



# **The Emissions Gap Report 2014**

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# We have agreed to a global temperature limit

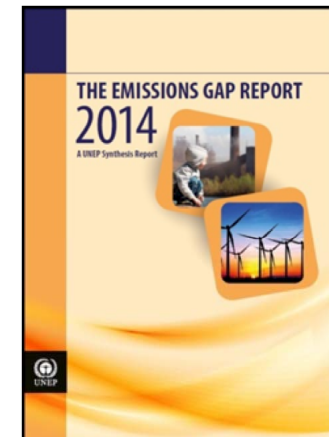
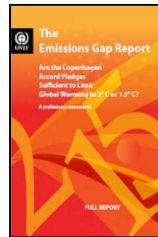
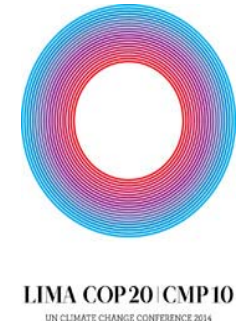
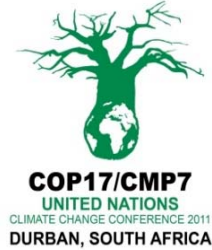
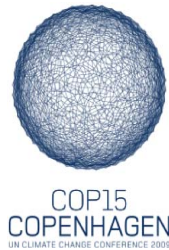
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## The Two Degree Target

Copenhagen Accord (2009) &  
Cancun Agreement (2010)



# UNEP Emissions Gap Reports evaluate if we are on track to 2 °C



This project is part of the International Climate Initiative. The Federal Ministry for the Environment, Nature Conservation and Nuclear Safety supports this initiative on the basis of a decision adopted by the German Bundestag.

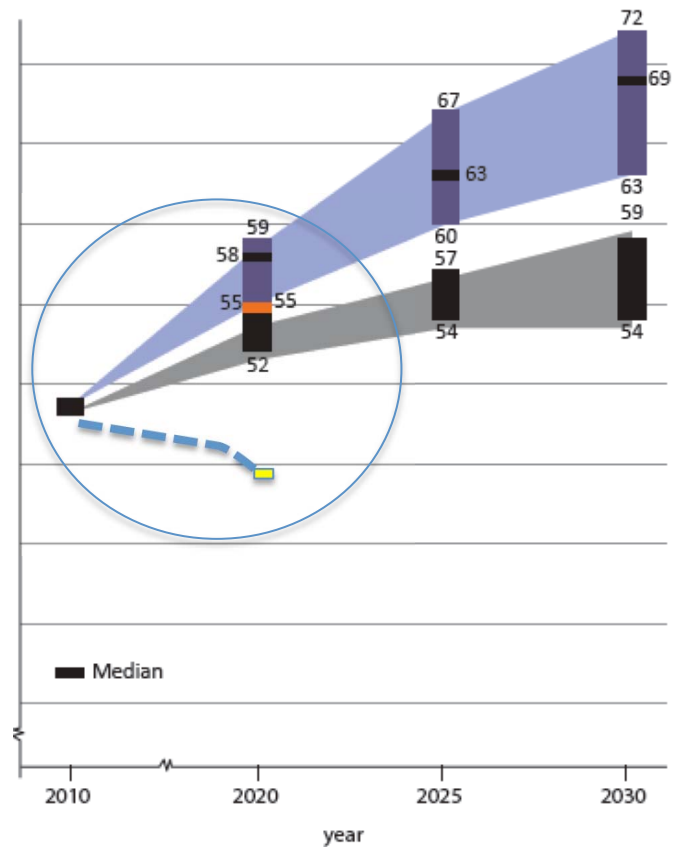
Supported by:



Federal Ministry for the Environment, Nature Conservation and Nuclear Safety

# Are we on track?

- Copenhagen pledges for 2020: 52-54 GtCO<sub>2</sub>eq
- Implementation of pledges: 55 GtCO<sub>2</sub>eq
- With rapid action we should have been at 44 GtCO<sub>2</sub>eq
- Gap only slightly smaller



