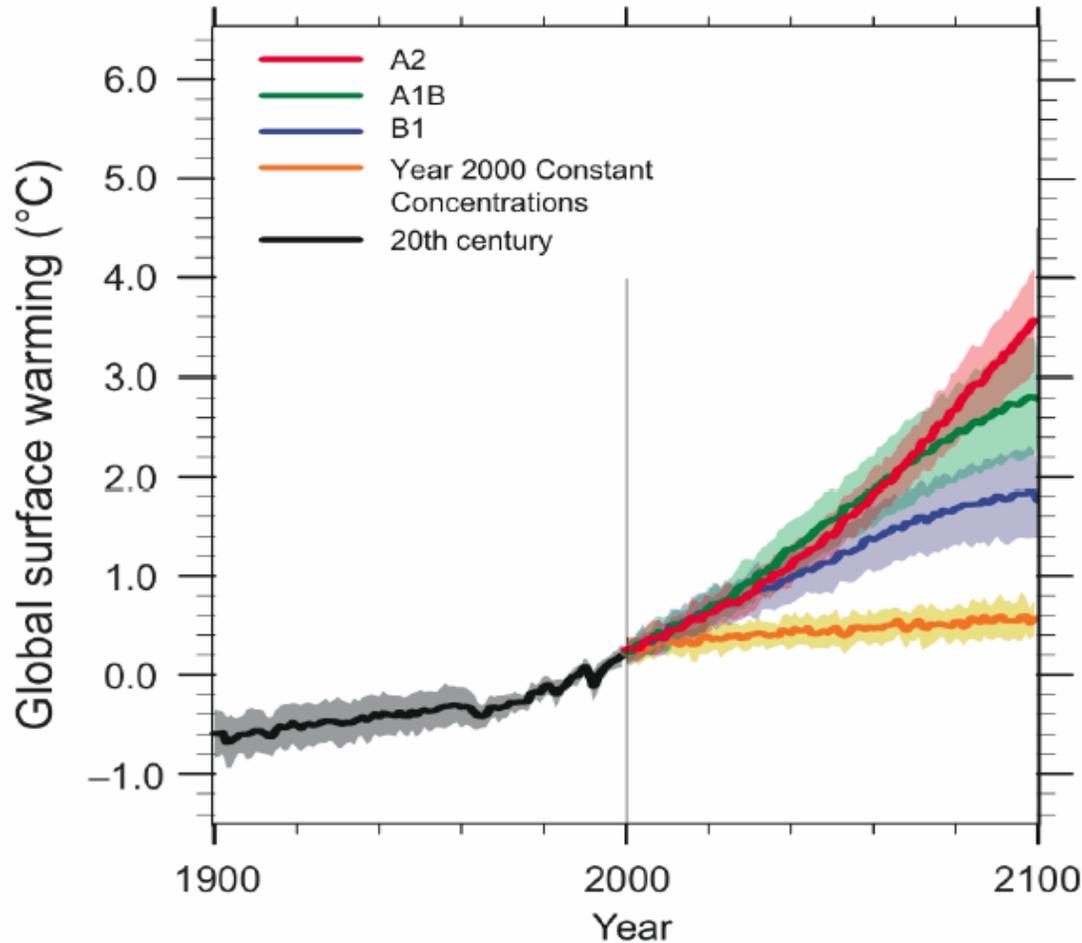


Climate Change and Cities

Man-made emissions have already caused temperatures to rise 0.7C and could rise by a further 3.6C rise by the end of the century on BAU trends

