

# Energy and Climate Change

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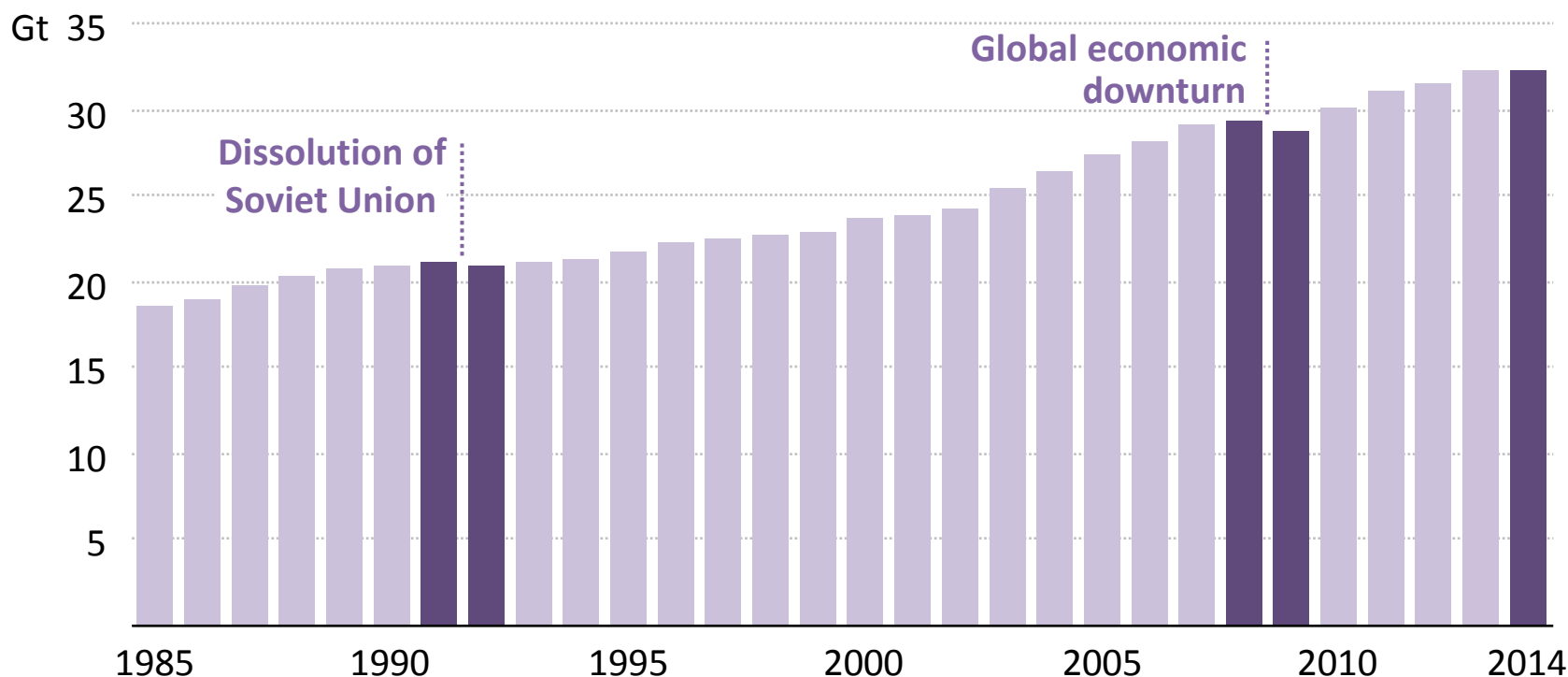
**7 July 2015**

# Energy & climate change today

- **A major milestone in efforts to combat climate change is fast approaching – COP21 in Paris in December 2015**
- **Momentum is building:**
  - *Historic US-China joint announcement; EU 2030 targets agreed*
  - *Developed & developing countries are putting forward new pledges to reduce emissions*
  - *Many energy companies & investors are starting to engage*
- **Energy production & use accounts for two-thirds of global greenhouse-gas emissions**
- **Energy sector must cut emissions, while powering economic growth, boosting energy security & increasing energy access**

