings to comply with.
 - Caps tighten in a series of steps to final requirements in 2035
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Framework 1: Transforming operational efficiency

Step 1	Step 2	Step 3	Step 4
Operational Efficiency Requirements Launched	Initial Operational Efficiency Requirements come into force	Intermediate Operational Efficiency Requirements come into force	Final Operational Efficiency Requirements come into force
All new buildings must report against operational efficiency requirements at consent and code compliance stages.	All new buildings must meet initial operational efficiency requirements at consent and code compliance stages.	All new buildings must meet intermediate operational efficiency requirements at consent and code compliance stages.	All new buildings must meet final operational efficiency requirements at consent and code compliance stages.
	Public sector buildings must meet intermediate operational efficiency requirements at consent and code compliance stages.	Public sector buildings must meet final operational efficiency requirements at consent and code compliance stages.	

Framework 1: Transforming operational efficiency

Balancing Outcomes





Framework 1: Transforming operational efficiency

Operational Emissions Cap made up of 3 components

1. Fossil Fuel Combustion – emissions cap
 2. Electricity Use
 - Thermal Performance – demand EUI cap
 - Services Efficiency – delivered EUI cap
 - Plug Loads – delivered EUI cap for large buildings
 - On-site Renewable Generation and Storage – not required within framework
 3. Water Use – potable water use cap
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Framework 1: Transforming operational efficiency

	Initial Cap	Intermediate Cap	Final Cap
Operational Emissions Cap CO ₂ -e/(m ² .a) ¹²	The cap will be a reporting mechanism for the total of the operational emissions from the three components		
Fossil Fuel combustion emissions ¹³ CO ₂ -e/(m ² .a)	18	9	0
Electricity Use kWh/(m ² .a) ¹⁴	180	90	45
Thermal performance (demand) kWh/(m ² .a)	60	30	15
Services efficiency (delivered) kWh/(m ² .a)	60	30	15
Water use l/p/d ¹⁵	145	110	75

Framework 2: Reducing whole of life embodied carbon

Objectives

- Getting the most out of buildings
- Increase building material efficiency
- Reduce the carbon intensity of materials used



Framework 2: Reducing whole of life embodied carbon

Current State

- Immature understanding of embodied carbon in buildings
- No regulations or incentives to quantify or reduce
- Growing interest, multiple tools and methodologies available

Vision for 2050

- Good understanding of embodied carbon in buildings,
- Embodied emissions significantly lower than today
- Tools to account for and quantify embodied emissions are widely used

Framework 2: Reducing whole of life embodied carbon

Our approach

- Whole-of-life embodied carbon considerations will become mandatory for buildings in New Zealand
 - Freedom of choice in identifying how to best reduce embodied carbon emissions
 - Time to upskill during initial reporting stage, then caps introduced
 - Government leading the way with public sector pilot projects demonstrating how to comply with requirements
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Framework Methodology

Small vs Large

- Small building: 3 storeys or under *and* 300sqm or less, regardless of classification
 - MBIE provided tool(s) for modelling/calculating both Operational Efficiency and Whole of Life Embodied Carbon
 - MBIE provided templates for reporting
- Large building: over 3 storeys *or* over 300sqm, regardless of classification
 - No prescribed tool but will need to meet MBIE requirements (eg could require ASHRAE 140 compliant) and use MBIE specified methodology/parameters
 - MBIE provided templates for reporting



Consultation results (October 2020)

- Over 350 submissions, including survey responses
 - Around 190 bespoke written submissions
 - More than 90% agree action is needed to reduce emissions
 - Summary of submissions available soon
 - Analysis will help us form policy proposals
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Important points

- We **ARE**:
 - establishing new building performance settings for efficiency & carbon
 - planning to set mandatory caps for emissions: operational and embodied
 - encouraging innovation
- We **ARE NOT**:
 - instructing the sector on which materials or products to use
 - favouring one material, product, or house type over another

What's coming up

April and
May 2021

- Consultation on the first changes to the Building Code

May 2021

- Consultation on the updated frameworks

November
2021

- First changes to the Building Code come into effect

What else is happening

This will be a landmark year for climate change policy:

- Carbon Neutral Government Programme underway
- First emissions budgets being developed by the CCC
- Final Emissions Reduction Plan published by the end of the year



How you can get involved

- Register to receive updates on the website (mbie.govt.nz/bfcc)
 - Follow MBIE on LinkedIn
 - Have your say in the public consultation processes
 - Participate in targeted consultation, webinars, presentations and other opportunities
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Thank you

More information is available at: [MBIE.govt.nz/BfCC](https://mbie.govt.nz/BfCC)

Or email us: BfCC@MBIE.govt.nz