Energy Management to Sustainability

Kirk Archibald

Energy Efficiency and Sustainability Manager, Community Facilities

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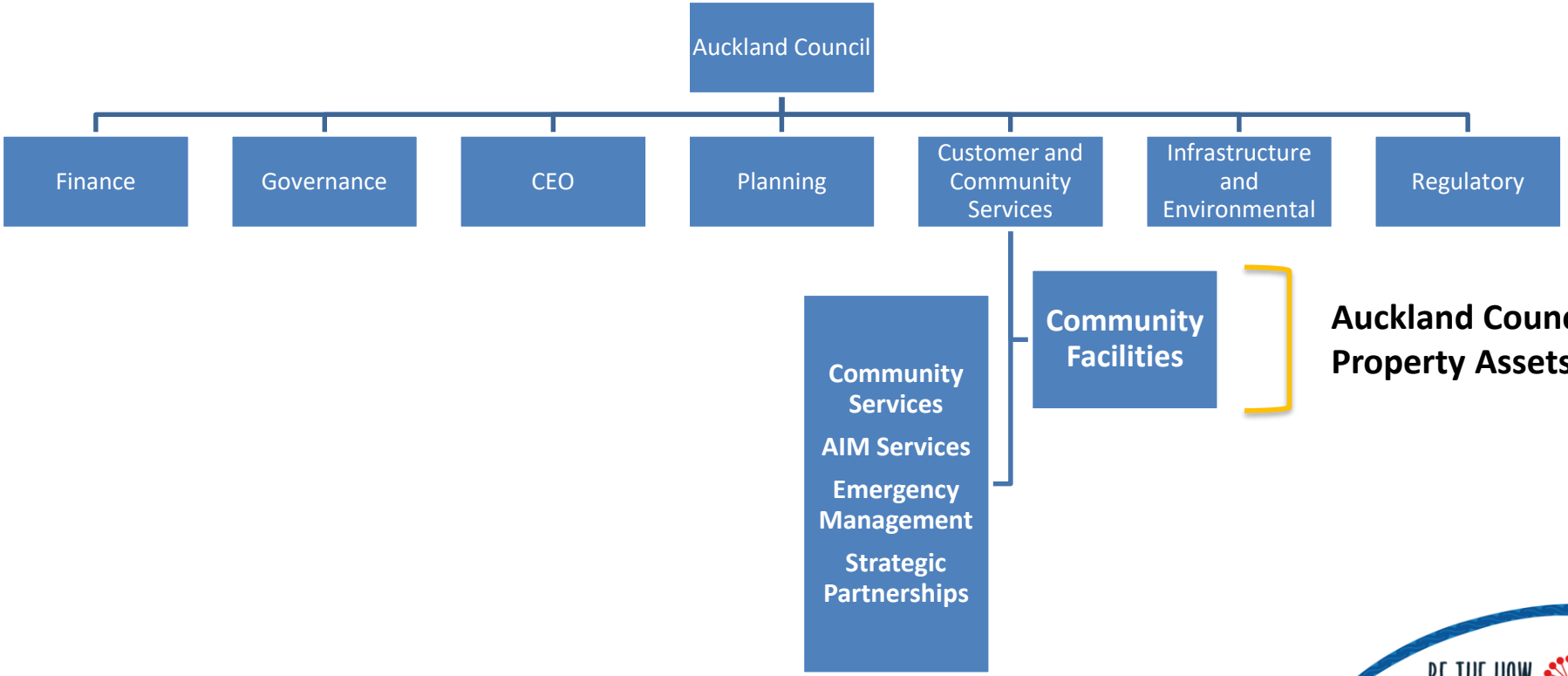
Auckland Council Family

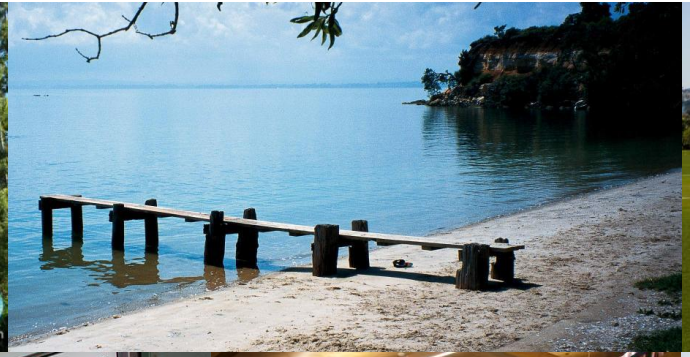
Auckland Council



BE THE HOW.
WHAKAMAUA KIA TINA!

Community Facilities

- **$11 billion in property assets**



Strategy – GHG Emissions and Climate Change

Auckland Plan

- Climate change a key Challenge to Auckland

C40 CITIES
CLIMATE LEADERSHIP GROUP

C40 Cities

- Deadline 2020
- Emissions peak 2020

Auckland Climate Action Framework

- Adaptation and Mitigation plan for Auckland Region

Environment & Community Committee

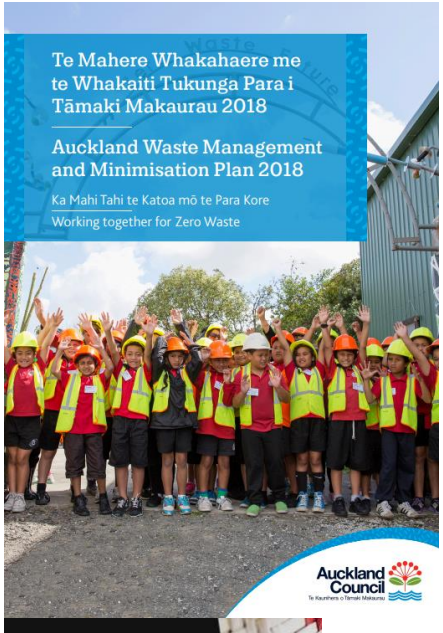
- Commitment to less than 1.5°warming
- C40 Deadline 2020
- Climate Emergency