■ Median

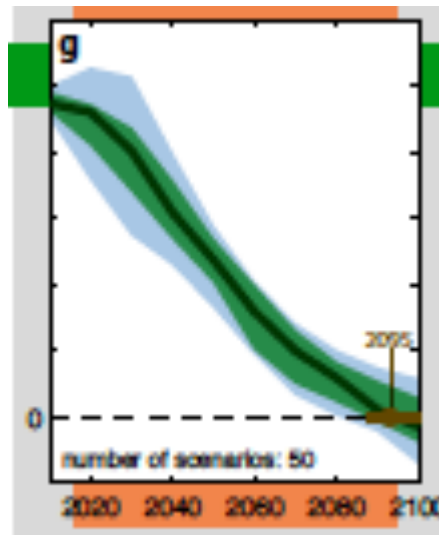
■ Business-as-usual emission levels  
■ Emission levels consistent with range of pledge cases 1-5  
■ Emission levels consistent with 2 °C temperature target (starting fro  
■ Current emissions trajectory

\* Copenhagen Pledges in these scenarios were assumed to result in a range of 52 (50-53) Gt CO<sub>2</sub> This is lower than the current pledge assessment for 2020.

# New scenarios

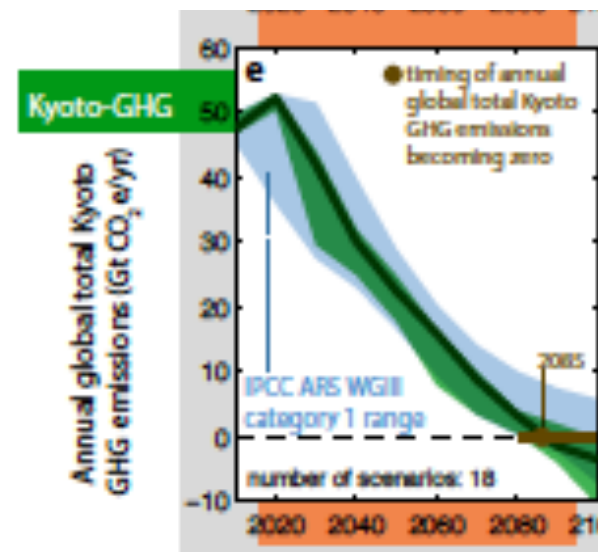
## Concerted action from 2010

- Can be done without negative emissions

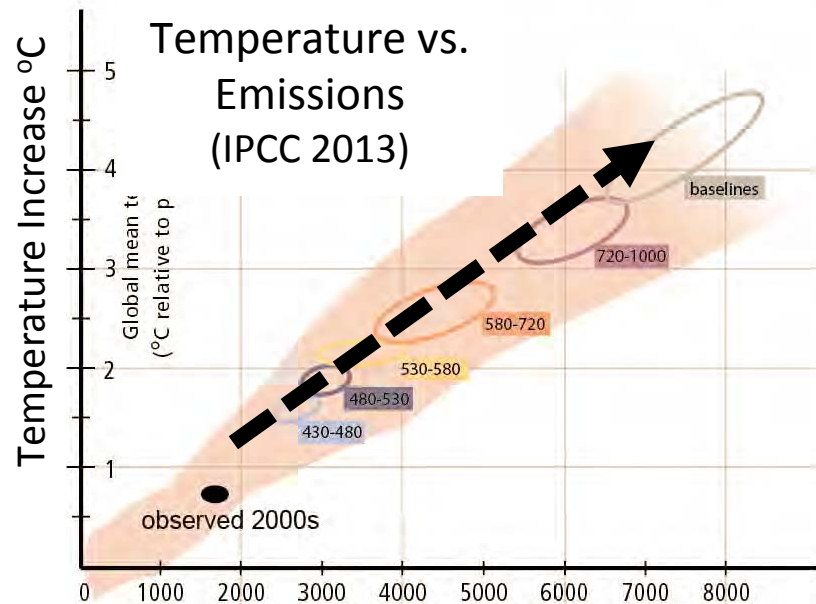


## Concerted action from 2020

- Higher cost
- Negative emissions needed
- Higher risks



# The CO<sub>2</sub> emissions budget



Cumulative CO<sub>2</sub> Emissions since 1870(Gt CO<sub>2</sub>/yr)

