Tools for measuring GHG emissions

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AECOM New Zealand Ltd.

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Climate change: this is the worst scientific scandal of our generation

Our hopelessly compromised scientific establishment cannot be allowed to get away with the Climategate whitewash, says Christopher Booker.

CO2 emissions will be on top of the agenda at the Copenhagen summit in December Photo: Getty

Christopher Booker
Earth Debates »
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In Christopher Booker

The climate change scare is dying, but do our MPs notice?


Megan Collins
@megancollins
Could reporters stop asking if political leaders "believe" in climate change and start asking if they understand it instead
11:46 PM - Jun 2, 2017
112K
48.3K people are talking about this

Why it does matter!!!

• Los Angeles, Marrakech, Montreal, Denver, Lisbon, Amsterdam, Glasgow, Belfast and Tbilisi have all recorded their highest **ever** temperatures.

• In Siberia, for the first time in memory, the ground that insulates some of the deepest layers of permafrost did not freeze,

• In the Arctic, some of the oldest & thickest sea ice has started to break up, a phenomenon **never** recorded before.

• **New temperature records** have been set in Algeria (51.3℃), South Korea (40.7°C), Norway (33.5°C) and Japan (41.1℃).

• Oman has recorded the **hottest ever global overnight minimum** (42.6℃), and

• California's Death Valley set the record for the hottest month **ever** recorded on Earth, with an average of 42.2℃.

• Sweden experienced its hottest July in 260 years and its worst drought in 74 years.

• The first half of summer in the United Kingdom was the driest **on record**

• California and Greece have experienced some of the **largest & deadliest** wild fires ever!!!

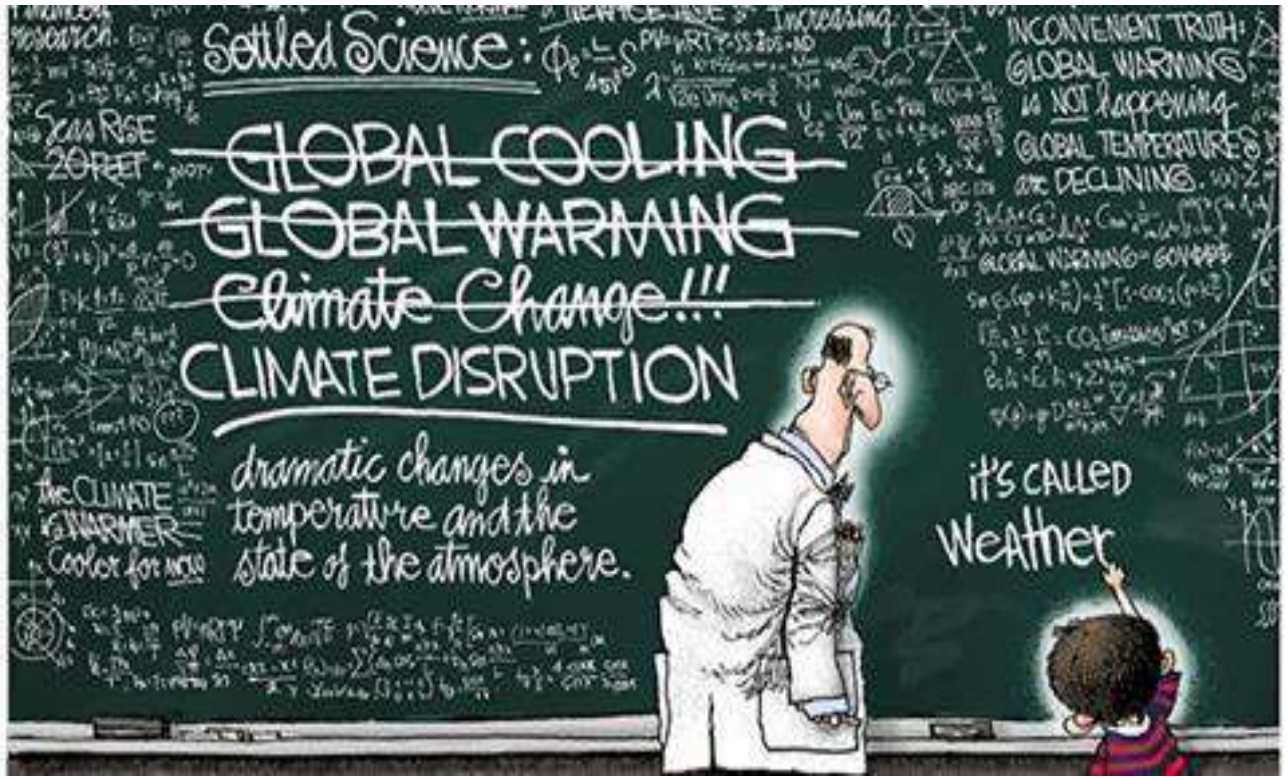
Climate vs. weather

Weather is:

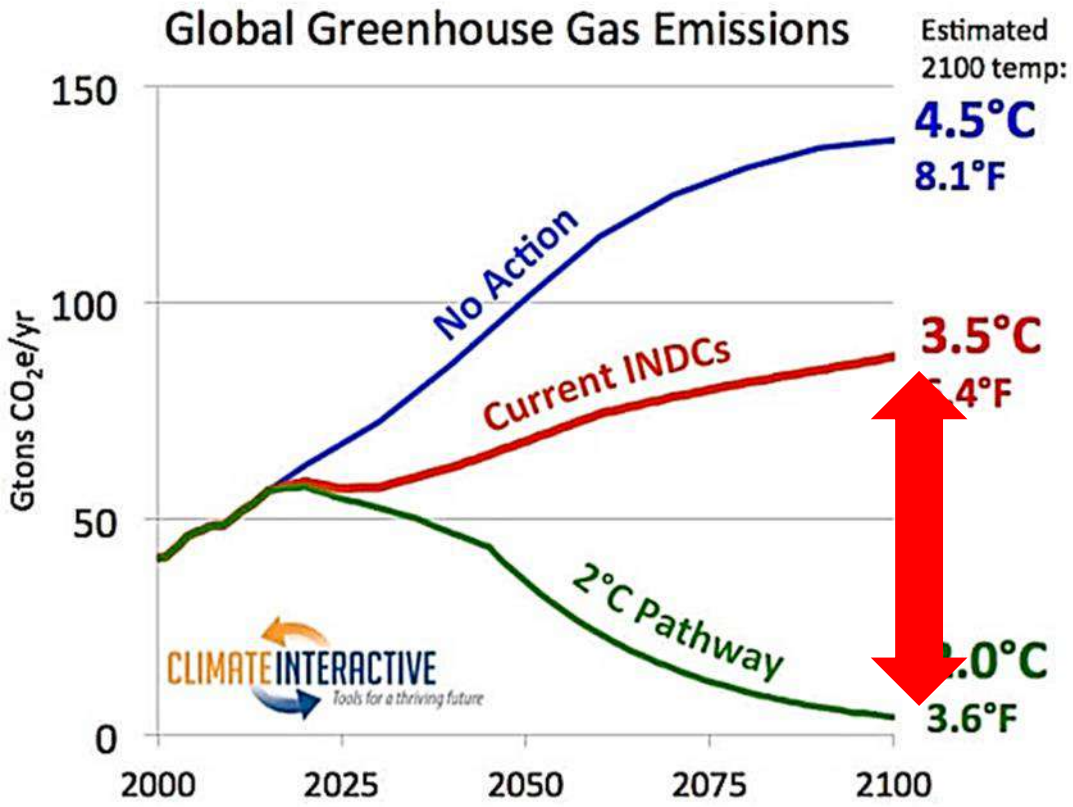
the state of the atmosphere with respect to wind, temperature, cloudiness, moisture, pressure, etc. - over hours to weeks

Climate is:

Weather conditions prevailing in an region over a long period – from decades to millennia