- Carbon dioxide
- Methane
- Nitrous oxide
- F gases

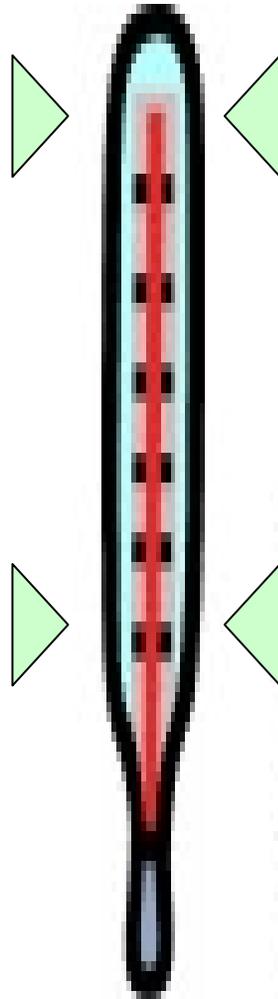


3.6°C: best estimate of temperature increase on current levels associated with BAU emissions, by end of the century

Unchecked, temperature rises will take us beyond the realms of human experience

By 2100, business as usual means 50:50 chance of 5°C temperature increase

By 2035, business as usual means at least 2°C warming by around the end of the century



5°C

Impacts are greater and less certain:

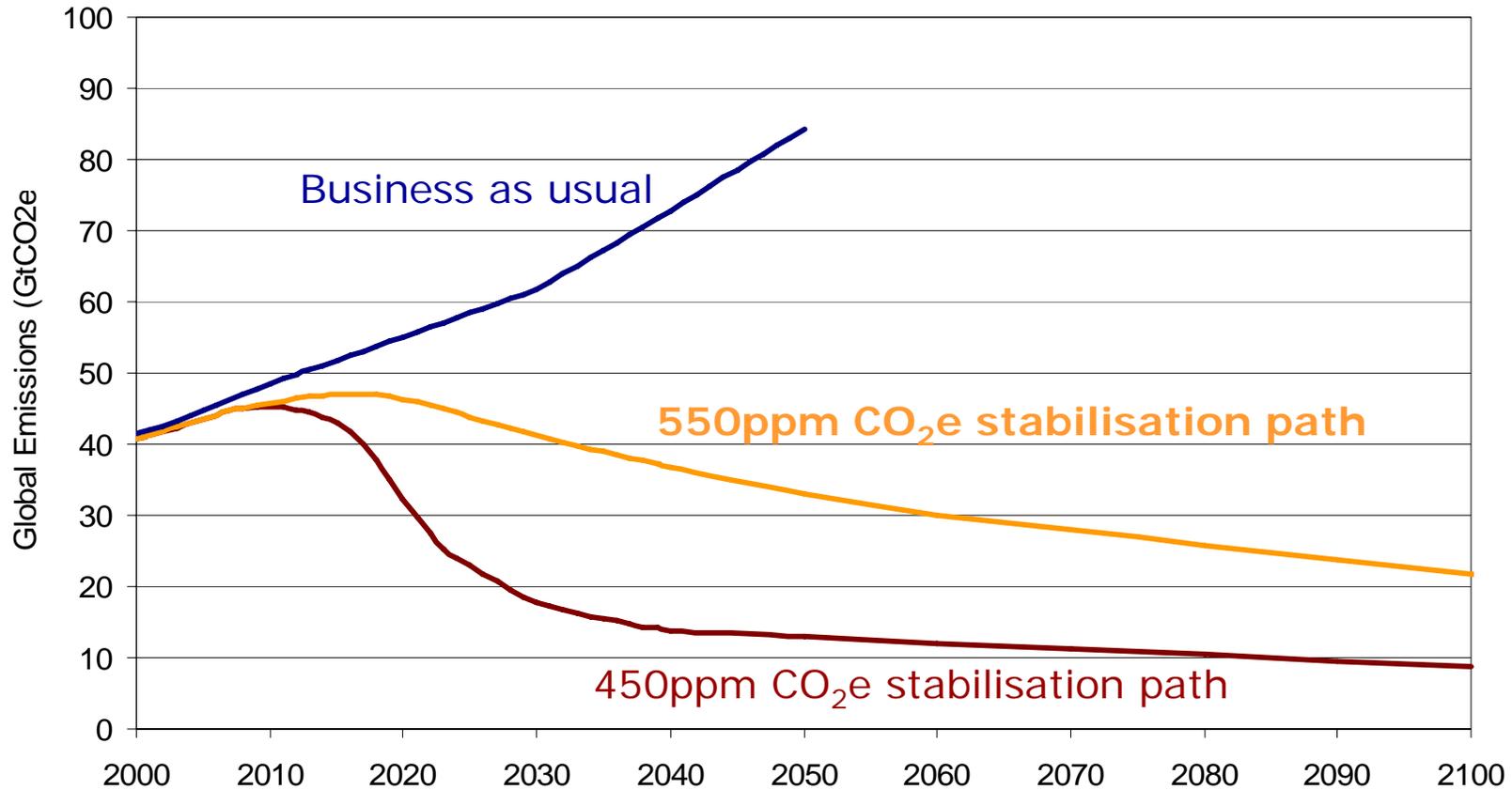
- At least 150m additional people at risk of hunger
- Increased security risk through migration and scarce resources
- Sea level threatens London, New York and Tokyo.