# Energy emissions stall but economic engine keeps running

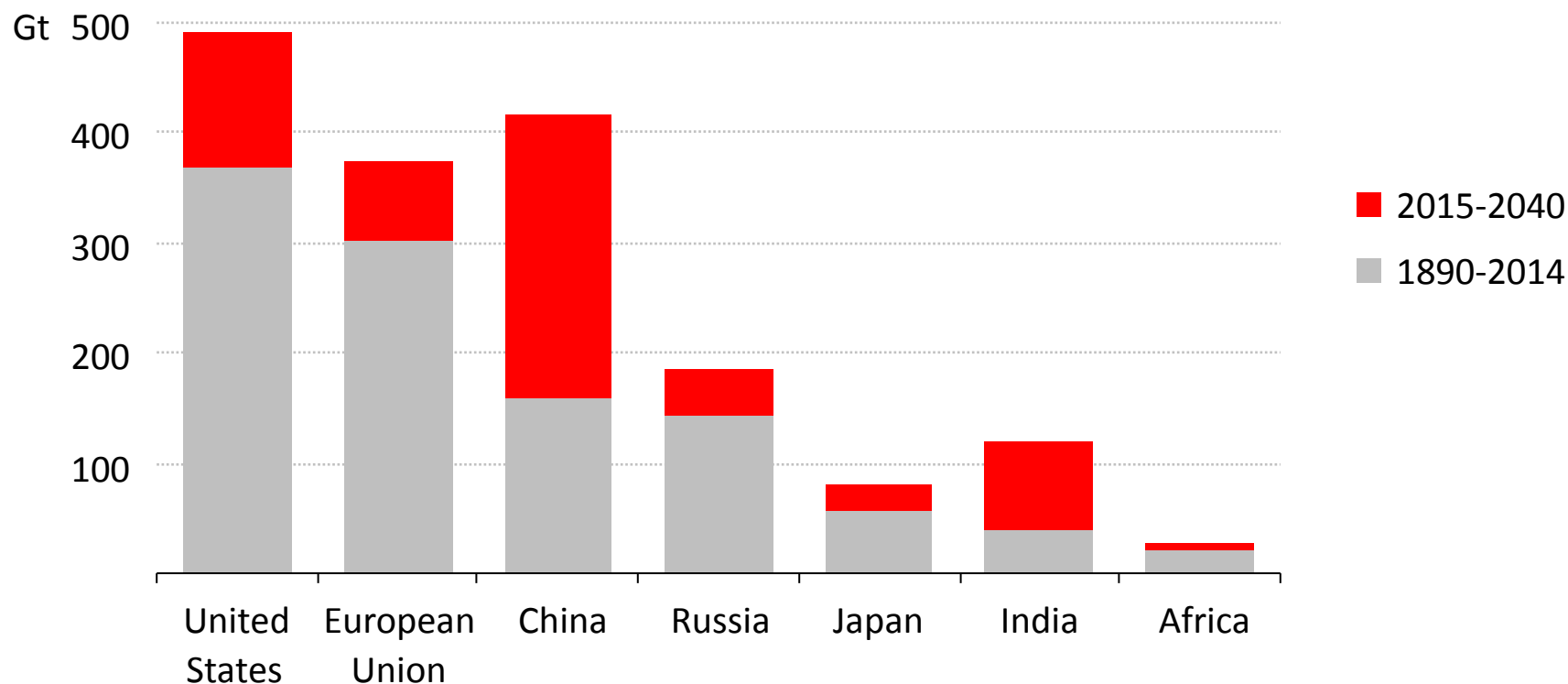
## Global energy-related CO<sub>2</sub> emissions