**Increase in global temperature  
is  
proportional to cumulative emissions**

## The Emissions “Budget” for 2° C (IPCC)

Total budget  $\approx$  2900 Gt CO<sub>2</sub>

Used up to now  $\approx$  1900 Gt CO<sub>2</sub>

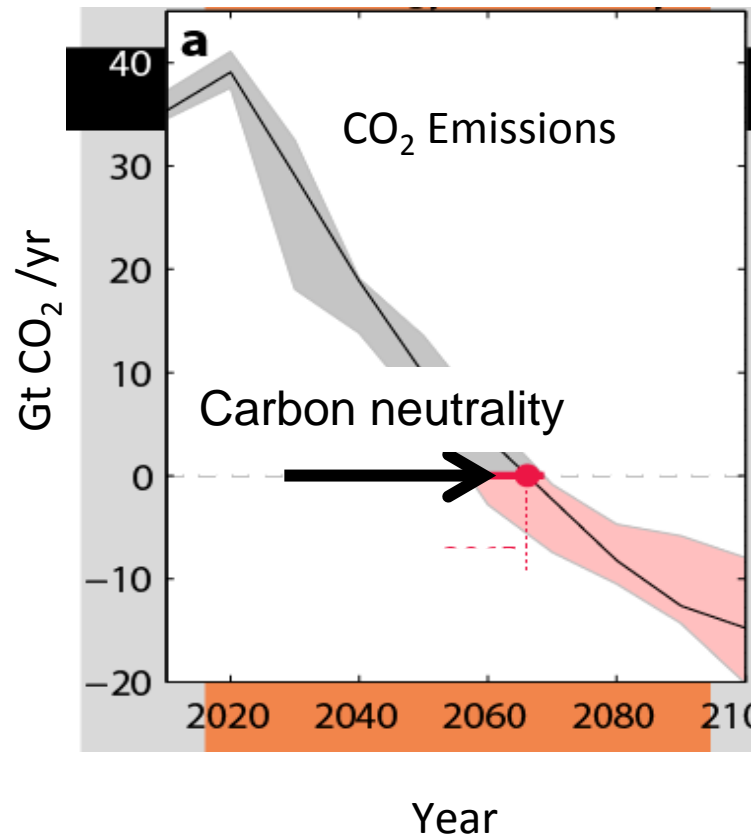
Remaining  $\approx$  1000 Gt CO<sub>2</sub>



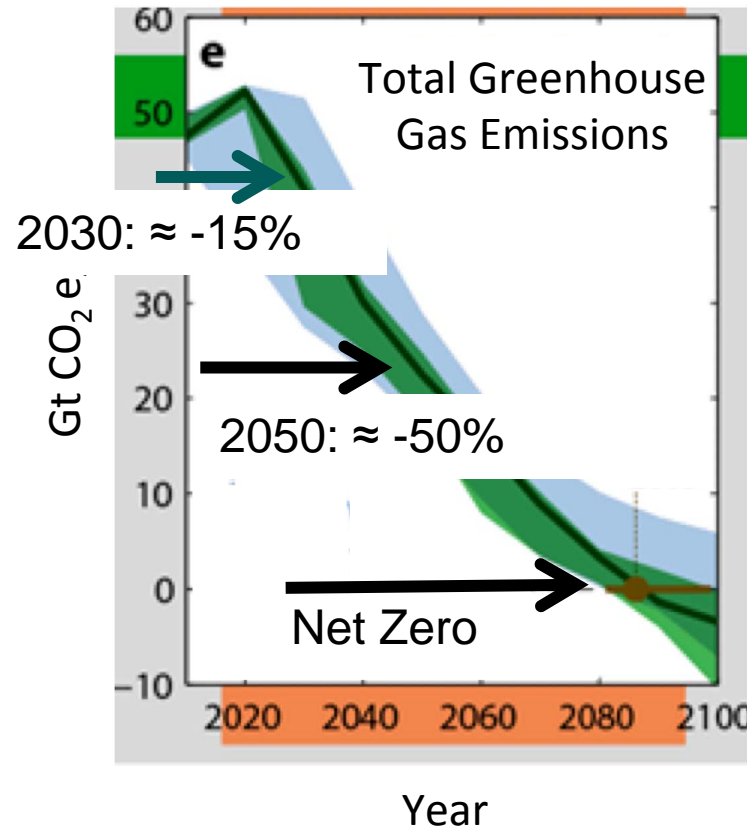
At current rate of emissions  
( $\approx$  40 Gt CO<sub>2</sub> /yr)  $\pm$  25 years!