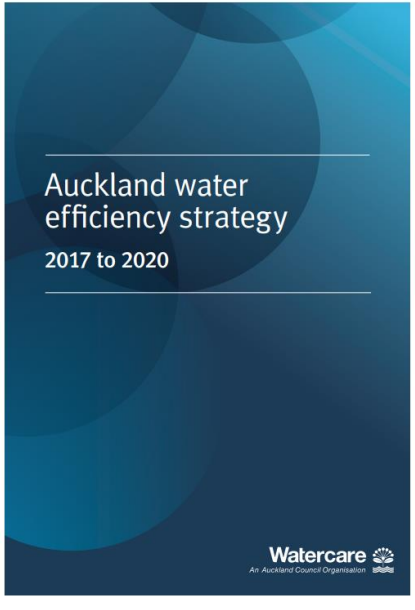
CLIMATE LEADERS COALITION
ON A MISSION TO REDUCE EMISSIONS IN NEW ZEALAND

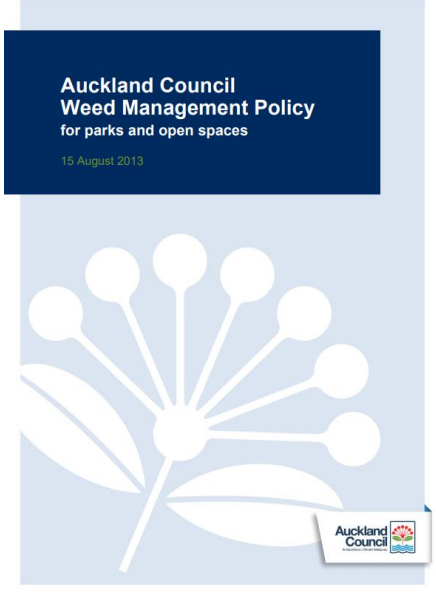
Climate Leaders Coalition

- Commitment to less than 2°warming
- Science Based Targets

Other Strategic Drivers







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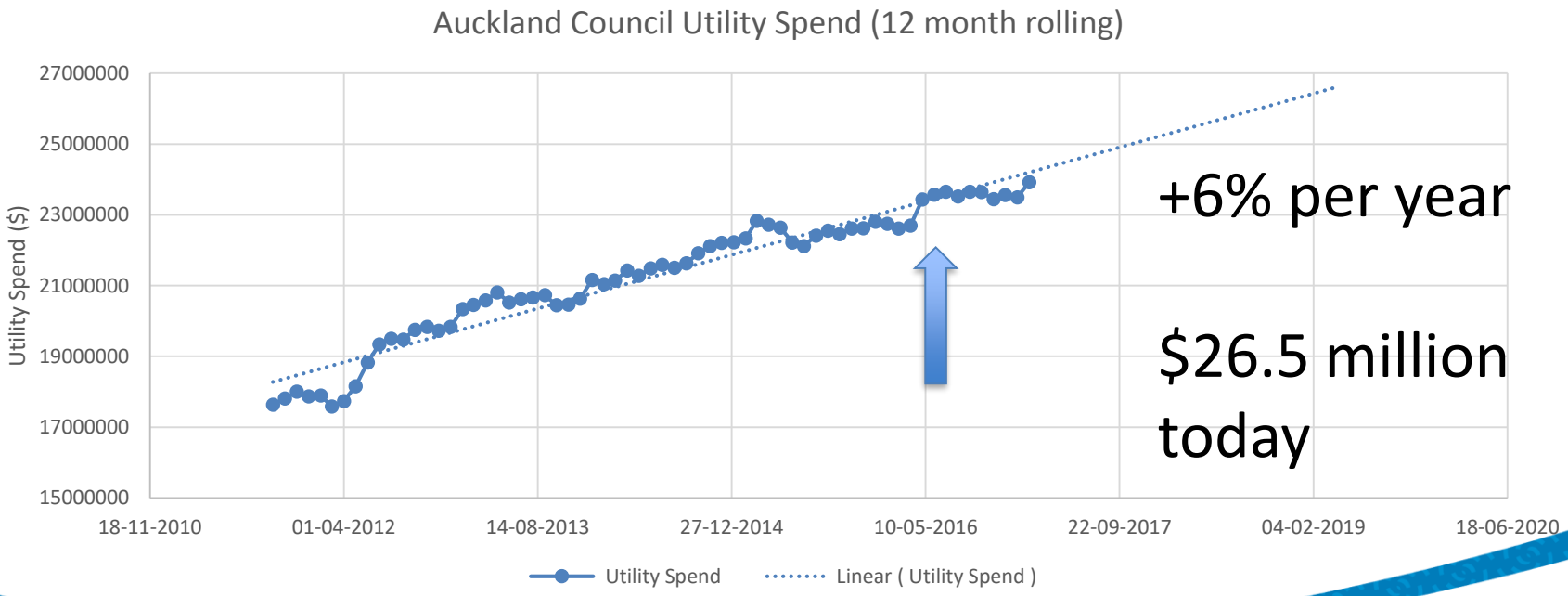
Our Energy Management Journey - Background



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Energy Management (&water)

4200 Accounts

Utility Management System

SAP

meridian

genesis ENERGY

contact

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Energy Management (&water)

- 100 Irrigation and drinking fountain accounts charged wastewater
- 265 Accounts not registering consumption
- 425 Accounts that relate to tenants or other organisations
- 164 meters that can't be accessed

$1.8 million in potential savings

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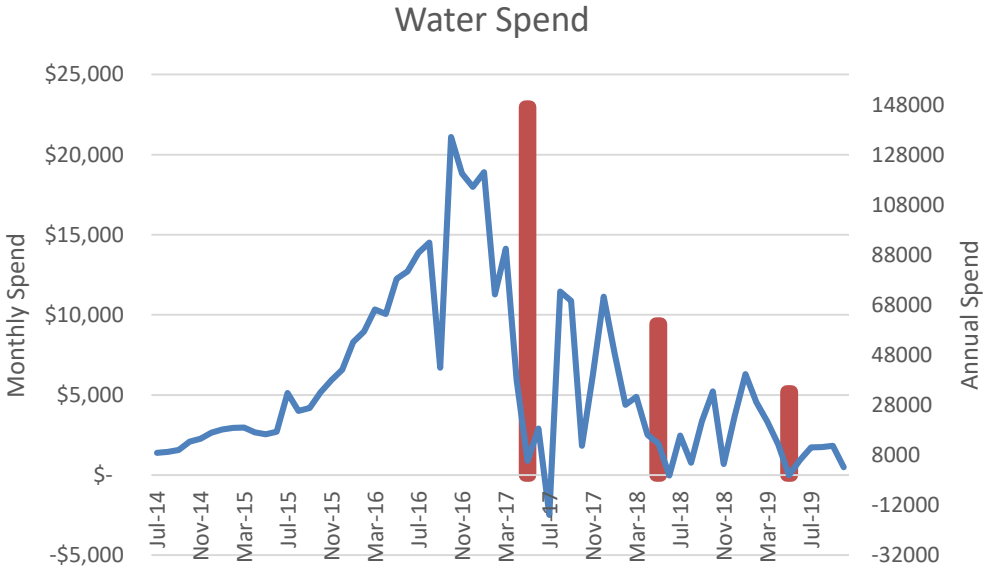
Energy Management (&water)