***For the first time, energy-related CO<sub>2</sub> emissions stalled despite the global economy expanding by 3%***

# Emissions burden moves over time

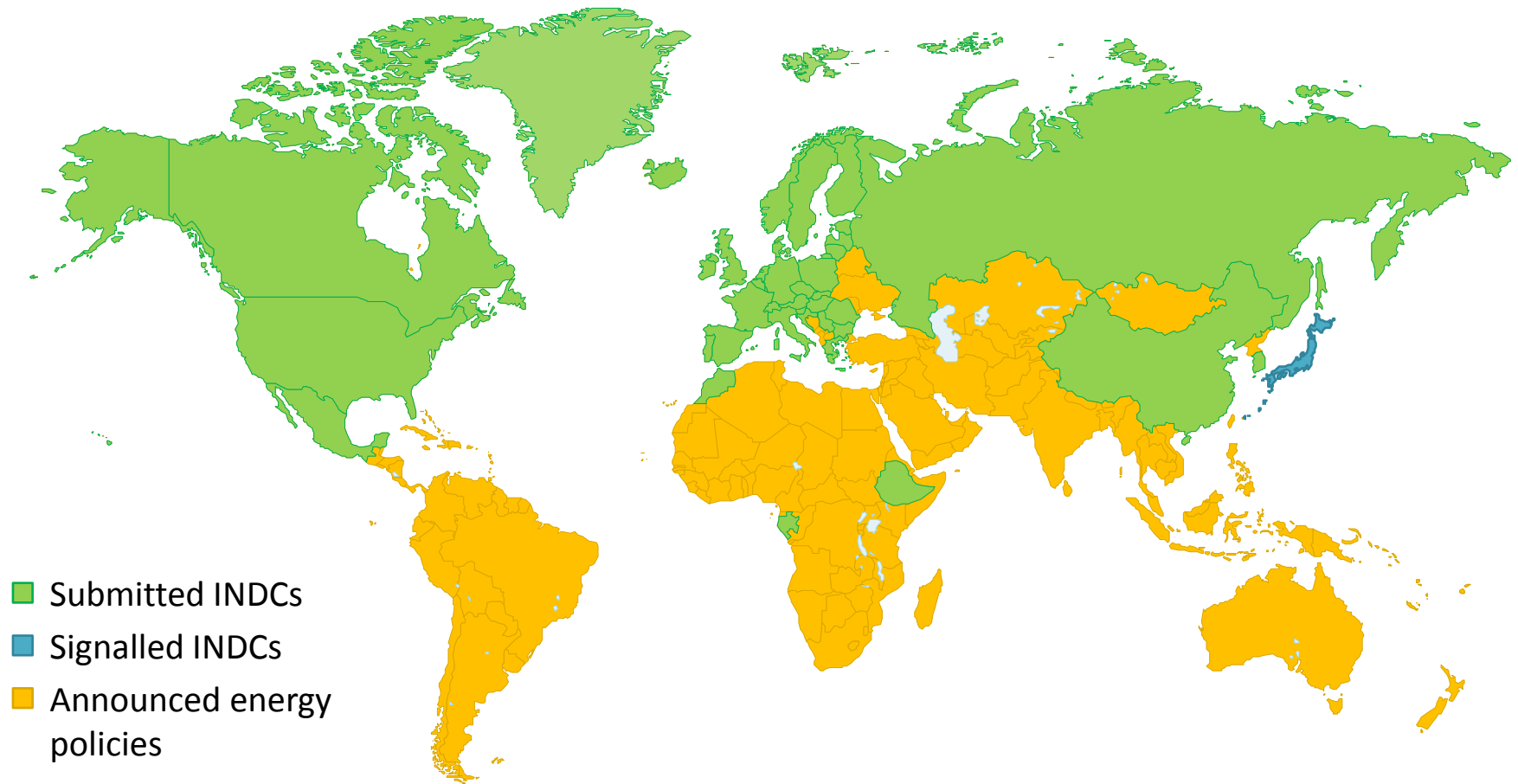
## Cumulative energy-related CO<sub>2</sub> emissions by region



*Past emissions are important, although the source of emissions shifts with changes in the global economy*

# National pledges build towards a global agreement

WEO Special  
Report on  
**Energy &  
Climate  
Change**



***Submitted & signalled INDCs cover two-thirds of energy-related GHG emissions, with implications for future energy & emissions trends***

# Climate pledges shift the energy sector

- One-quarter of the world's energy supply is low carbon in 2030; energy intensity improves three-times faster than the last decade
- Renewables reach nearly 60% of new capacity additions in the power sector; two-thirds of additions are in China, EU, US & India
- Natural gas is the only fossil-fuel that increases its share of the global energy mix
- Total coal demand in the US, Europe & Japan contracts by 45%, while the growth in India's coal use slows by one-quarter
- Climate pledges for COP21 are the right first step towards meeting the climate goal