2°C

40-60m more people exposed to

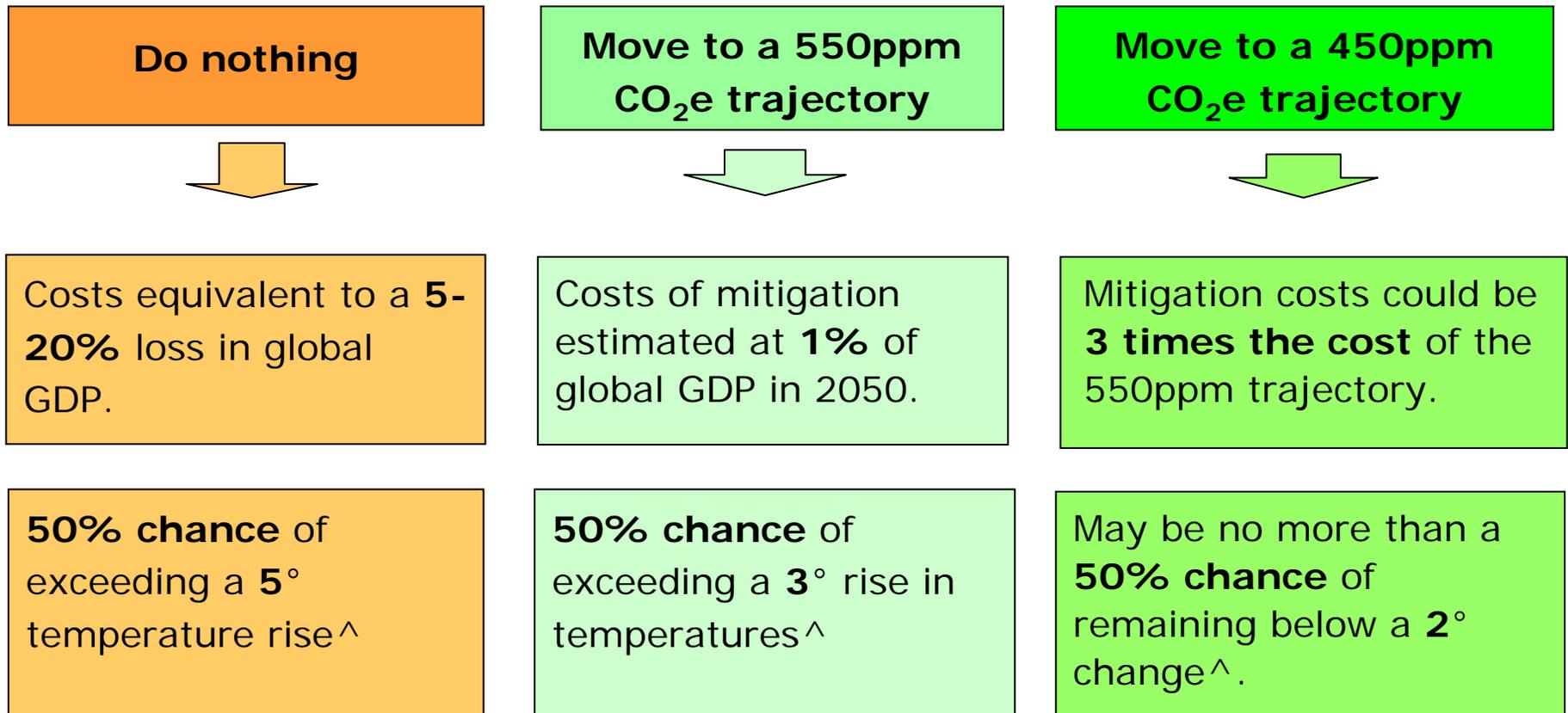
- malaria in Africa.
- 15-40% of species facing extinction