# How to spend the emissions budget for 2° C?

## Global emission milestones



Net Zero CO<sub>2</sub> Emissions ≈  
2055-2070



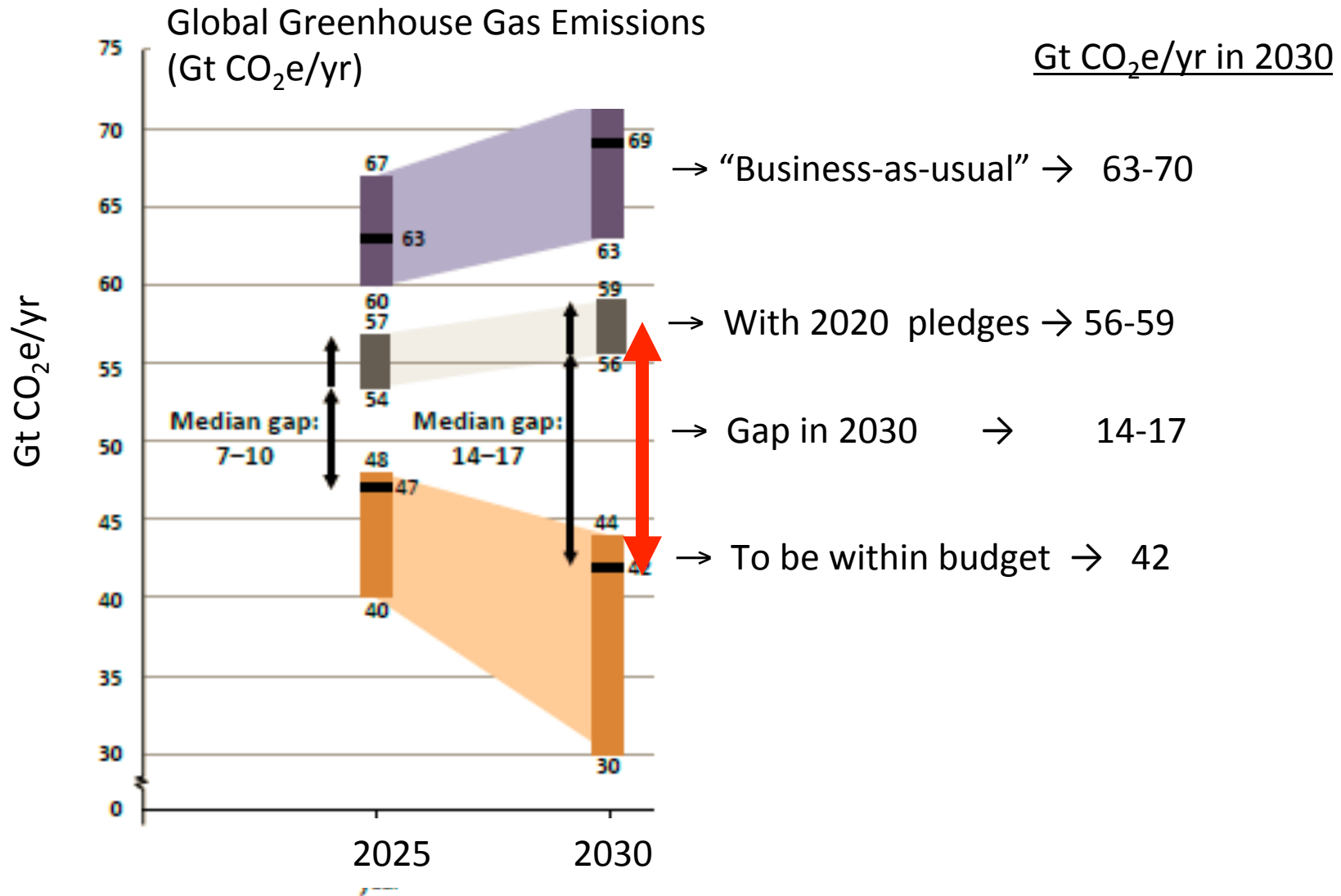
Net Zero Total Greenhouse Gas  
Emissions ≈ 2080-2100