# What does the energy sector need from COP21?

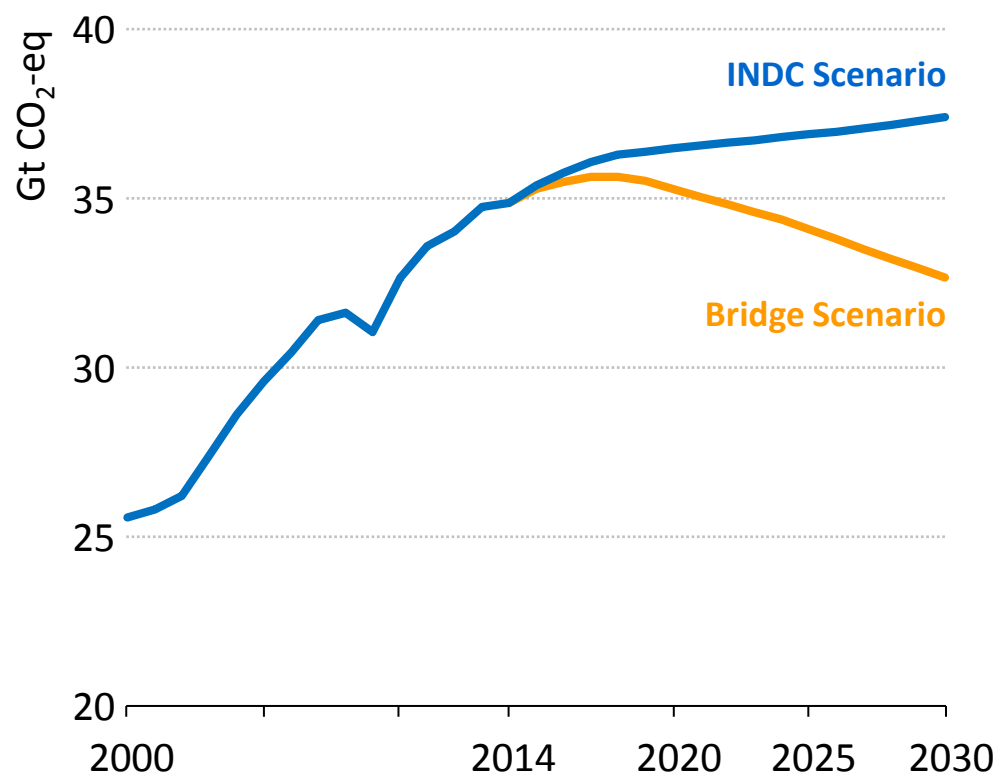
## ■ The IEA proposal for COP21:

1. **Peak in emissions** – set the conditions which will achieve an early peak in global energy-related emissions
2. **Five-year revision** – review contributions regularly, to test the scope to lift the level of ambition
3. **Lock in the vision** – translate the established climate goal into a collective long-term emissions goal
4. **Track the transition** – establish a process for tracking energy sector achievements

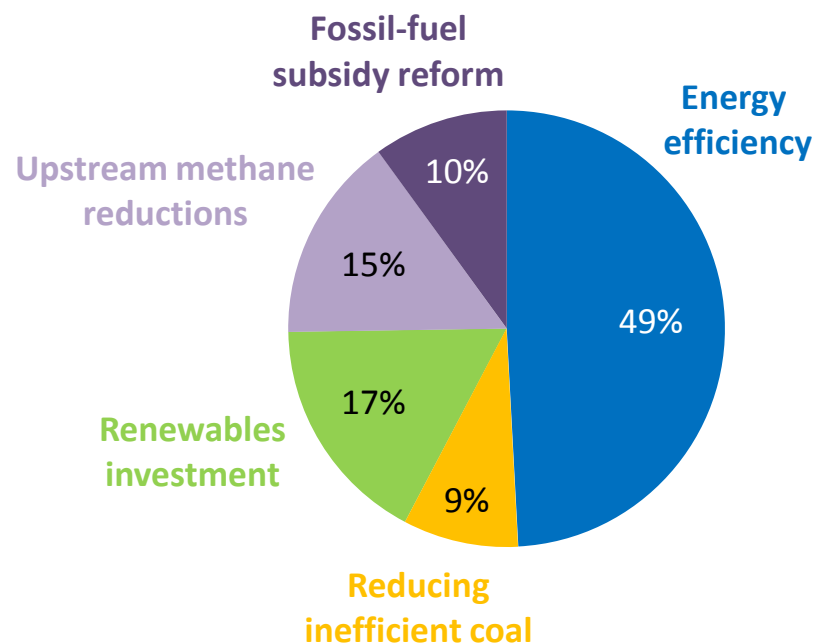
# 1. Peak in emissions:

## IEA strategy to raise climate ambition

### Global energy-related GHG emissions



### Savings by measure, 2030



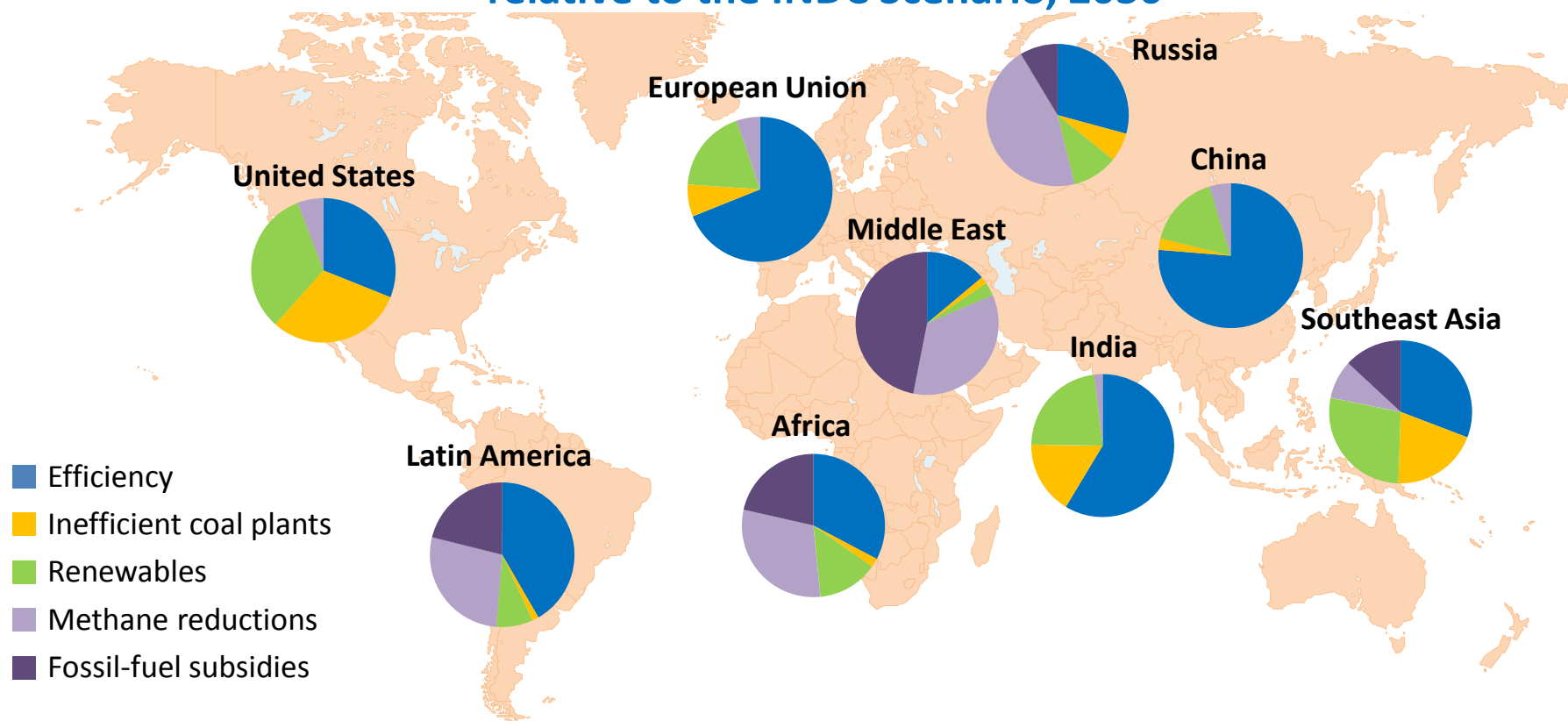
**Five measures – shown in a “Bridge Scenario” – achieve a peak in emissions around 2020, using only proven technologies & without harming economic growth**