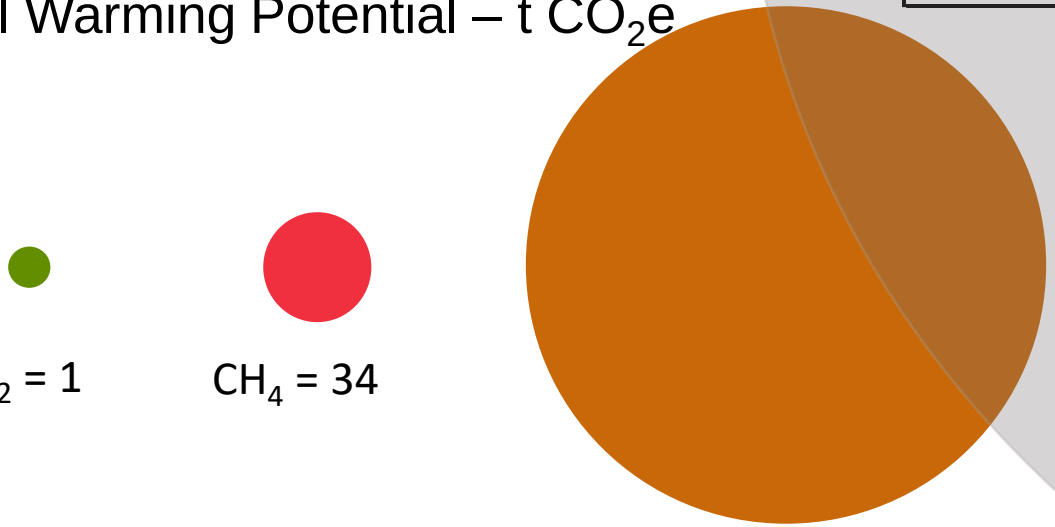
Why measuring your GHG emissions is crucial



GHG emissions

- Production vs. consumption
- Scope
  - Sectors (Energy, Transport, Waste, IPPU, Agriculture, Forestry)
- Global Warming Potential – t CO_2e

Scope	Definition	Examples
Scope 1	Direct emissions	Fuel used in cars or machines, process emissions you control, HVAC, Landfills you operate or control