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Shift to Energy Efficiency

- Agreement with EECA
- 29 Projects - $1.5 million $350,000 per year saving

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Irrigation and Wastewater

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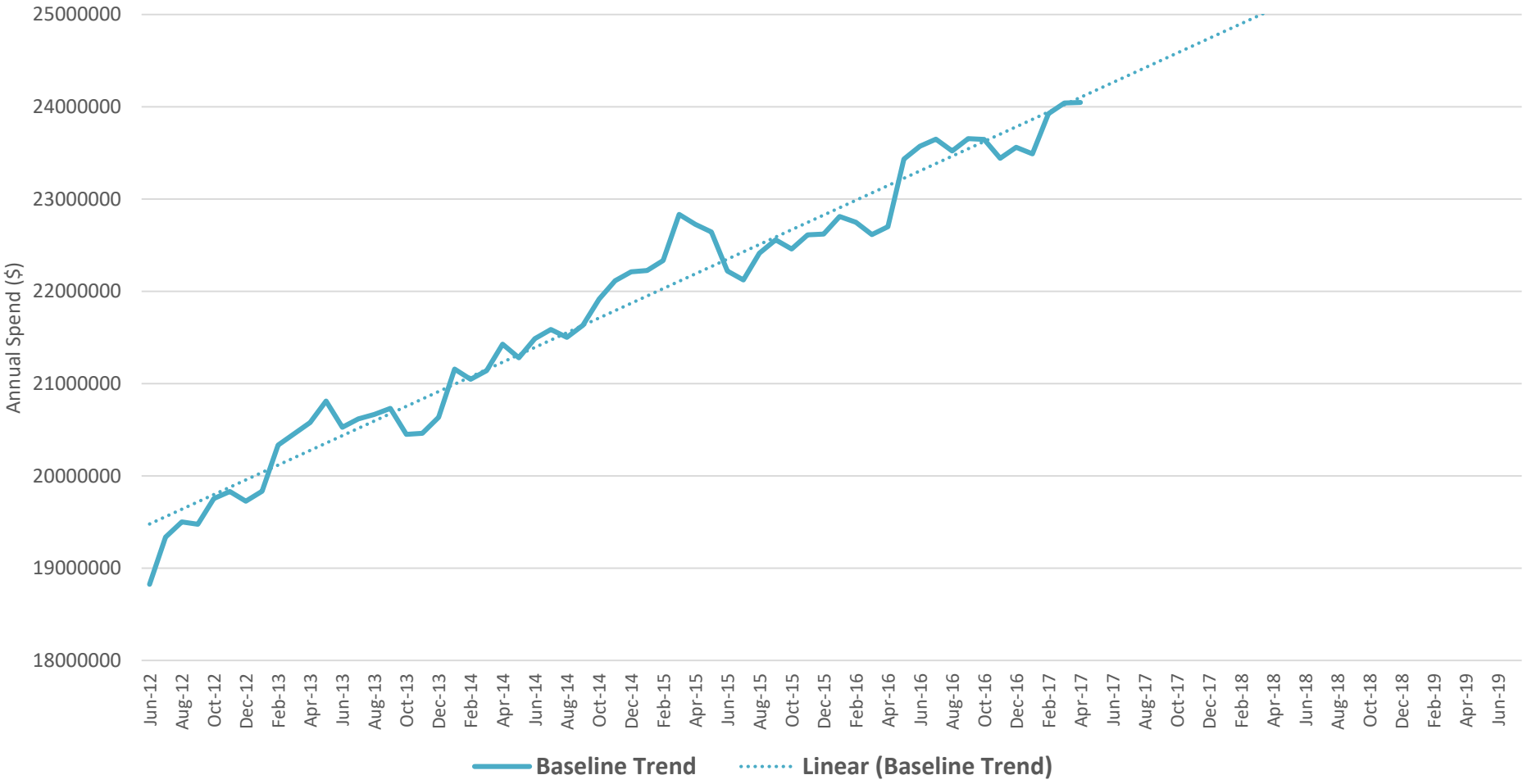
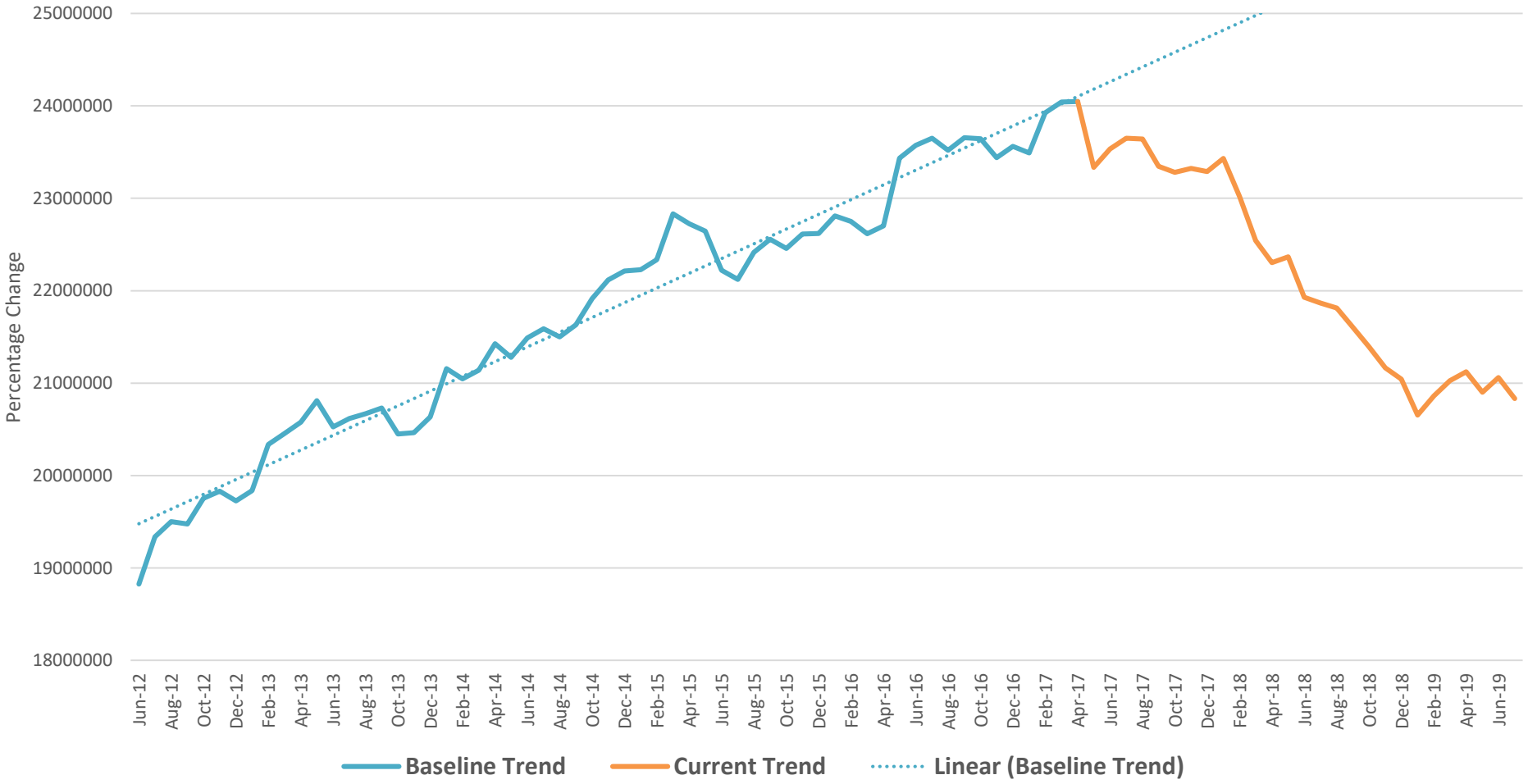
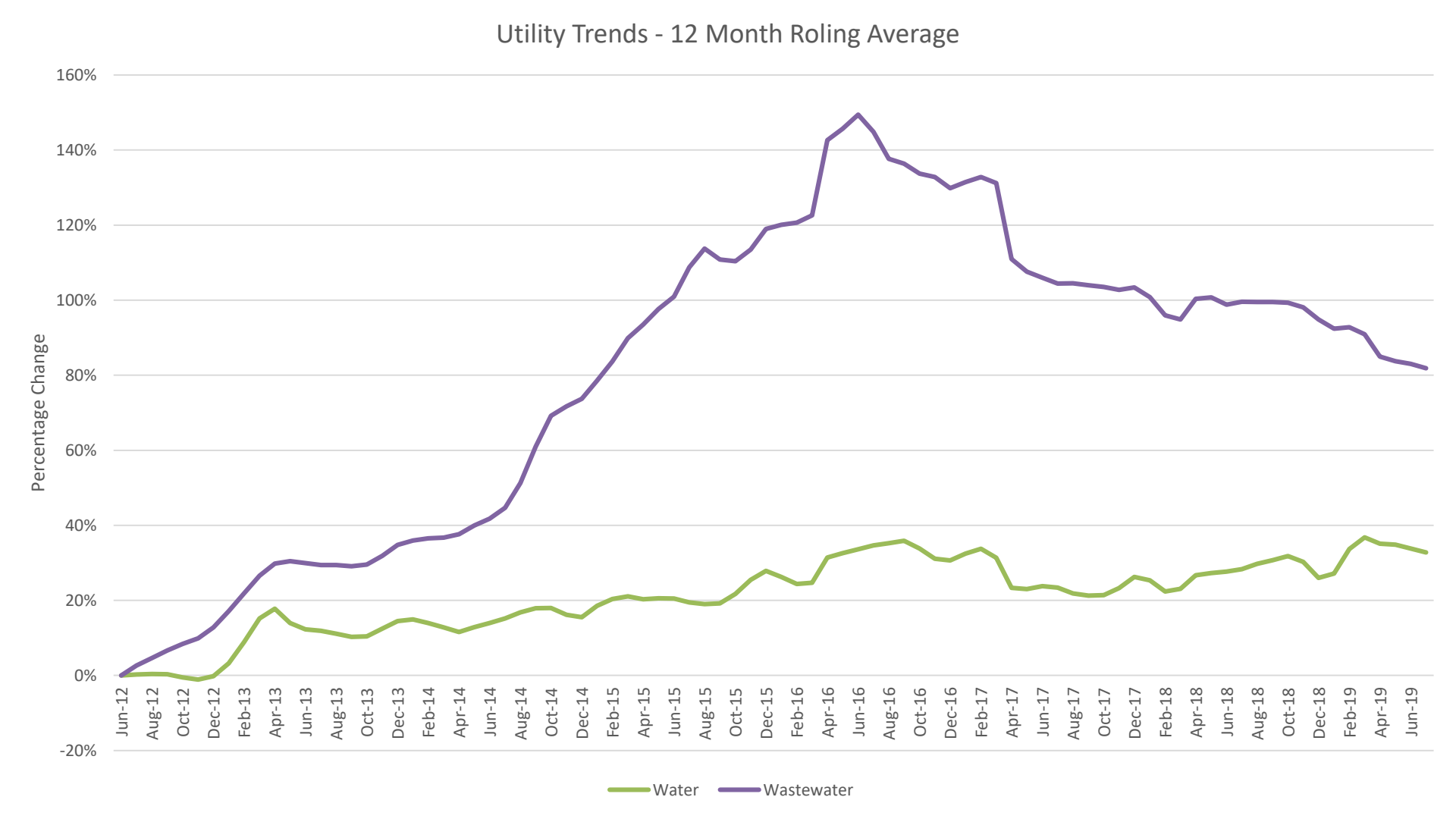
Utility Trends - 12 Month Roling Average