# 1. Peak in emissions:

Bridging strategy is flexible across regions

**GHG emissions reduction by measure in the Bridge Scenario,  
relative to the INDC Scenario, 2030**

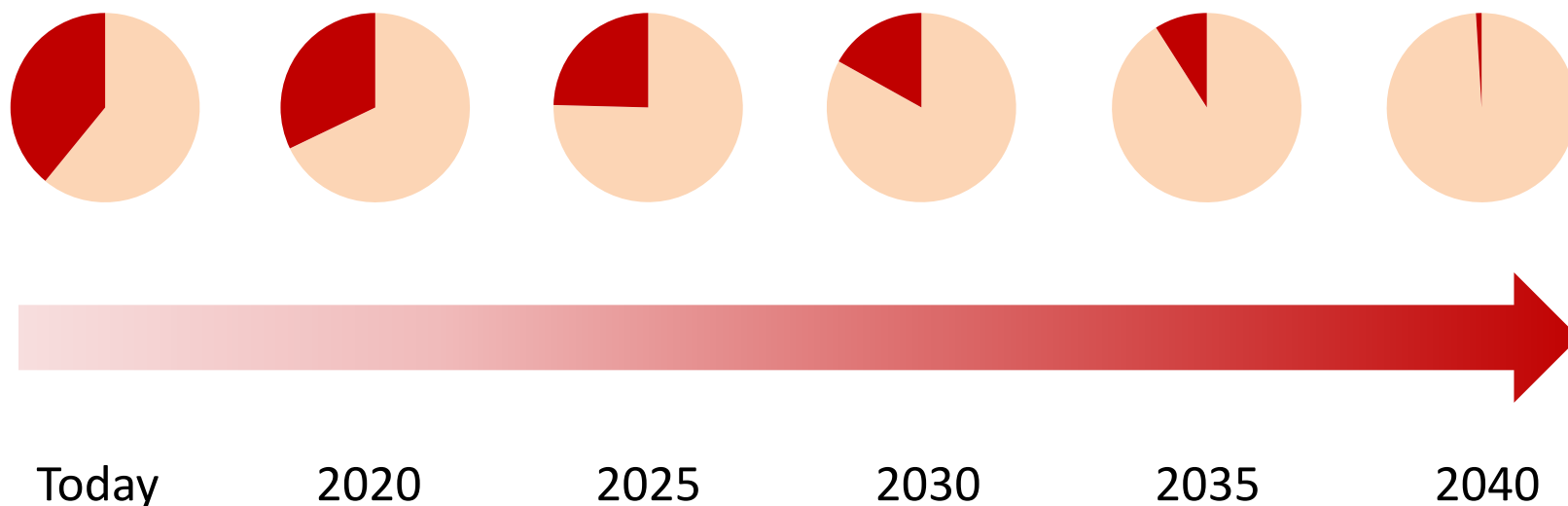


***The measures in the Bridge Scenario apply flexibly across regions, with energy efficiency and renewables as key measures worldwide***