Stern has shown that, to avoid the worst impacts of climate change, we need to stabilise emissions at concentrations of 450-550ppm CO₂e...



CO₂e = carbon dioxide equivalent. This converts the various greenhouse gases (methane, nitrous oxide and F-gases) into comparable units in terms of global warming potential.

... and Stern has shown that doing so is cost effective relative to inaction



All temperature changes quoted are relative to pre-industrial temperature levels. [^]Temperature increases by end of the next century.

*Global income loss (5-20%) is equivalent to an "average" annual loss of GDP each year now and forever.

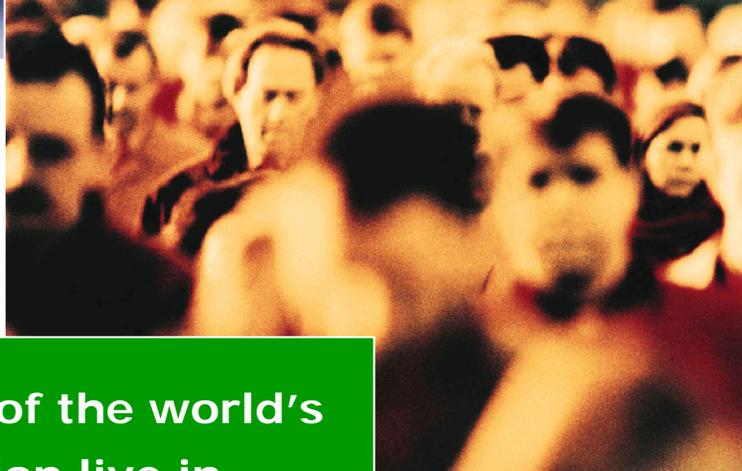
Cities are major contributors to global climate change



Cities cover less than
1% of the world's
surface area



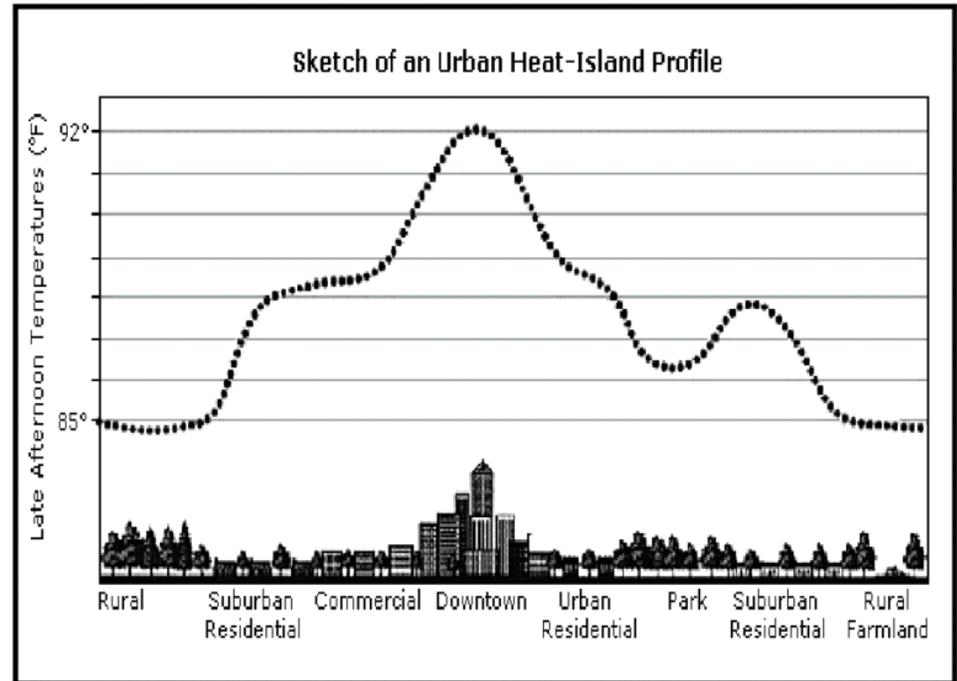
Yet cities consume
some **75%** of the
world's energy and
are responsible for
80% per cent of
greenhouse gas
emissions.