# Negative emissions

- After delayed action: we cannot avoid negative emissions
- Can be realised through:
  - Stopping deforestation/large scale afforestation
  - Biomass fired power plants with CCS



# Looking beyond 2020: the 2030 gap



# What is the impact of recent announcements?

## New pledges

- EU: at least 40% below 1990 in 2030
- US: 26-28% below 2005 in 2025
- China: peak in emissions not later than 2030; 20% of energy from renewables

## Impact

- Represents about 50% of global emissions
- Analysis being performed (difficult to interpret Chinese pledge)
- Not enough to close the gap, even if others take similar action

Back-up

## How to close the gap?

### Integrate climate action into sustainable development

- Implementing SE4all targets would go a long way to bringing us back on a 2 °C trajectory
- Policies and measures to reduce GHG emissions have multiple benefits for development.
- Replicating and scaling-up proven policies in other countries has a huge potential for GHG emission reduction
- International Cooperative Initiatives can help raise the ambition level of climate action

# Energy efficiency can promote development, while contributing to emission reduction

- Energy efficiency has multiple benefits:
  - Improving health through reducing air pollution and more comfortable buildings
  - More economic activity, jobs, competitiveness, reduced energy costs, lower energy imports
  - Better access to modern energy and alleviating energy poverty
  - Reducing GHG emissions
- Proven policies and measures can overcome barriers to energy efficiency improvement
  - buildings, appliances and lighting,
  - industry,
  - transport
  - energy supply