Utility Trends - 12 Month Roling Average




Utility Trends - 12 Month Roling Average
160%
140%
120%
100%
80%
60%
40%
20%
0%
-20%
Percentage Change
Jun-12
Aug-12
Oct-12
Dec-12
Feb-13
Apr-13
Jun-13
Aug-13
Oct-13
Dec-13
Feb-14
Apr-14
Jun-14
Aug-14
Oct-14
Dec-14
Feb-15
Apr-15
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Oct-17
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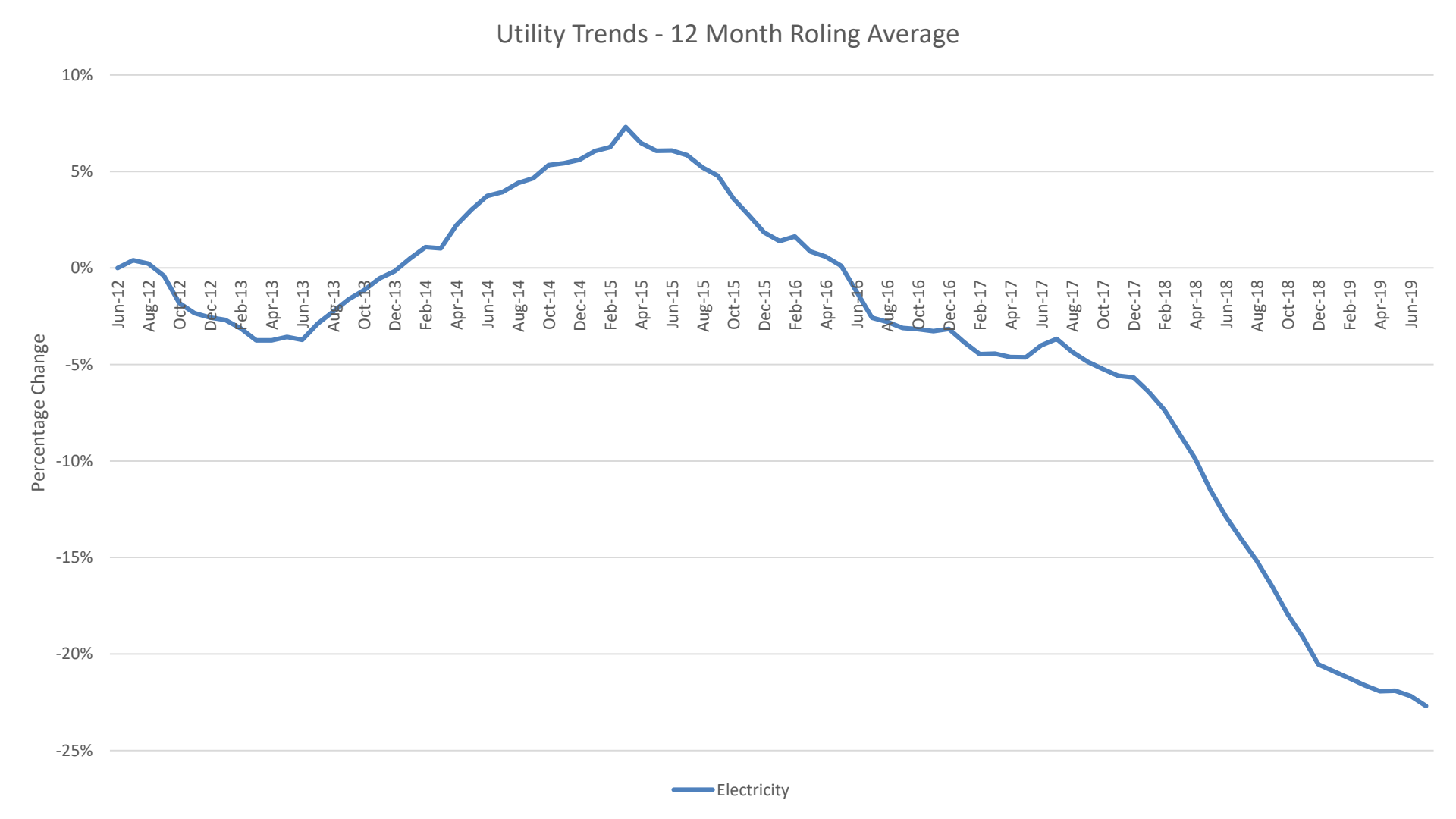
Feb-18
Apr-18
Jun-18
Aug-18
Oct-18
Dec-18
Feb-19
Apr-19
Jun-19
Water
Wastewater