50% of the world's
population live in
cities (set to rise to
60% by 2030)

The effects of climate change will also be felt keenly in many cities

Many of the world's major cities are close to the sea, so rising sea levels are a major threat

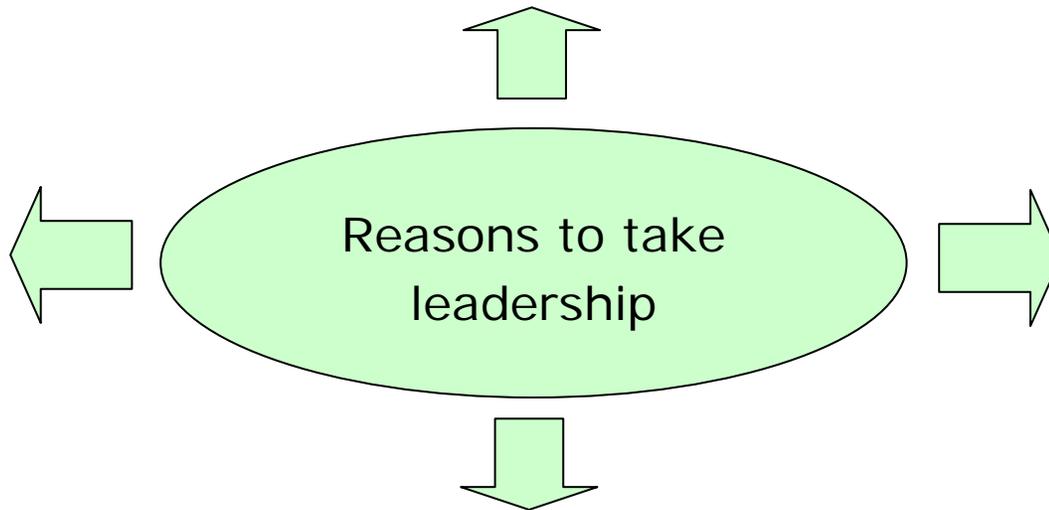


When thinking about action that cities can take, a good comparison is our discussions on the UK role

“First mover **economic advantage**” as an innovator (green economy is estimated to be worth \$500bn globally by 2050) and to **avoid lock-in** to a high carbon economy.