# How to close the gap? Renewable energy

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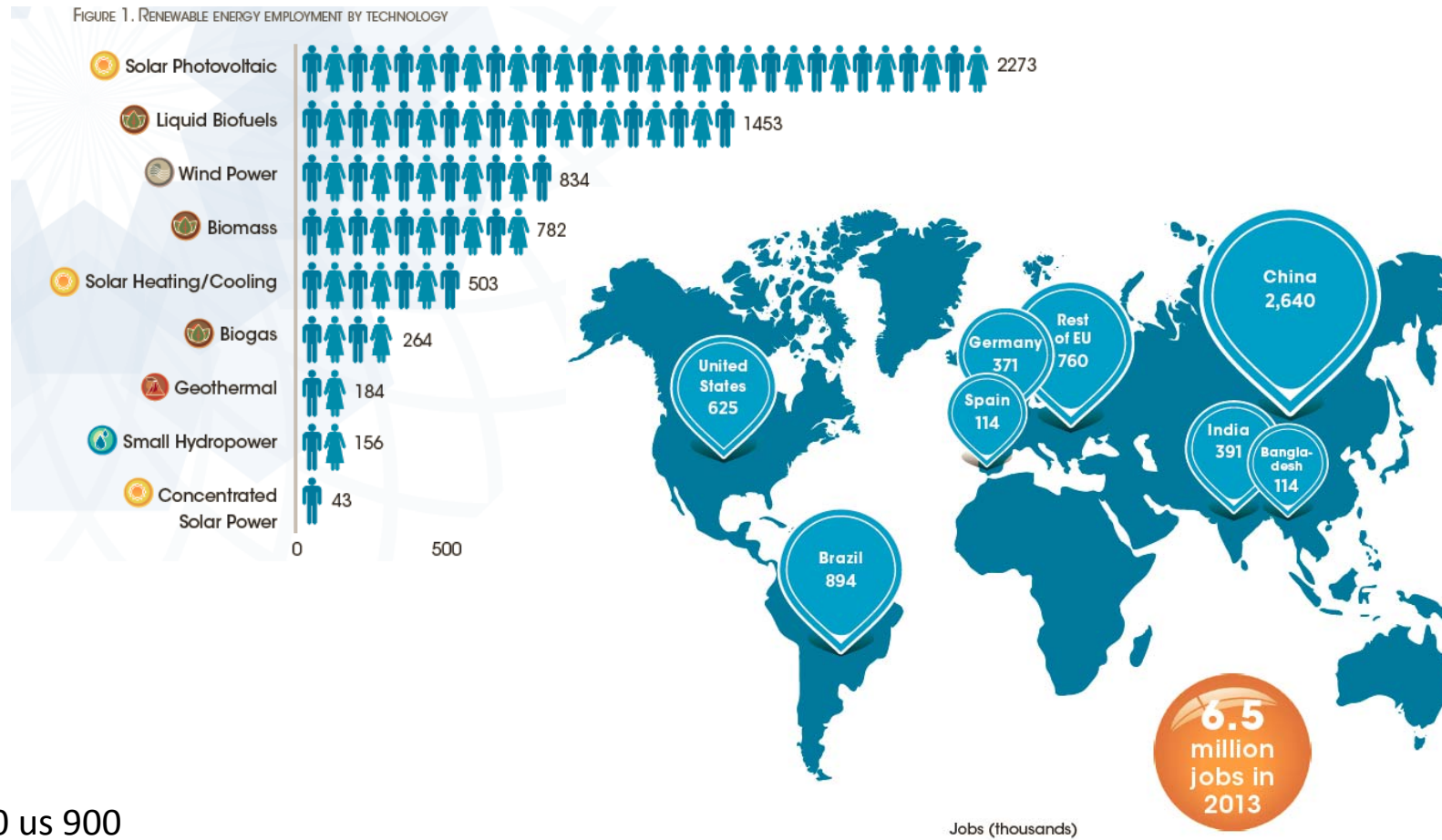
Emission reduction potential (2030)  
= 5 Gt CO<sub>2</sub> e

Investments (2012)  $\approx$  US\$ 250 billion /yr



# Renewable energy = jobs

2013: 6.5 Million (IRENA)



600 us 900

b

400 i

# How to close the gap? Improve energy efficiency

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Investments (2012)  $\approx$  US\$ 360 billion /yr



- Building codes
- Vehicle performance standards
  - Appliance & lighting standards and labels





# Energy efficiency = Multiple benefits

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## Reduced greenhouse gas emissions

Emission reduction potential (2030) 3 to 7 Gt CO<sub>2</sub> e/yr



## Reduced air pollution & health threat:

100,000 premature deaths/year avoided by 2030 in USA, EU, India, Brazil, China and Mexico



**Economic stimulus:** Up to 19 jobs per million euros invested



**Greater access to energy.** Lower energy costs, more access

# Summing Up

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A lot of bottom up climate action. Does it add up?