Scope 2	Electricity and heat relaated emissions	Electricity and heat relaated emissions
Scope 3	Everything else	Products and services you procure, air travel, commuting, leased assets, investments, etc.



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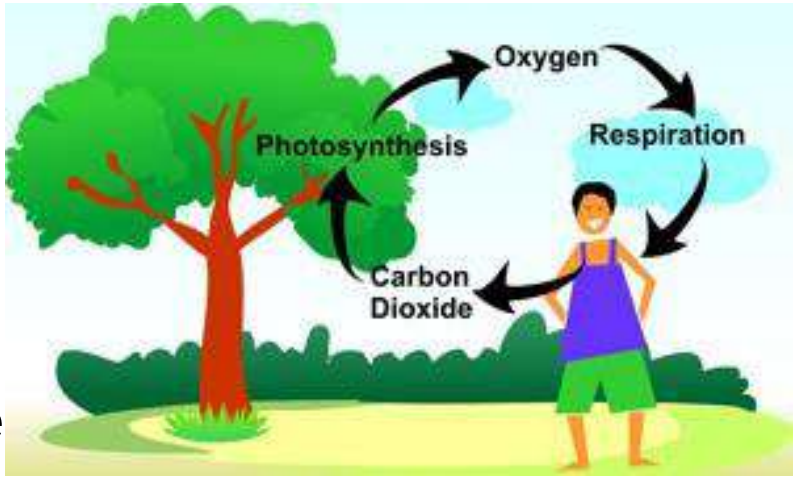
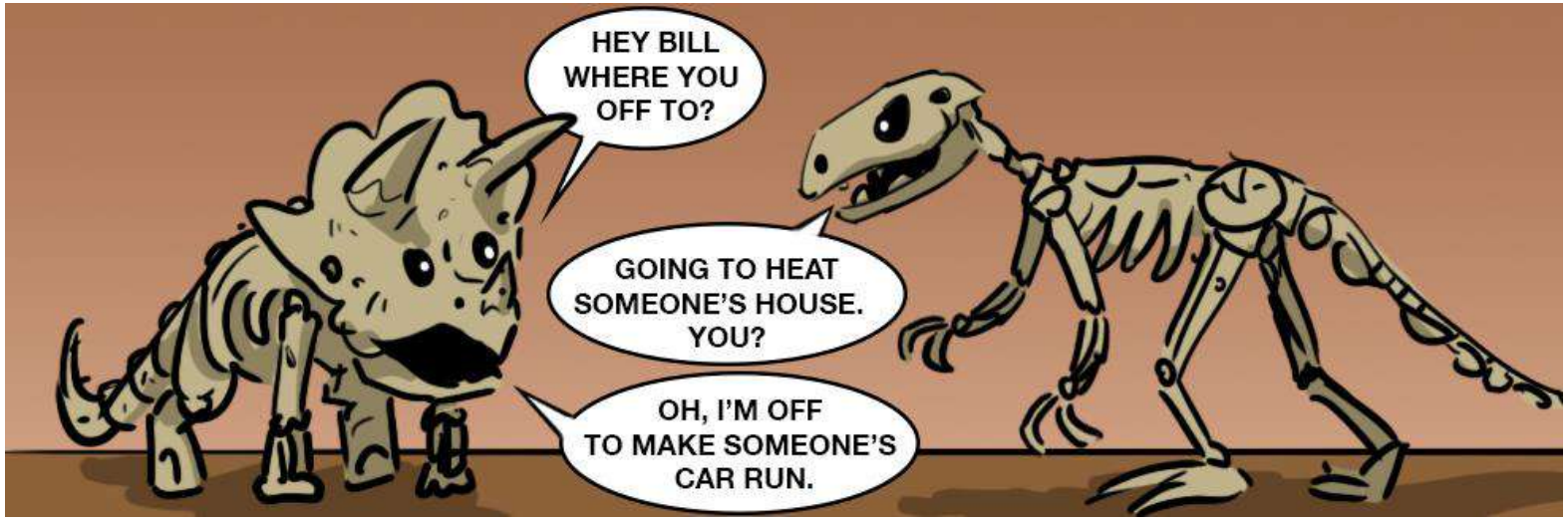
What's not included