Utility Trends - 12 Month Roling Average
10%
5%
0%
-5%
-10%
-15%
-20%
-25%
Percentage Change
Jun-12
Aug-12
Oct-12
Dec-12
Feb-13
Apr-13
Jun-13
Aug-13
Oct-13
Dec-13
Feb-14
Apr-14
Jun-14
Aug-14
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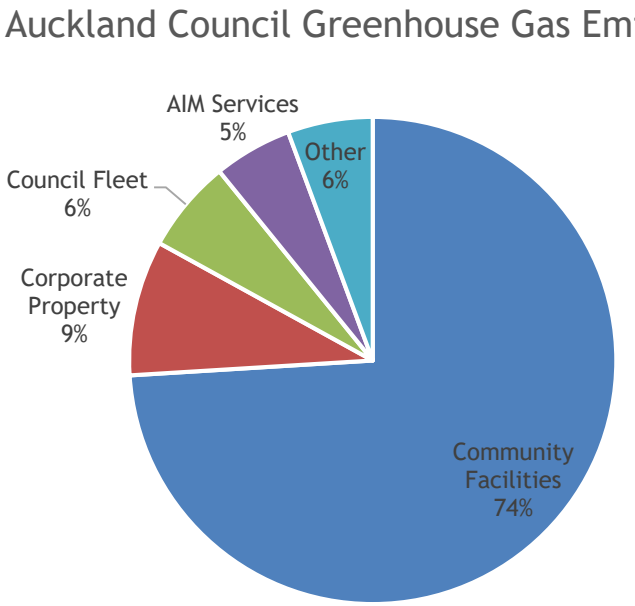
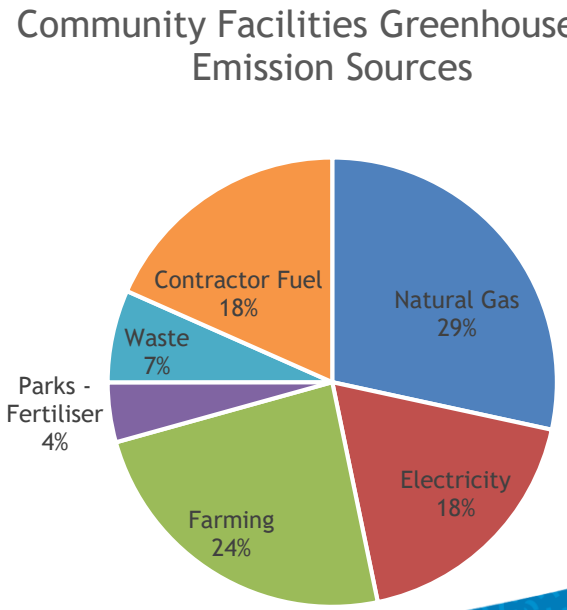
Feb-18
Apr-18
Jun-18
Aug-18
Oct-18
Dec-18
Feb-19
Apr-19
Jun-19
Electricity

Challenges

- Learning while doing
- GHG Targets absolute reductions while asset base is growing
    - Currently achieving this
- Systemic issues that need to be resolved first

Next steps – Zero Carbon





- ~35,000 tonnes total

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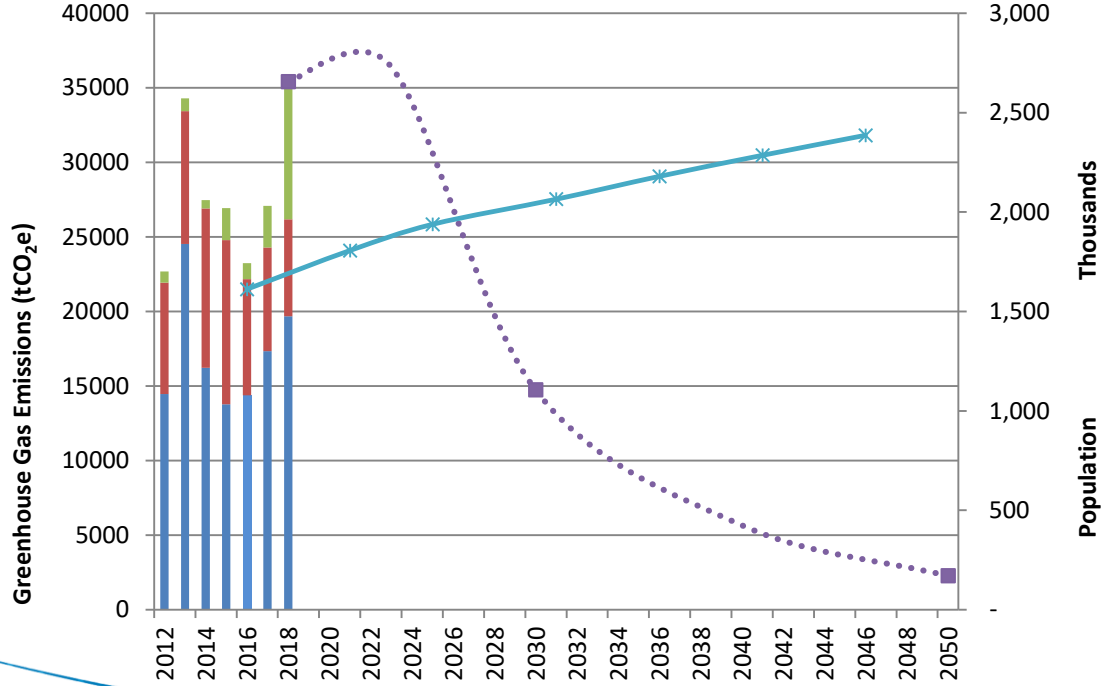
Emissions Reduction Pathway and Targets



Key Action Area	2018	2050
Buildings	15372	-83%
Farms & Open Space	8639	-55%
Transport	4669	-75%
Contractors and Suppliers	864	-90%
Planting and Carbon Removals (tonnes)	-	-5657

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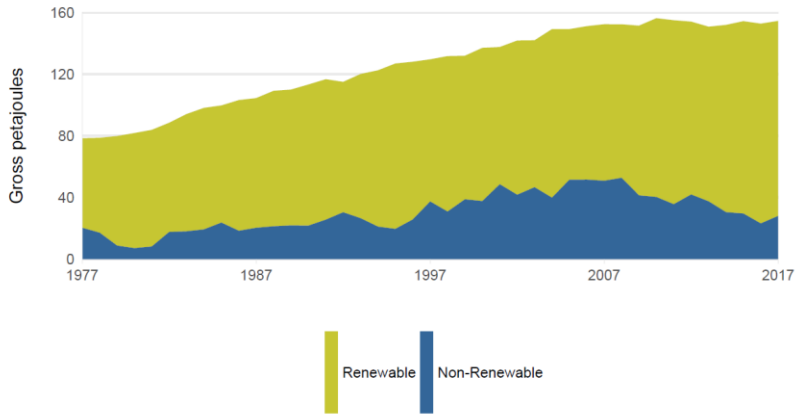
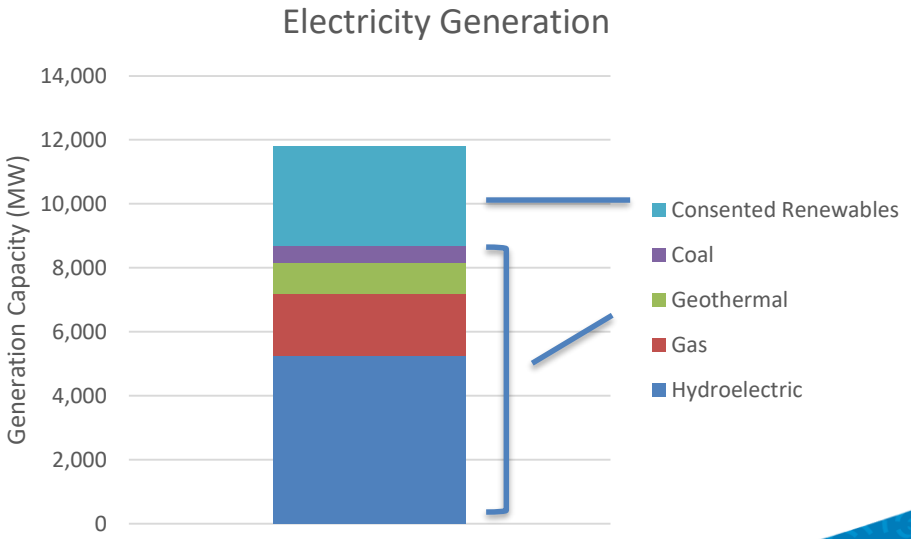
Emission Reduction Plan - Context