Supporting our international position

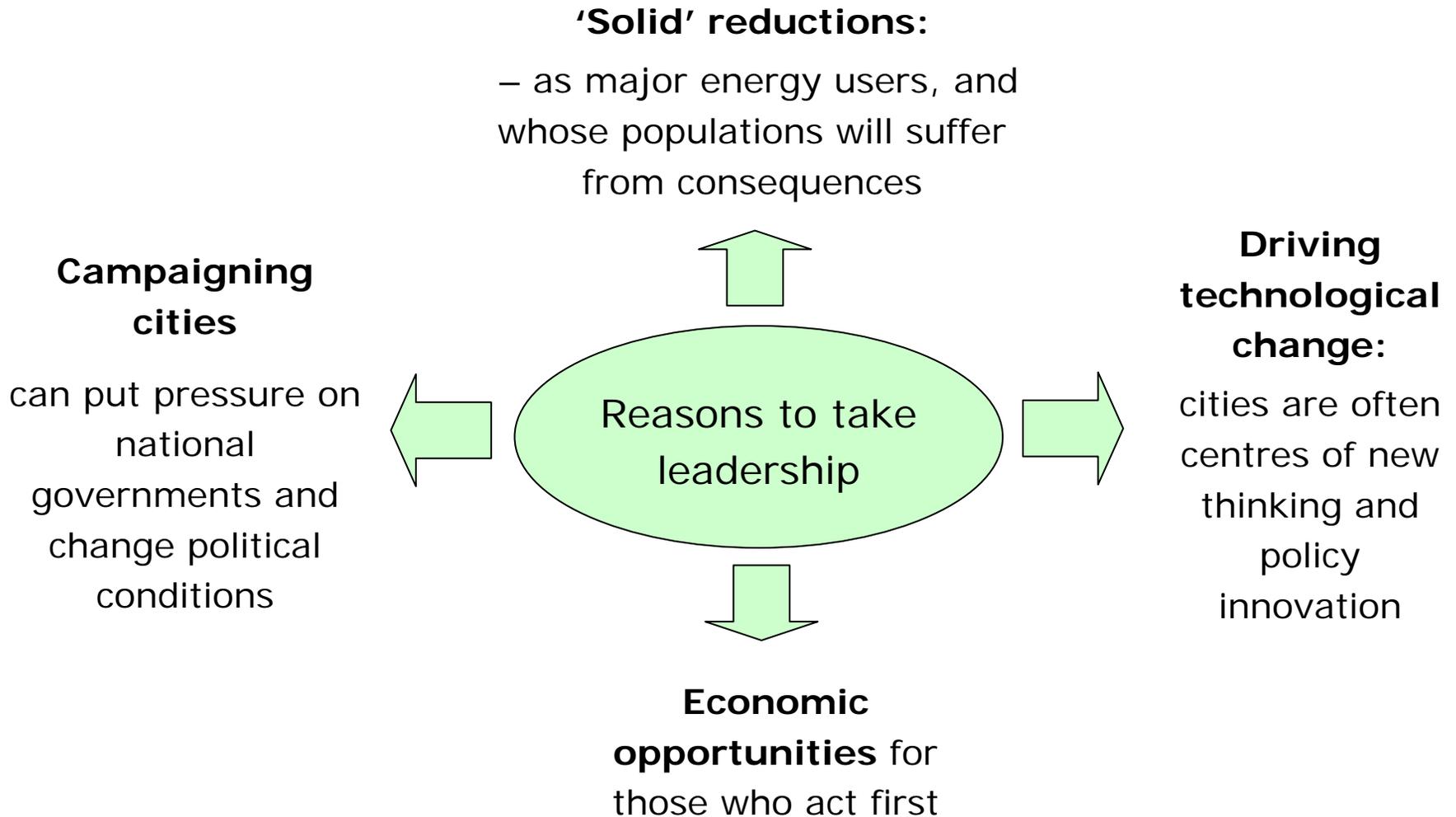
Demonstrating our commitment and showing that it is possible to cut emissions without unacceptable economic pain



Energy efficiency measures **save money** across the economy.