- Biogenic fuel sources (only emissions from fossil fuel sources are included)
- CO_2 from trees combusted, CO_2 exhaled by humans, CO_2 in landfill gas, etc. are not included
- These are considered to be part of a short carbon cycle (i.e. trees & plants sequester carbon which is released back into the atmosphere then the biomass is burned off)





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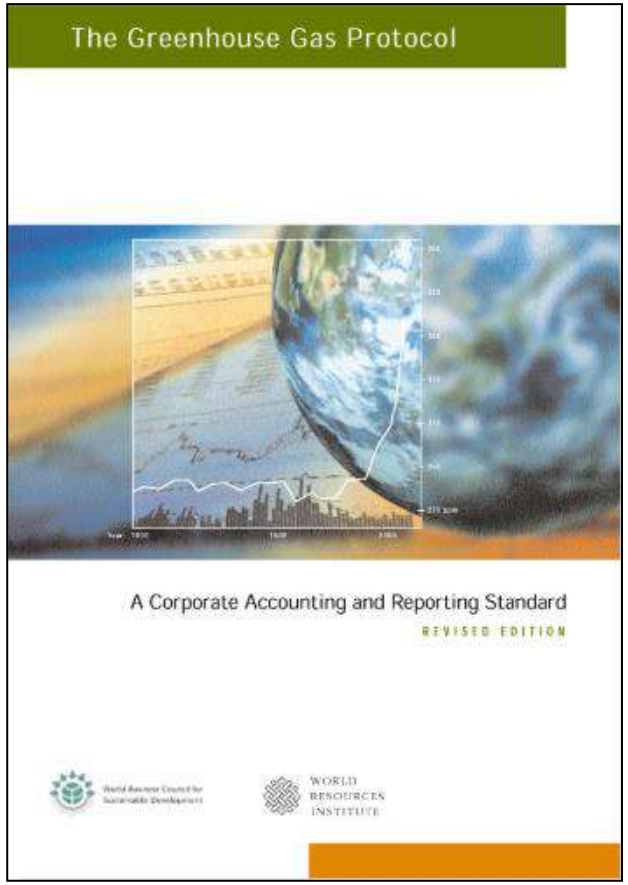
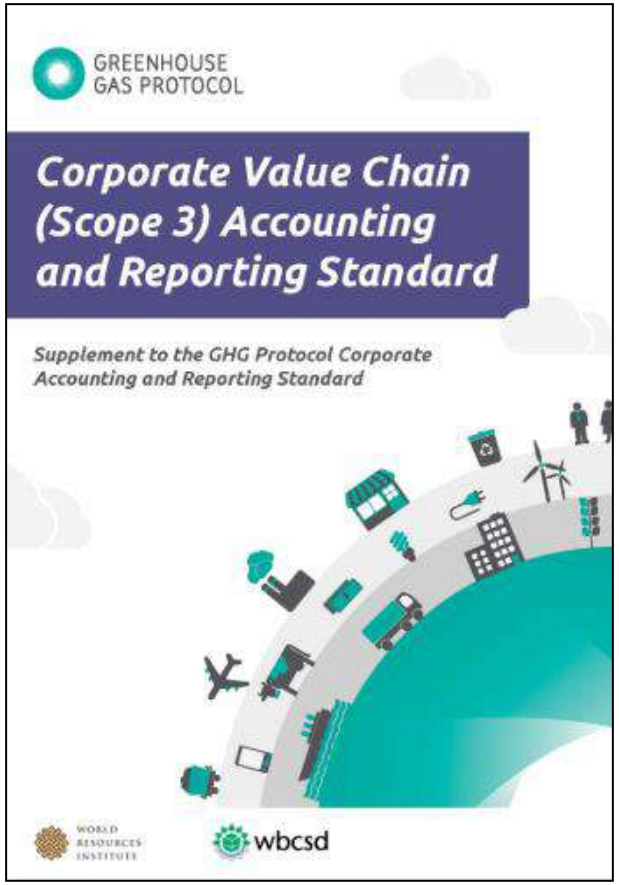
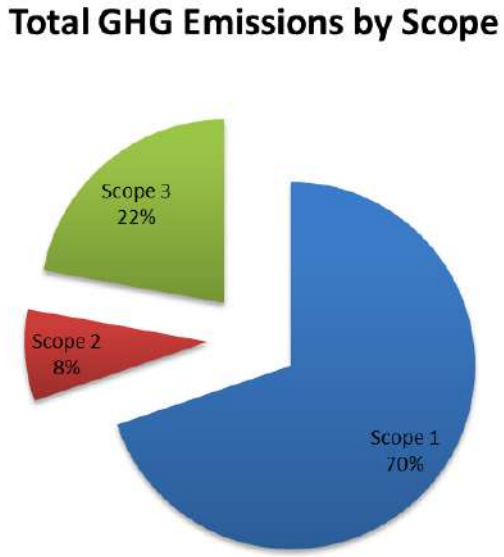
Corporate GHG Reporting Standards