Figure 32: Total Generation by Renewables and Non-Renewables





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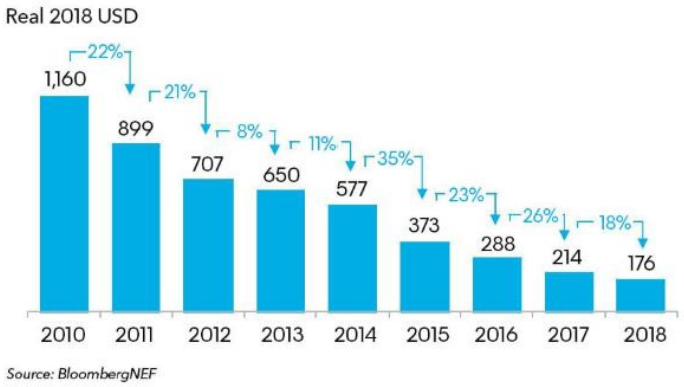
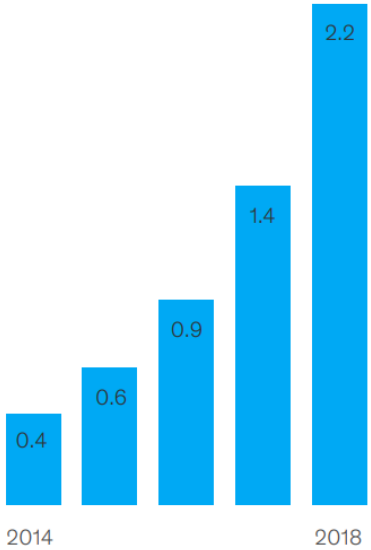
Emission Reduction Plan - Context

Volume weighted average lithium-ion pack price

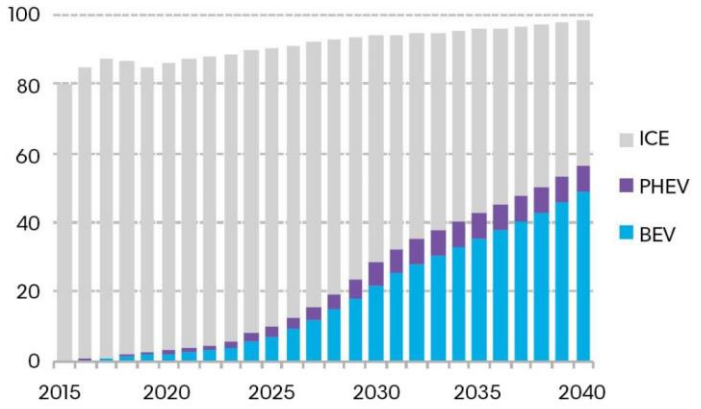


Source: BloombergNEF

EV-penetration rate, %



Global long-term passenger vehicle sales by drivetrain



Source: BloombergNEF

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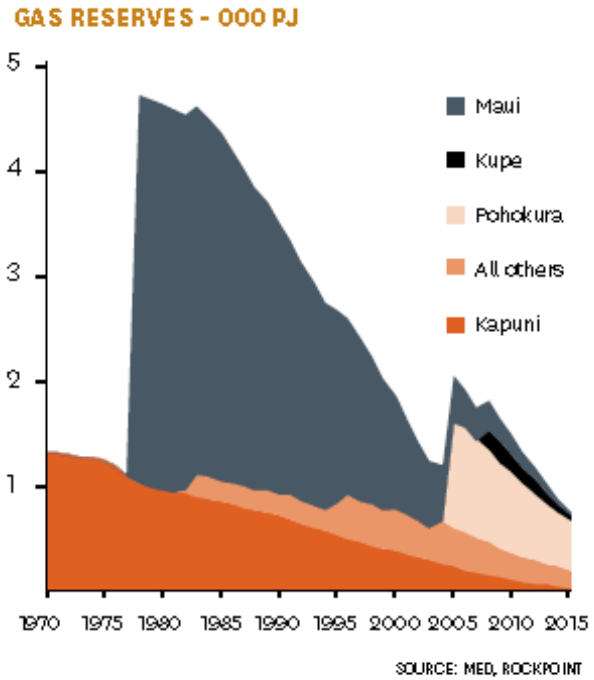
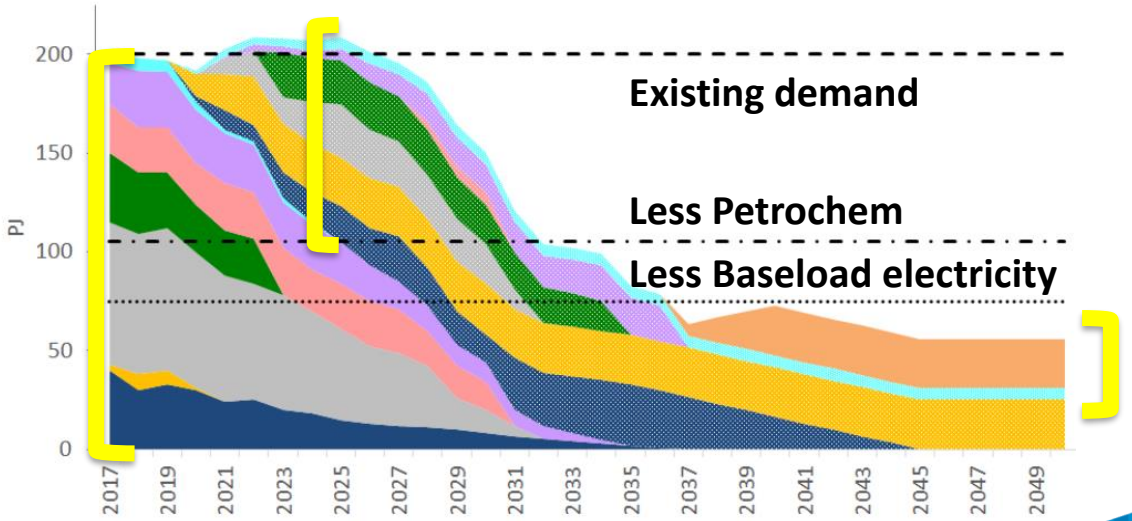
Price Outlook





