
 **Raising awareness on climate change in cities – added value and risks**

Campaign: Zero Carbon City: Reacting to Climate Change  
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**Klaus Radunsky**



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## Overview

- Why? – Impacts
- CCC – The climate change challenge
- Goals
- Emission pathways
- Mitigation of Climate Change

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## Why? - Impacts

1-2 C Above pre- industrial	Major impacts on ecosystems and species; wide ranging impacts on society
1.5 C	Greenland ice-cap starts to melt (7m)
2-3 C	Major loss of coral reef ecosystem; considerable species loss; large impacts on agriculture; water resources; health; economies.
	General increase in droughts and extreme rainfalls as temperature increases. Up to 88cm sea level rise in next 100 years.
2-3 C ?	Terrestrial carbon sink becomes a source.
1-4 C ?	North Atlantic circulation collapses
2-4.5 C ?	West Antarctic ice sheet collapses (6m)

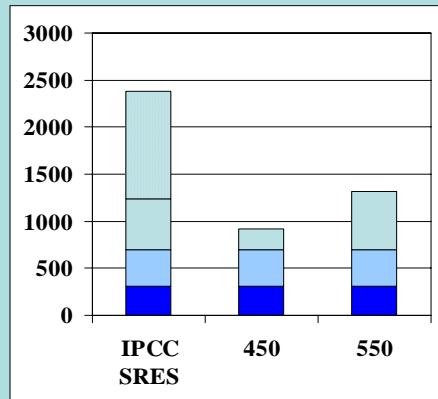
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## CCC – The climate change challenge (1)



Cumulative CO<sub>2</sub> Emissions (GtC)

- 2030 to 2100 – IPCC and WRE scenarios
- 2000 to 2030 - IEA
- Up to 2000 - historic

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## CCC – The climate change challenge (2)

- In the next 25 years 70% increase in energy demand predicted by IEA
- To be on track to meet a 2 C target global emissions need to be reduced by at least 15% by 2050
- Delay now requires greater reductions later
- **Challenge is to meet the growing demand for energy whilst reducing emissions to prevent significant damage from climate change**

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## Goals

- UNFCCC Article 2
  - Stabilization
- Council Conclusions
  - 2 degrees target
  - Global GHG emission reduction by 15 to 50 % by 2050 compared to 1990
  - Developed countries: minus 15 to 20% by 2020 and minus 60 to 80 % by 2050

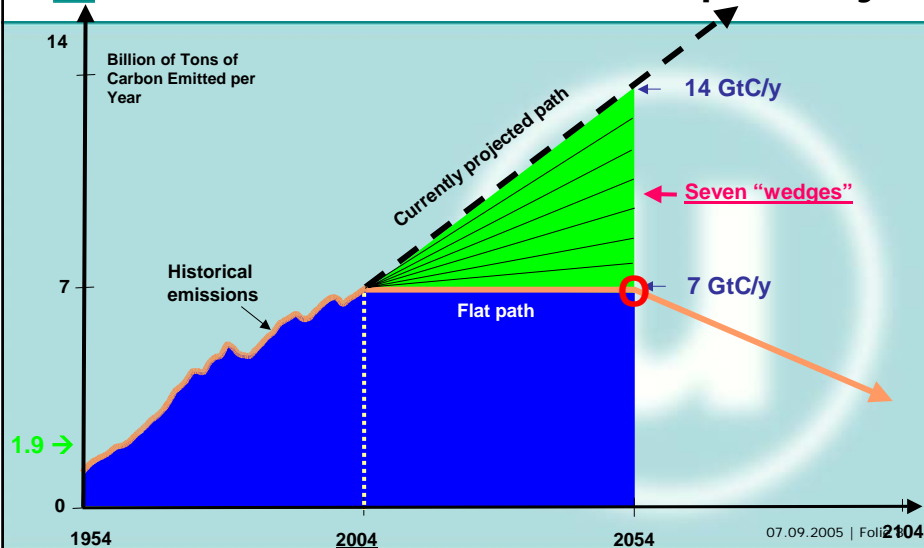
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## Emission pathways



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## Mitigation of Climate Change

### EFFICIENCY

- Buildings, ground transport, *industrial processing, lighting*, electric power plants.

### DECARBONIZED ELECTRICITY

- Natural gas for coal
- Power from coal or gas with CCS
- Power from renewables: wind, photovoltaics, *solar concentrators (troughs and dishes), hydropower, geothermal.*

### DECARBONIZED FUELS

- Synthetic fuel from coal, natural gas, and biofuels, with carbon capture and storage
- Biofuels
- Hydrogen
  - from coal and natural gas, with carbon capture and storage
  - from nuclear energy
  - from renewable energy (hydro, wind, PV, etc.)

### FUEL DISPLACEMENT BY LOW-CARBON ELECTRICITY

- *Grid-charged batteries for transport*
- *Heat pumps for furnaces and boilers*

### NATURAL SINKS

- Forestry (reduced deforestation, afforestation, new plantations)
- Agricultural soils

### METHANE MANAGEMENT

- *landfill gas, cattle, rice, natural gas*

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## Challenges

- Participation challenge
  - All industrialized countries
  - Major developing countries
- Policy integration challenge
  - Integration of mitigation into energy policy
  - Integration of mitigation into traffic policy
  - Integration of mitigation into other policy areas
- Investment challenge
  - Invest in low carbon technologies - avoid locking in technologies with high emissions
  - Buy down the learning curve
- Innovation challenge
  - Strategic deployment policies

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## Climate Change and cities

- Cities are less vulnerable compared to other parts of a region/country
- Cities prefer adaptation to mitigation (e.g. more air conditioning)
- People in the cities lack the experience of the impacts of climate change
- Priorities of people (in cities) are economic development, unemployment and security

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## The information challenge

- Inform about impacts
- Inform about mitigation
- Inform about responsibilities
- Inform about linkages of climate change (CC) to other policy areas (e.g. migration)
- Inform about opportunities, e.g. explain how mitigation of climate change may contribute to solve other pressing problems
- Explain how the citizens may contribute to address CC
- Explain who are the winners and losers if CC is/ is not being addressed
- Offer information on relevant issues in simple style ready for media

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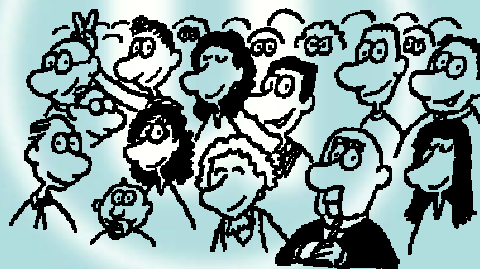




## wishing you all the best for the zero carbon city campaign

**Dr. Klaus Radunsky**  
Umweltbundesamt  
Stabstelle Klima  
Spittelauer Lände 5, 1090 Wien  
Tel.: 01-31304-5534  
Fax: 01-31304-5959

Email: [klaus.radunsky@umweltbundesamt.at](mailto:klaus.radunsky@umweltbundesamt.at)  
http://[www.umweltbundesamt.at](http://www.umweltbundesamt.at)



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