We know the global emissions budget for staying within our climate target

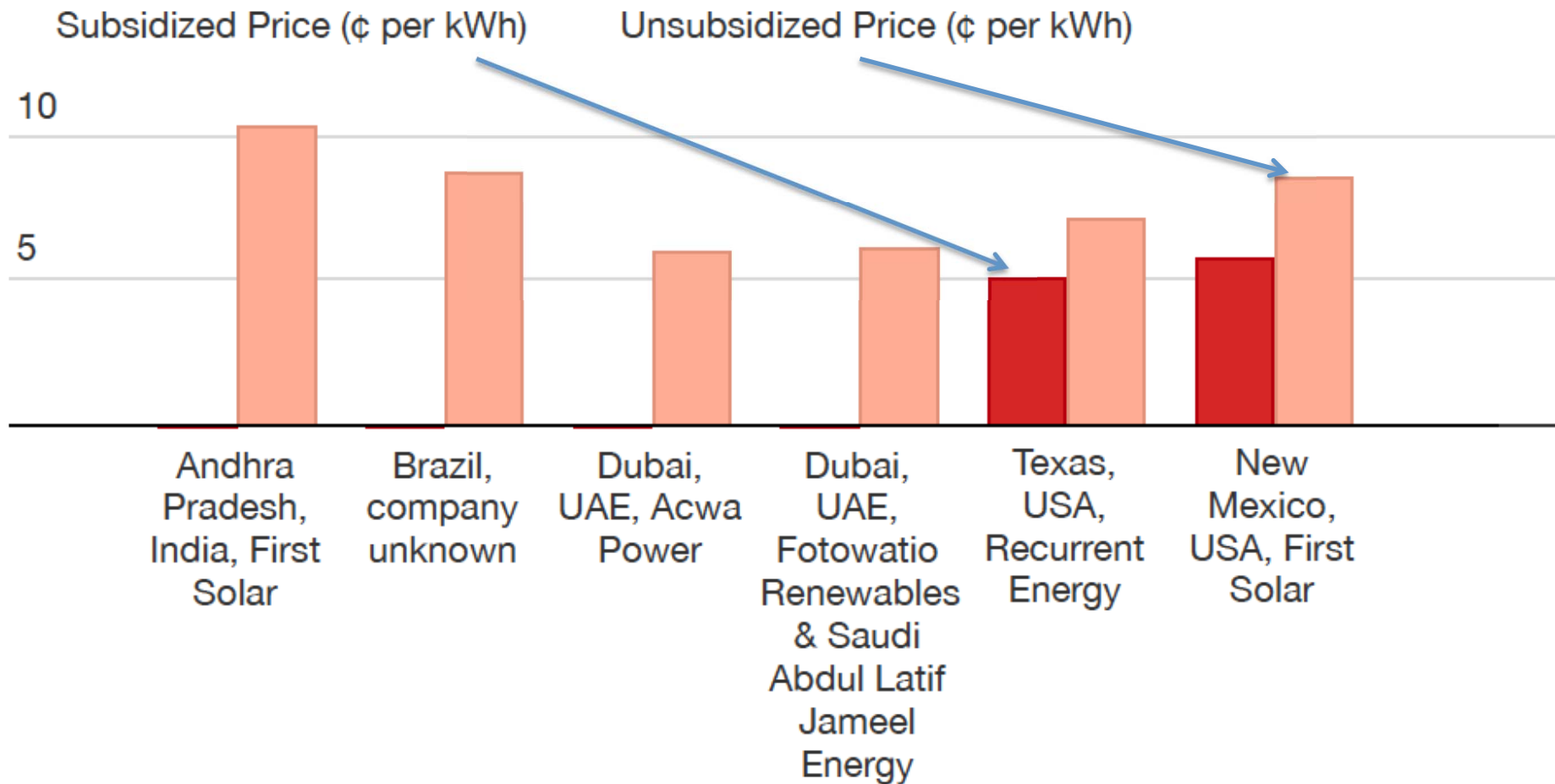
→ Global emission milestones:

- Soon: Global emissions have to peak
- By 2050: Global emissions at least -50%
- Second half of the century ... carbon neutrality & net zero total greenhouse gas emissions

A big challenge, but can be done & good for sustainable development

# Low Solar Bids (2013-2014)

Prices agreed to under 20- and 25-year power purchase agreements.



Source: <https://cleantechnica.com/2014/11/29/dubai-shatters-solar-tariff-records-worldwide-lowest-ever/>