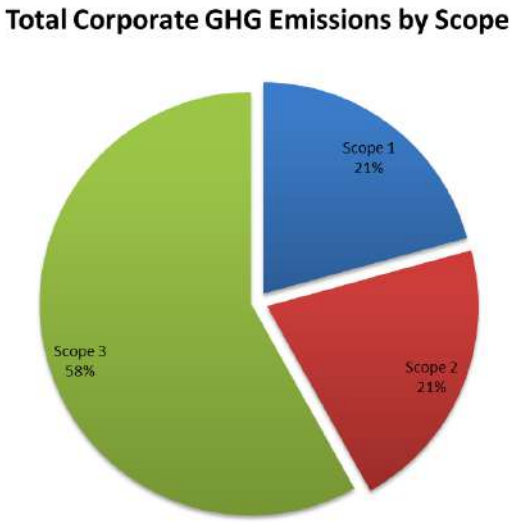




Corporate GHG reporting – what's required

- Fuel use (fleet & generators)
- Gas & coal use (building & pools)
- HVAC refills
- Electricity use
- Air travel
- Landfill data (waste volumes and landfill gas collection)!!!
- Purchased goods and services (General Ledger)
- Similar data from your CCOs

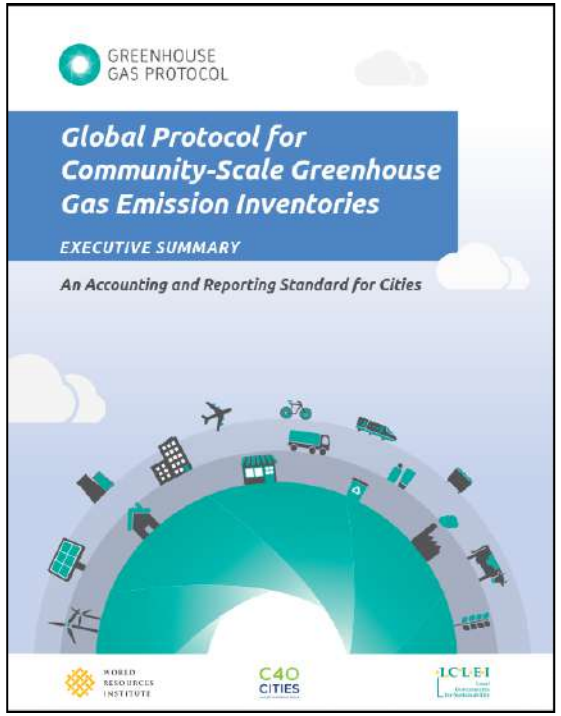


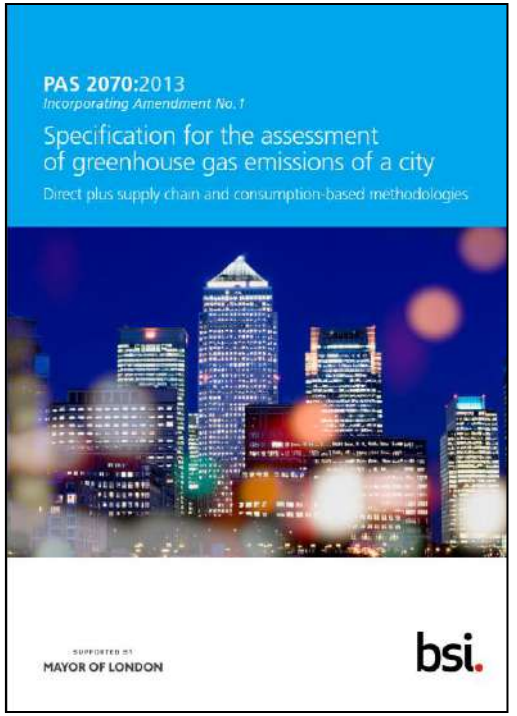


Community Level GHG reporting

Standards

- Global Protocol for Community Scale GHG Inventories (GPC)
- PAS 2070 (specifies requirements for the assessment of GHG emissions of a city) – production and consumption based emissions
- GCoMfEC – Common Reporting Framework





Tools:

- CIRIS
- CURB abatement curve, mitigation measures

Reporting entities

- Self reporting
- CDP
- Carbon*n* Climate Registry

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Global Covenant of Mayors for Climate and Energy

- Sign-up (AKL, WLG, DUD, CHC, Palmerston North, Rotorua, New Plymouth)
- Report community carbon footprint (CDP Cities or Carbon*n* (CIRIS))
- Develop Climate Change risk and vulnerability assessment
- Set Emission Reduction Target
- Develop a Climate Action Plan

GPC reporting framework to be finalised and released next week

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Community emissions – what's required

Energy

- Gas, coal, LPG, biofuel, electricity

Transport

- Fuel sales data, air travel, port activity

Waste

- Landfill – waste volumes, landfill gas collection, waste composition
- WWTP – treatment technology, BOD, population connected

Agriculture

- Animal numbers, fertilizer use, horticultural production data

Forestry

- Total forest area by age class and species
- Harvest data

Emission factors


CIRIS
Welcome
BUILT ON GHG PROTOCOL
CIRIS
CITY INVENTORY REPORTING AND INFORMATION SYSTEM
Version Standard
2.1
Date Aug 2017
Click here to begin

CURB Tool

Introduction | 1 Setup | 2 Inventory | 3 Context | 4 Actions | 5 Results | 6 Database

Tool Purpose | User Guide | Partners | Display Settings | Terms and Conditions | Considerations

Welcome to CURB: Climate Action for Urban Sustainability

The **CURB: Climate Action for Urban Sustainability** tool is designed to help guide cities through the process of planning and implementing a range of interventions to reduce energy use and emissions, while also improving local livability through a variety of additional benefits, from improved air quality to local economic development.