## 2. Five-year revision:

World's carbon budget is shrinking

World's remaining carbon budget

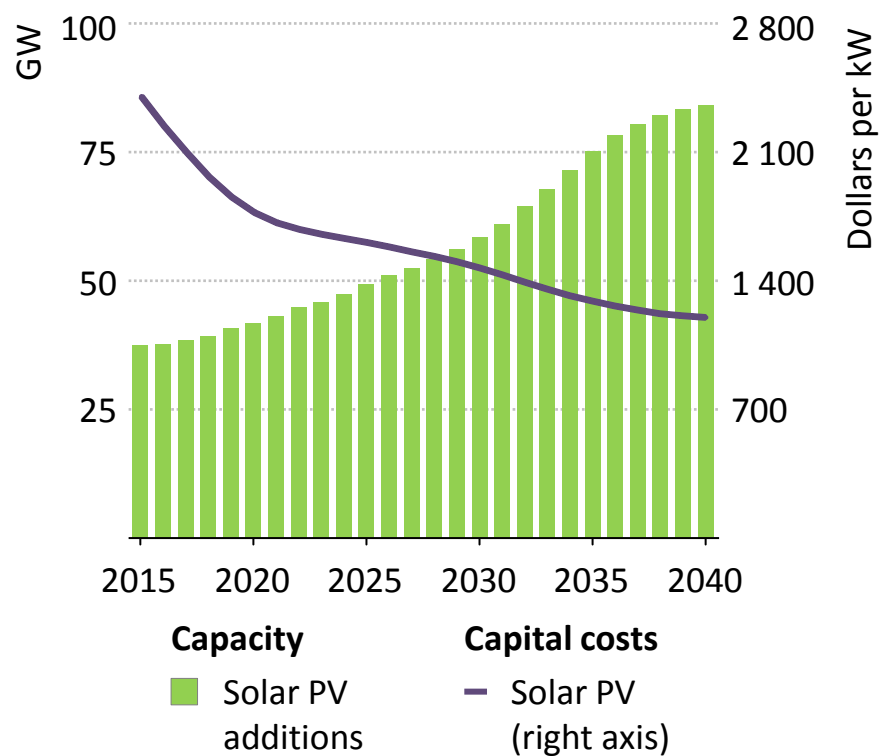


***A five-year review cycle would enable pledges to keep pace with energy sector innovation; building ambition before the carbon budget is consumed***

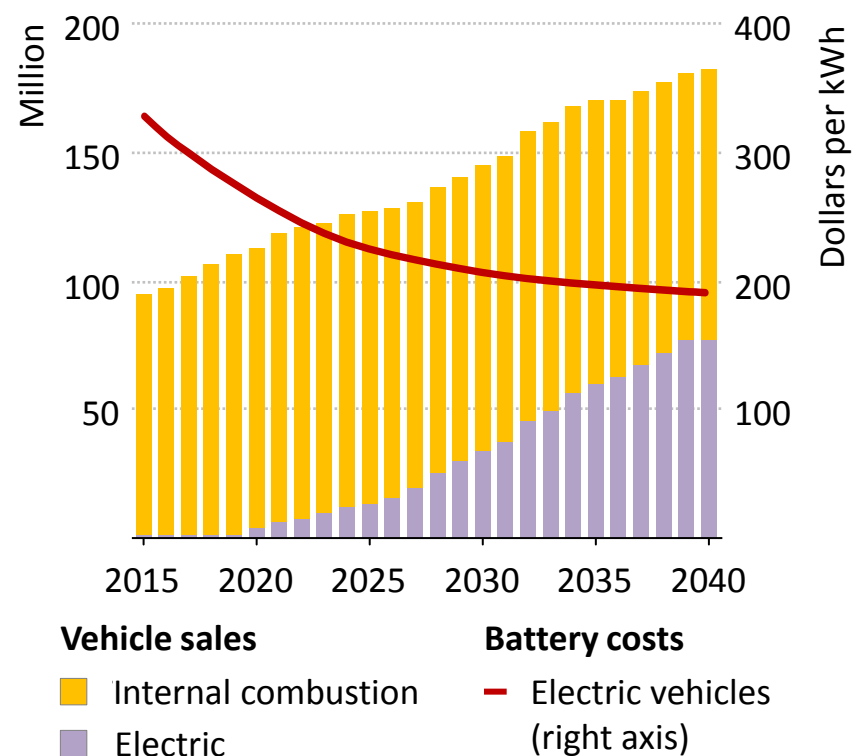
### 3. Lock in the vision:

What more does it take for 2 °C?