Climate change policies can help diversify energy sources, helping deliver **energy security**

Cities are well placed to take the lead in tackling climate change



The C40 Climate Leadership Group and Clinton Climate Initiative are helping to drive collective action by cities



C40:

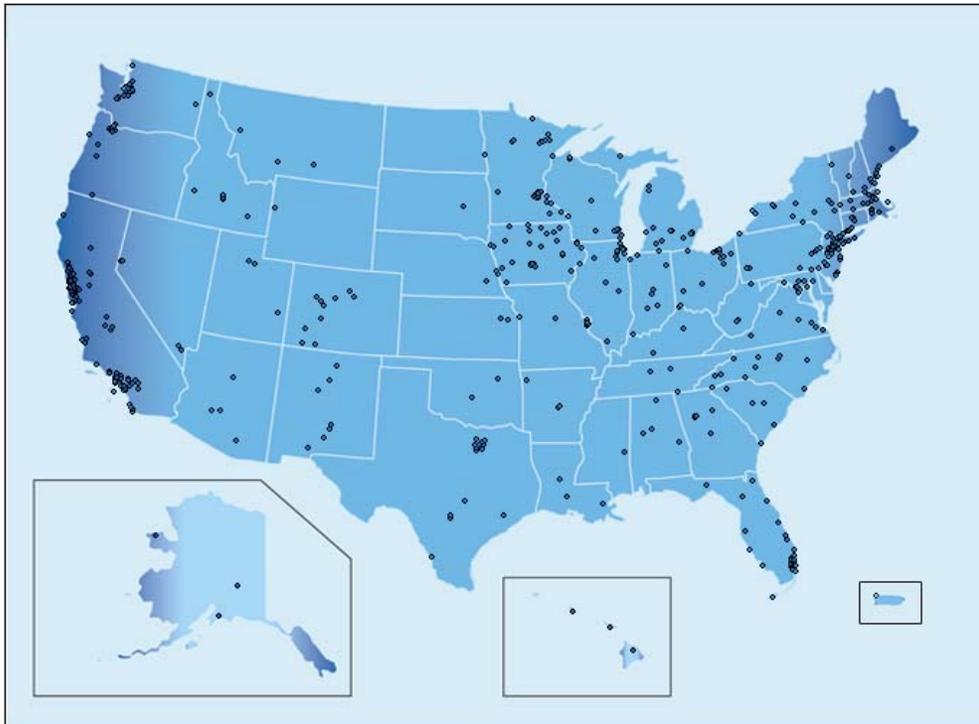
- **Group of the worlds largest cities who have pledged to co-operate and to take action to tackle climate change**

CCI:

- **Supports cities by**
 - **Pooling purchasing of cities**
 - **Mobilising expert assistance**
 - **Developing common measurement**

US cities are pledging to take action and cut emissions

- **“Due to an absence of Federal leadership”**.... As of 13 July 2007, **600** Mayors Had Signed the US Conference of Mayors Climate Agreement (a pledge to reduce CO₂ by 7% below 1990 standards by 2012).



- Energy Efficiency Upgrades of Public Property
- Alternative Fuel/Hybrid Public Fleets
- Stronger Efficiency Standards for New Buildings

London has set ambitious targets and has a plan to deliver against these

LONDON



- The London Mayor has set ambitious targets beyond the UK commitment
 - 60% reduction by 2025
- A series of measures are proposed
 - Greening buildings (existing and new)
 - Increase in decentralised energy supply
 - Demonstration by doing (important with new technologies)

Fossil Fuel Free Växjö Programme

“Fossil Fuel Free Växjö” is a policy commitment to stop using fossil fuels and reduce CO2 emissions in heating, energy, transport, businesses and homes.

FEATURES

- Massive expansion of its district heating system
- Greater use of biomass as an energy fuel
- Energy efficiency initiatives
- Lobbying the national government

IMPLEMENTATION

Measuring CO2 emissions and setting strict targets:

Maintaining Political Will:



Is it working?

51% of Växjö's energy comes from climate friendly sources

By 2015 the City may well be the world's first fossil free city.

Questions

- Do you agree that cities have a role in the wider political debate about climate change?
- If so, how best should they engage with this debate?
- Given the wide difference in power for city governments, what are the common areas where cities can make progress on reducing emissions?