Concept Consulting & PEPANZ -Forecasting NZ's gas sector

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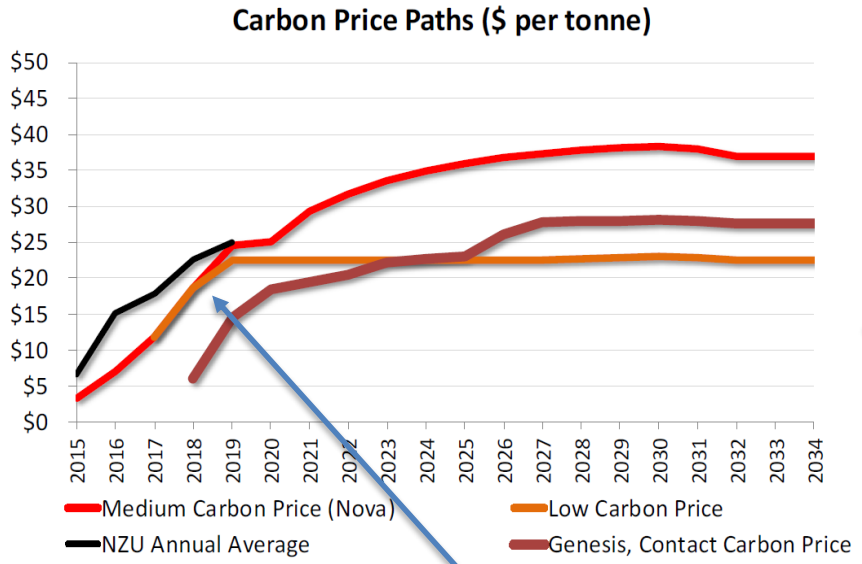
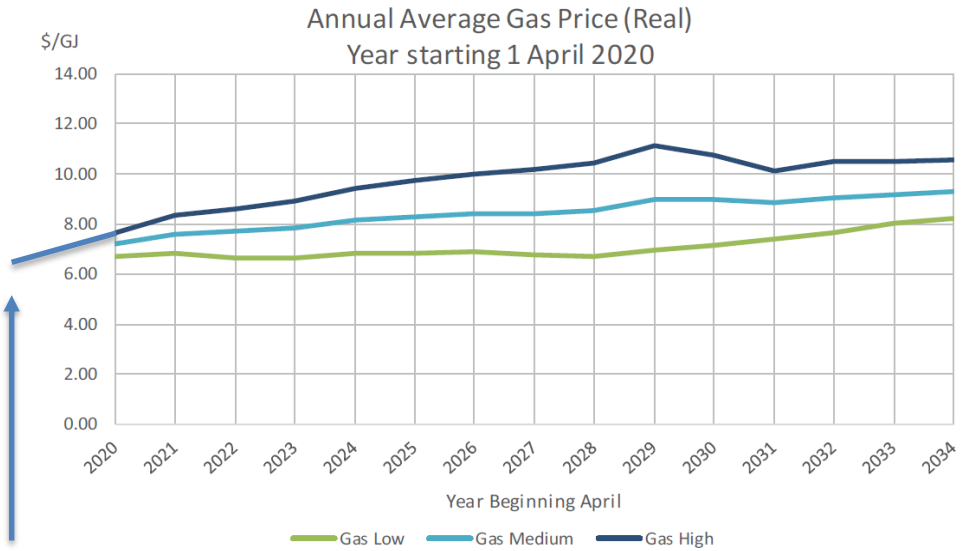
Price Outlook





OUR PRICE

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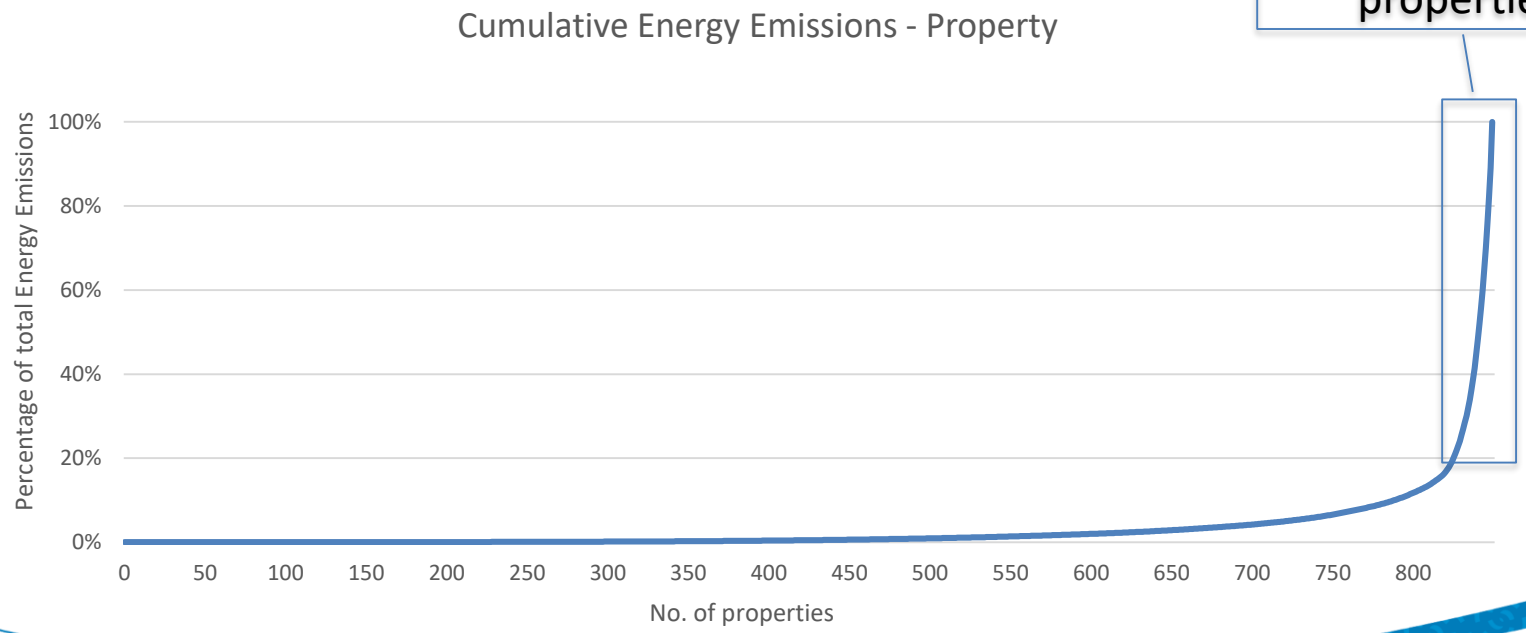
Emission Reduction Plan - Context

80% of emissions from 25 properties



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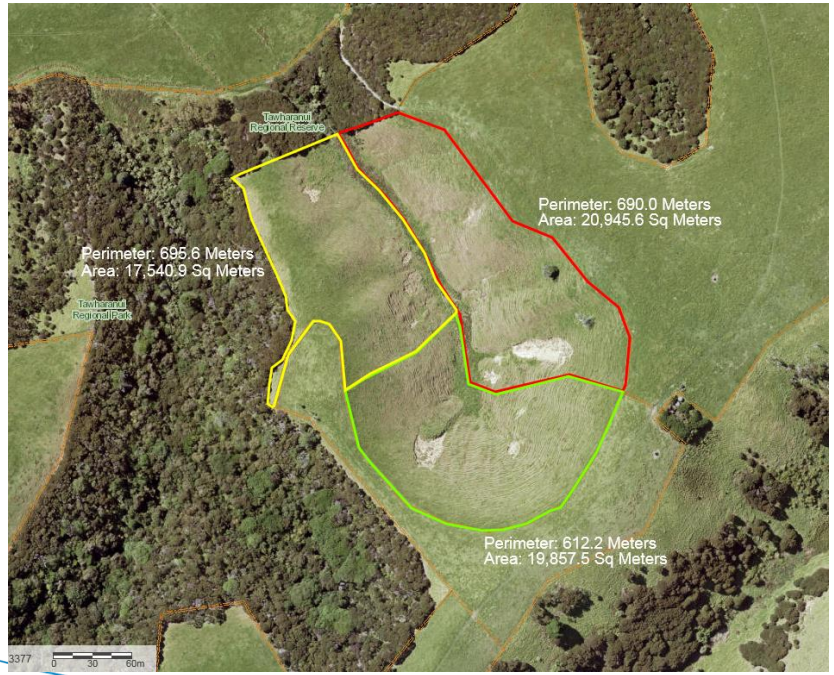
Emission Reduction Plan - Context



