



# UN IPCC WGIII AR5

Say What?!



# The documents

- Physical Science (Sept 2013)
- Impacts, Adaptation, Vulnerability (March 2014)
- Mitigation of Climate Change (April 2014)
- Synthesis (October 2014)



# Actions

## 1. Renewables

- Fossil fuels helped create the problem – they are not likely the solution
- Report says reduce emissions by 20% in the next 10 years
- Emissions from Coal have to go, and we need to double worldwide investment in low-carbon energy



# Actions

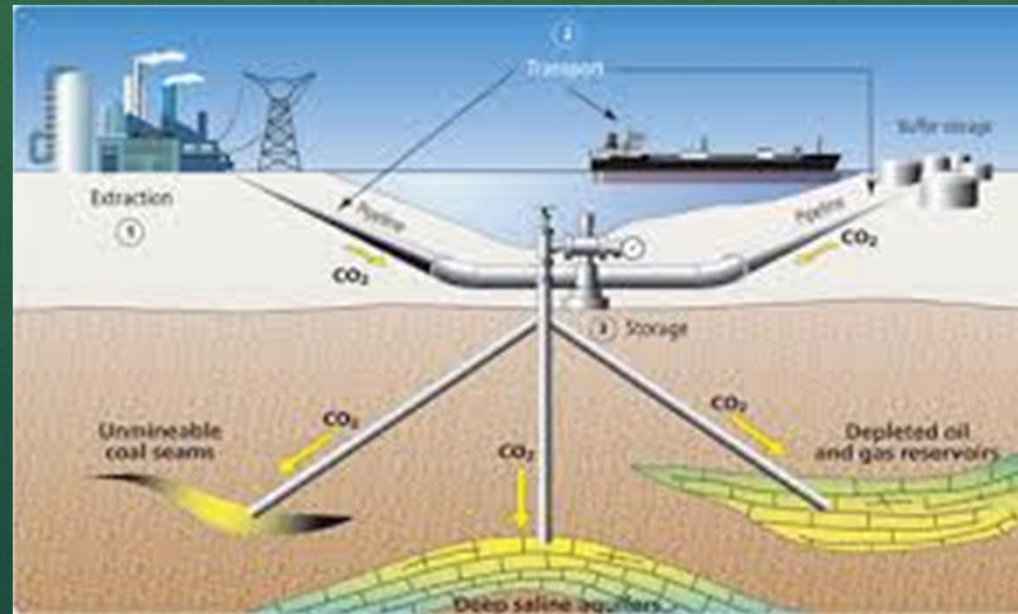
## 2. Put a Price on Carbon

- An international carbon tax is the most cost-effective tool to price carbon
- Actions that raise government revenue will likely have lower social costs than those that don't
- Meets two important goals:
  - Predictable public policy signal
  - Regulatory certainty

# Actions

## 3. Take Carbon Out of the Atmosphere

- If we can't cut emissions fast enough – and we haven't to date – then we will need to capture and store
- Problem – it isn't possible at scale just yet.





# Actions

## 4. Build More Efficient Buildings

- Globally buildings account for 35% of energy use
- Energy demand could go up 50-150% by mid-century
- Better new buildings
- Retrofit old buildings

Most urban areas in 2030 are not urban today –  
we need to invest in quality cities

# Actions

## 5. Plan Better Cities

- More than 50% of the world's population lives in cities
- Increases to more than 70% by 2050
- We have a 20-year window to get cities right
- Right means:
  - well-planned residential and commercial development,
  - energy efficient
  - Public mass-transit
  - Limited air and water pollution



# Actions

## 6. Bring Industry On Board

- 30% of global emissions growth is industry
- 28% of global energy use is industry
- Wide scale use of best available technologies could reduce industrial emissions by 25%
- Best Technologies are cost-effective, profitable, and have multiple benefits

So what are the Barriers?

- Lack of policy and lack of experience



# Actions

## 7. Set Standards for Cars and Trucks

- Transportation emissions are growing faster than all others
- Possibly 71% above 2010 levels by 2050
- Better urban planning
- Low carbon fuels

“[cutting back]...will be challenging since the continuous growth in passenger and freight activity could outweigh all mitigation measures unless transport is decoupled from GDP.”

# Actions

## 8. Make Better Use of Land

- Plant more trees
- Improve crop and grazing land management
- Restore organic soils

We need to allow the world to 'breathe in'



# Actions

## 9. Live 'Greener'

- Lifestyle and behavior are important
- Combined with policies and infrastructure it really is about what we do
- Changing behavior in our current buildings could reduce energy demand 20% in the near term and 50% by 2050

# Actions

## 10. Cooperate Internationally

“Effective mitigation will not be achieved if individual agents advance their own interests independently”

-IPCC report author Robert Stavins

This is a global problem that requires a global solution



# Stats

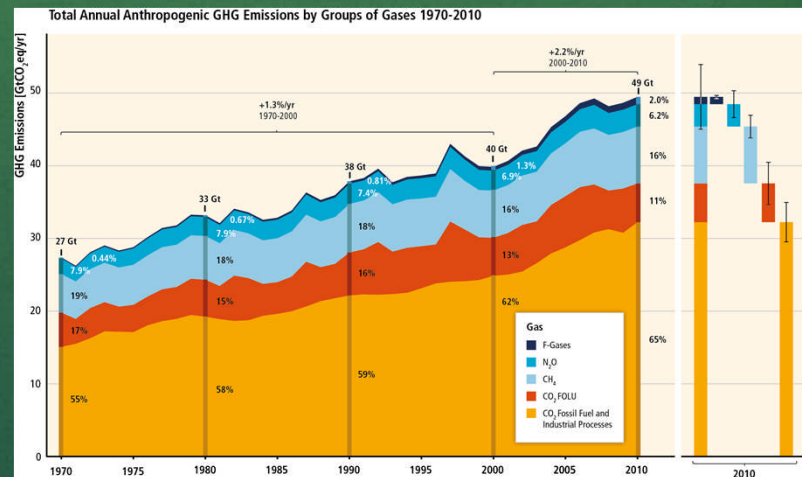
- Carbon emissions must drop 40-70% by 2050 to keep global temp increases below 2C
- Keeping warming below 2C by 2100 means 4x the energy from low or no-carbon sources
- Current government pledges would lead to 3-5C temp increase by 2100
- 2050 is the UN target for a carbon neutral world

# More Stats

World GHG emissions growth:

1970-2000 0.4 GtCO<sub>2</sub> eq/yr

2000-2010 1.0 GtCO<sub>2</sub> eq/yr



GtCO<sub>2</sub> eq/yr = gigatonne of carbon dioxide equivalent year



# Can We Do This?

- Goal
  - Significant reduction in GHG emissions by 2050
  - Carbon neutral by 2100

The estimated cost is 1-4% of worldwide growth in 2030  
2-6% of worldwide growth in 2050

This is before any benefits are added back

Doable?