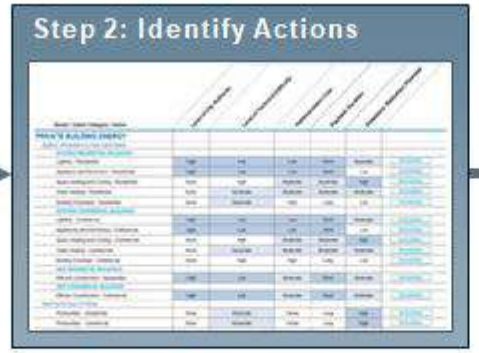
CURB Tool

Climate Action for Urban Sustainability

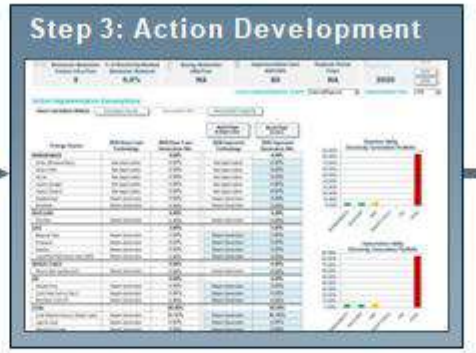
CURB (added extras)

Emissions mitigation actions support tool

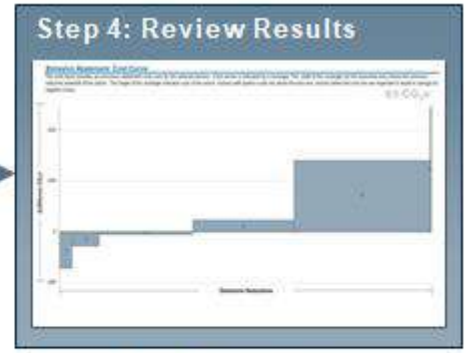
Assess the level of authority the City has to implement policies or programs within each action area and sub-category.



Using the results of the powers survey and other performance indicators, review the different actions that the City could take to reduce the community's emissions and energy

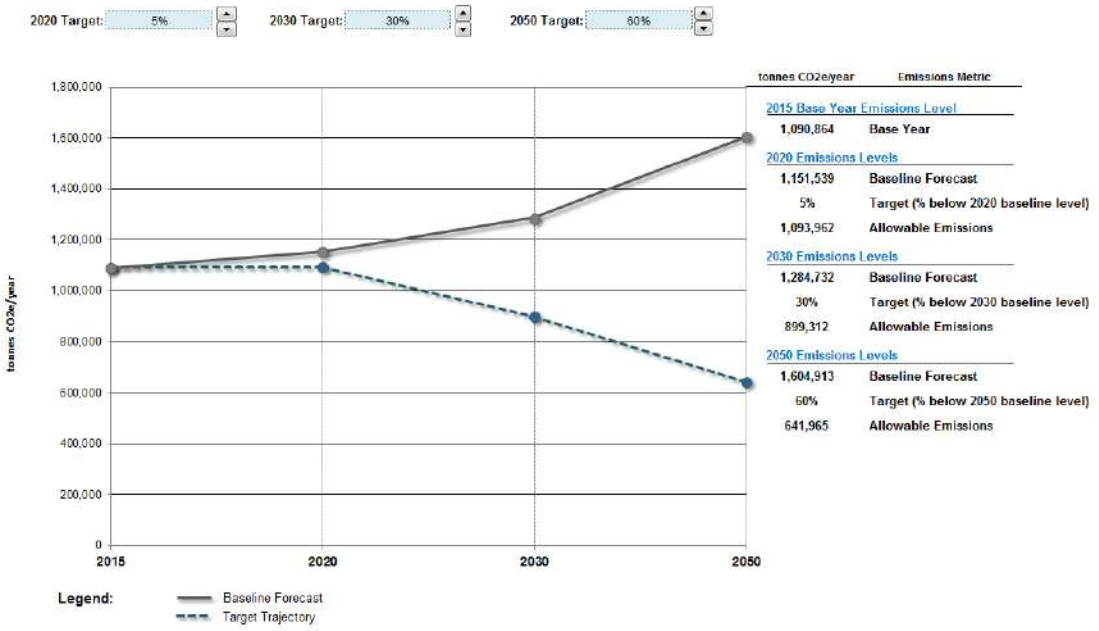


Develop the individual actions the City wish
impleme
horizon



Assess the level of emission

Emissions projections and target development



Take home message

All GHG or carbon footprints are:

- Estimates (no need for decimals)
- Include uncertainty
- Based on specific assumptions and boundaries (transparency!!!)
- Sometimes difficult to compare to others

The most important thing is consistency!

- Continue using the same methodology (or back-calculate previous years)
- Ultimately the trend is what you are after!!! (pic from Wellington!)

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