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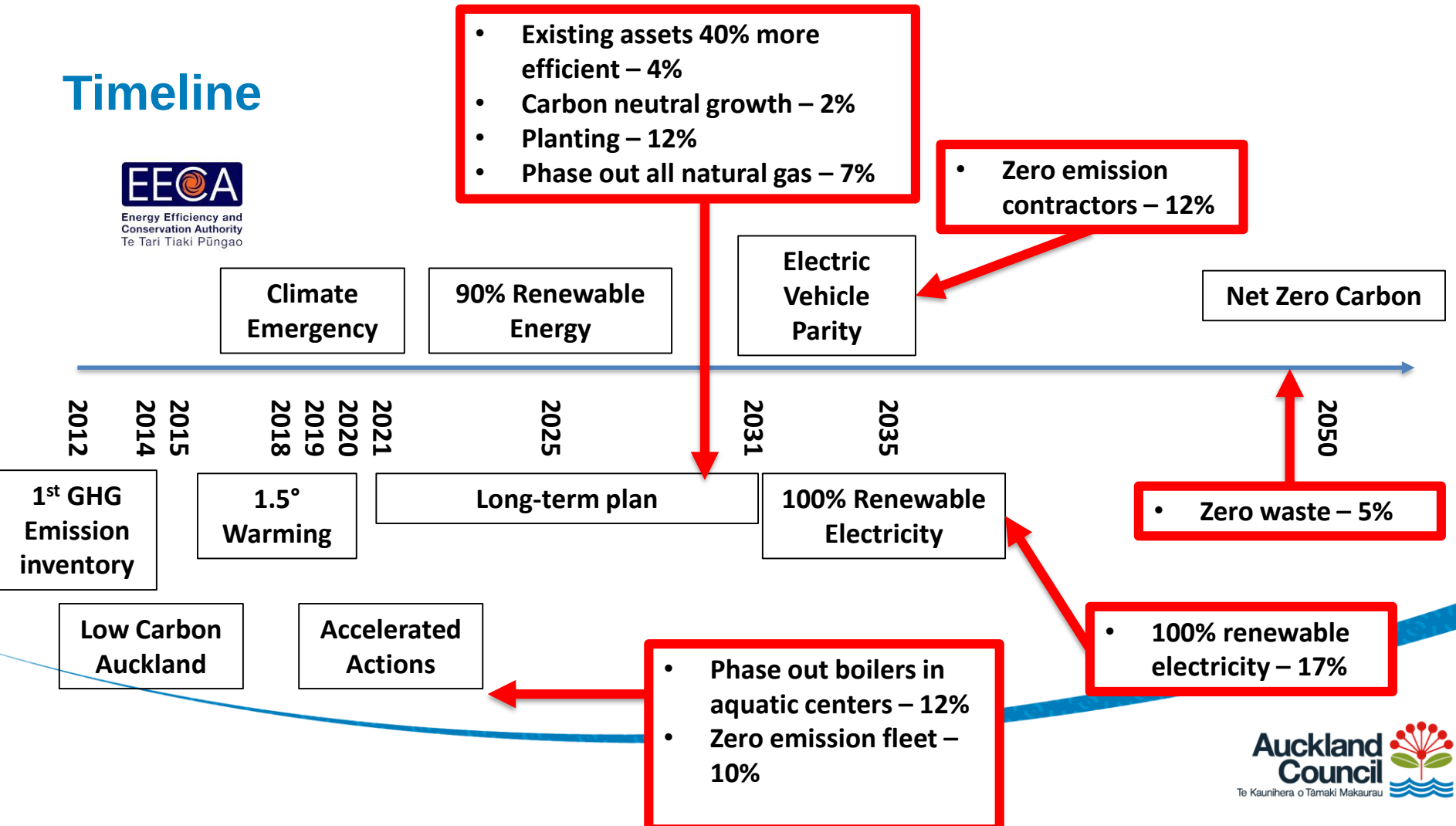
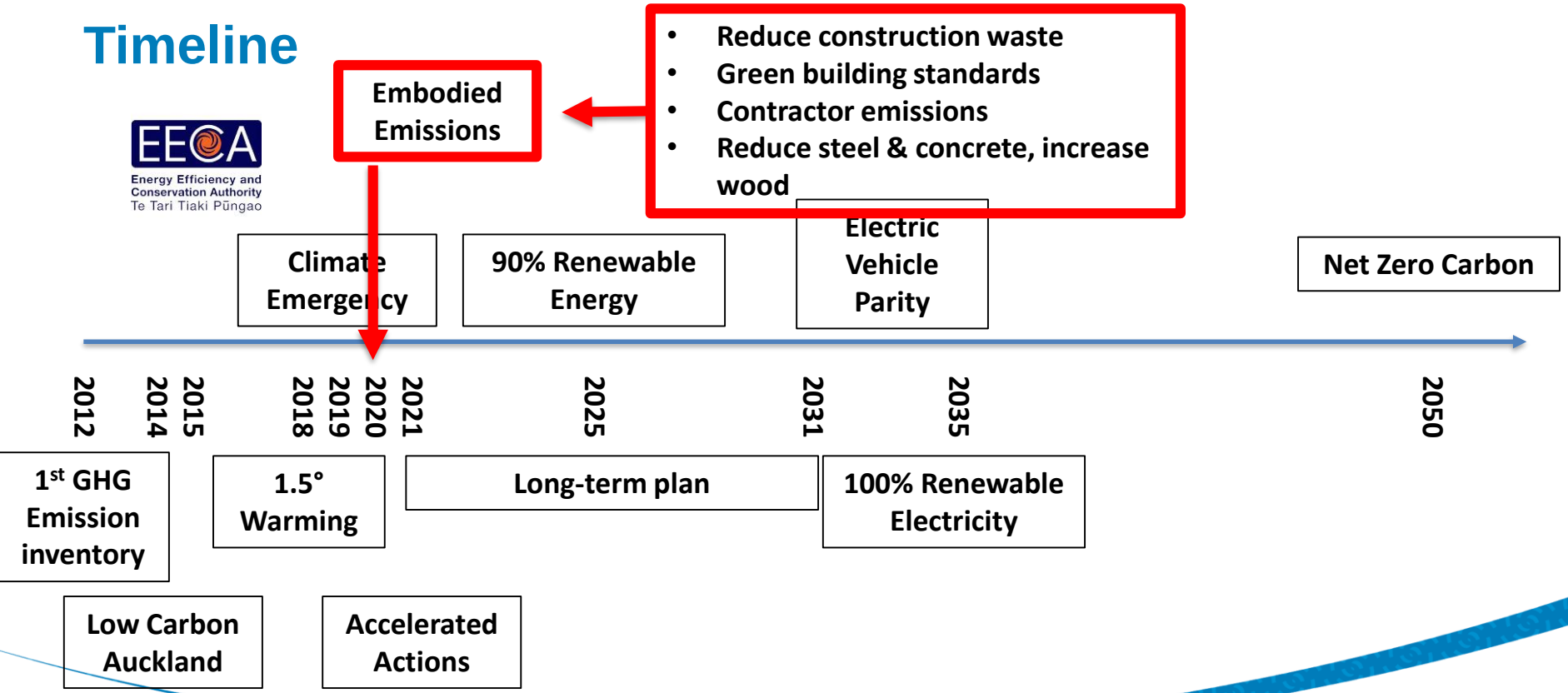
Timeline


• Existing assets 40% more efficient – 4%
• Carbon neutral growth – 2%
• Planting – 12%
• Phase out all natural gas – 7%
• Zero emission contractors – 12%
Climate Emergency
90% Renewable Energy
Electric Vehicle Parity
Net Zero Carbon
2012
2014
2015
2018
2019
2020
2021
2025
2031
2035
2050
1st GHG Emission inventory
1.5° Warming
Long-term plan
100% Renewable Electricity
• Zero waste – 5%
Low Carbon Auckland
Accelerated Actions
• Phase out boilers in aquatic centers – 12%
• Zero emission fleet – 10%
• 100% renewable electricity – 17%

Timeline



EECA
Energy Efficiency and Conservation Authority
Te Tari Tiaki Pūngao

Auckland Council
Te Kaunihera o Tāmaki Makaurau

Our Journey

- Understand you problems and opportunities
- Business case
  - Fix problems
  - Move from reactive to proactive
- Build credibility with results
- Broaden to sustainability

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