Cost reductions & deployment of  
all solar PV



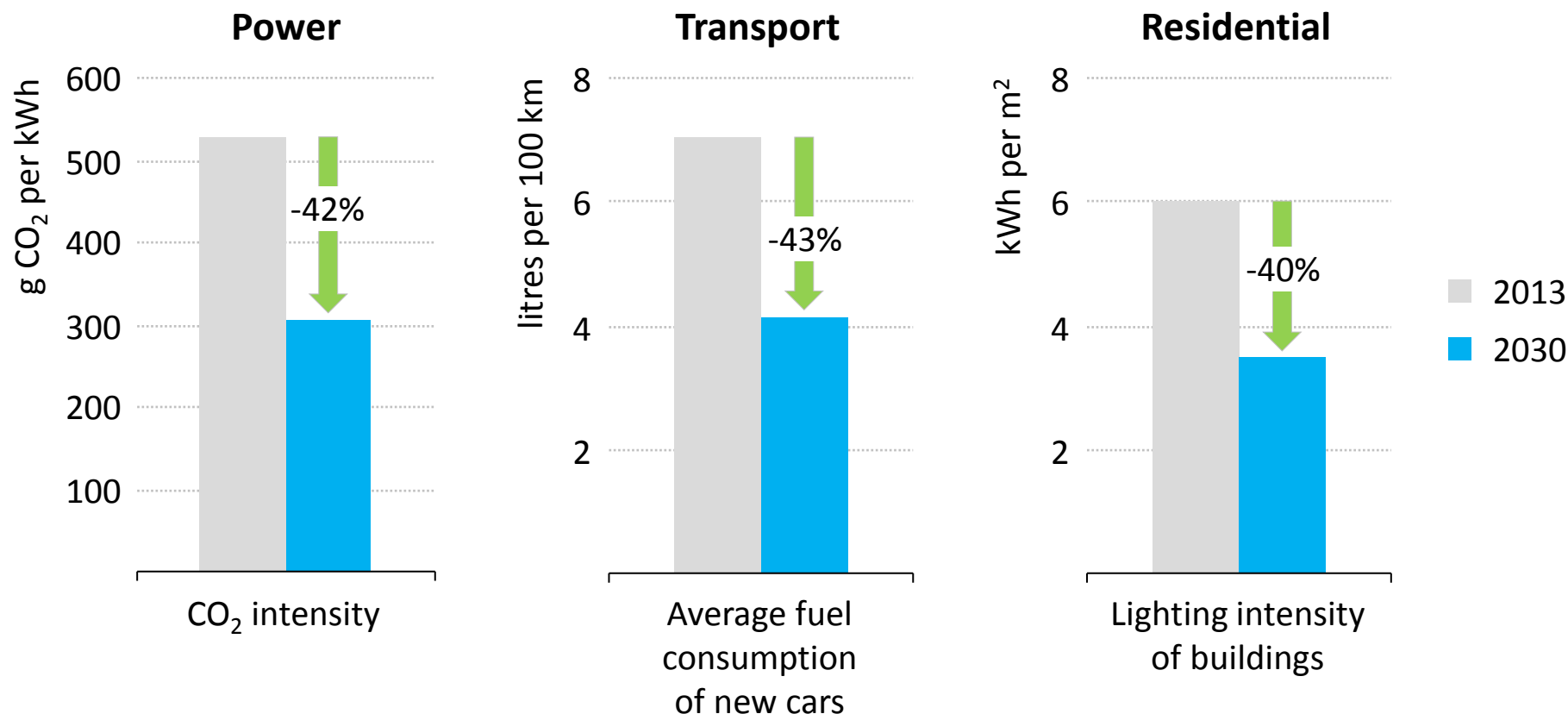
Cost reductions & deployment of  
electric vehicles



***An emissions goal would give greater clarity & certainty to the energy sector, strengthening the case for RD&D investment & technology transfer***

## 4. Track the transition:

Impact of pledges must be monitored



***Energy sector indicators are needed to track the low-carbon transition;  
IEA identifies key metrics to monitor energy sector achievements***

# Conclusions

- Pledges are not yet enough to achieve our climate goal, but are a basis from which to build ambition
- Companies that do not anticipate stronger energy & climate policies risk being at a competitive disadvantage
- For COP21, the IEA proposes four key energy sector outcomes:
  1. Target a near-term peak in emissions
  2. Five-year revision, to test the scope for raising ambition
  3. Lock in the vision by setting a long-term emissions goal
  4. Track the transition in the energy sector
- Climate change will lead the agenda at the IEA's Ministerial meeting on 17-18 November 2015



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[www.worldenergyoutlook.org/energyclimate](http://www.worldenergyoutlook.org/energyclimate)