

Energy and Climate Change

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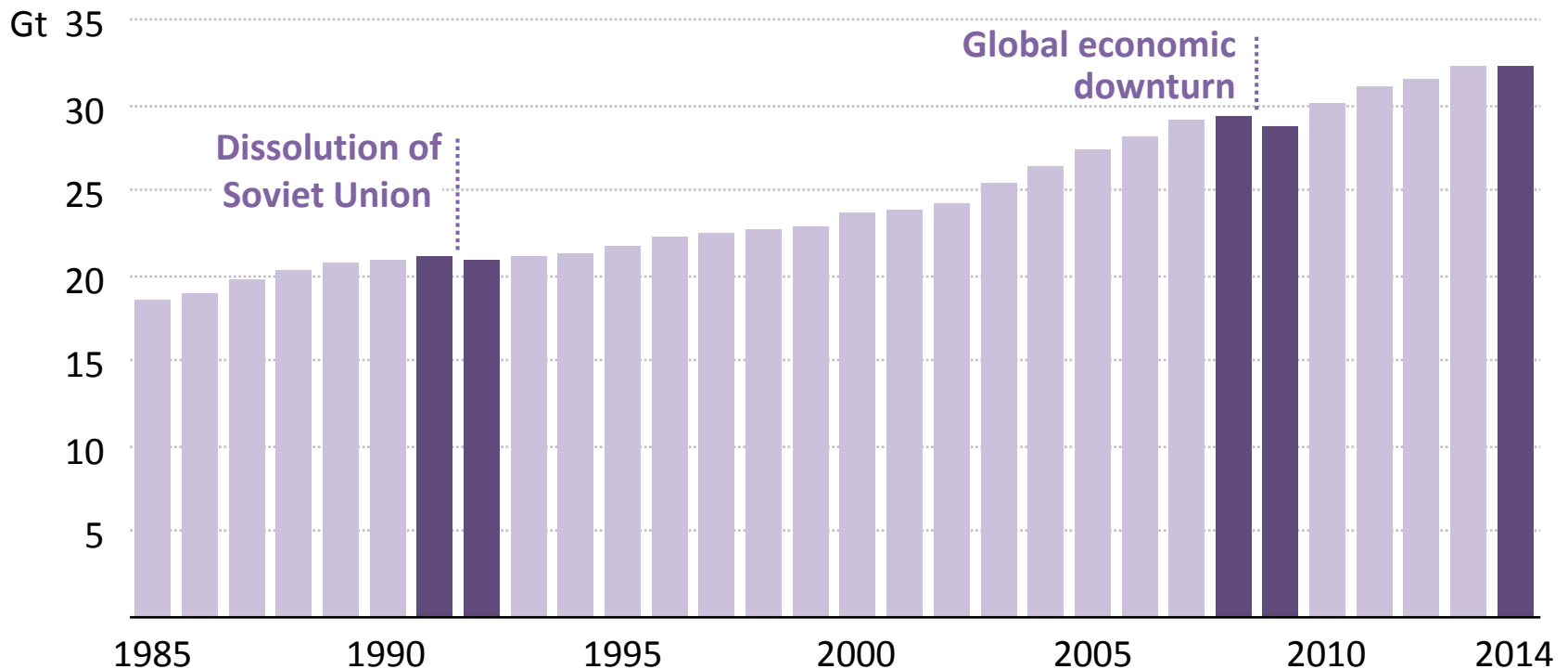
Spanish Energy Club, Madrid, 3 July 2015

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

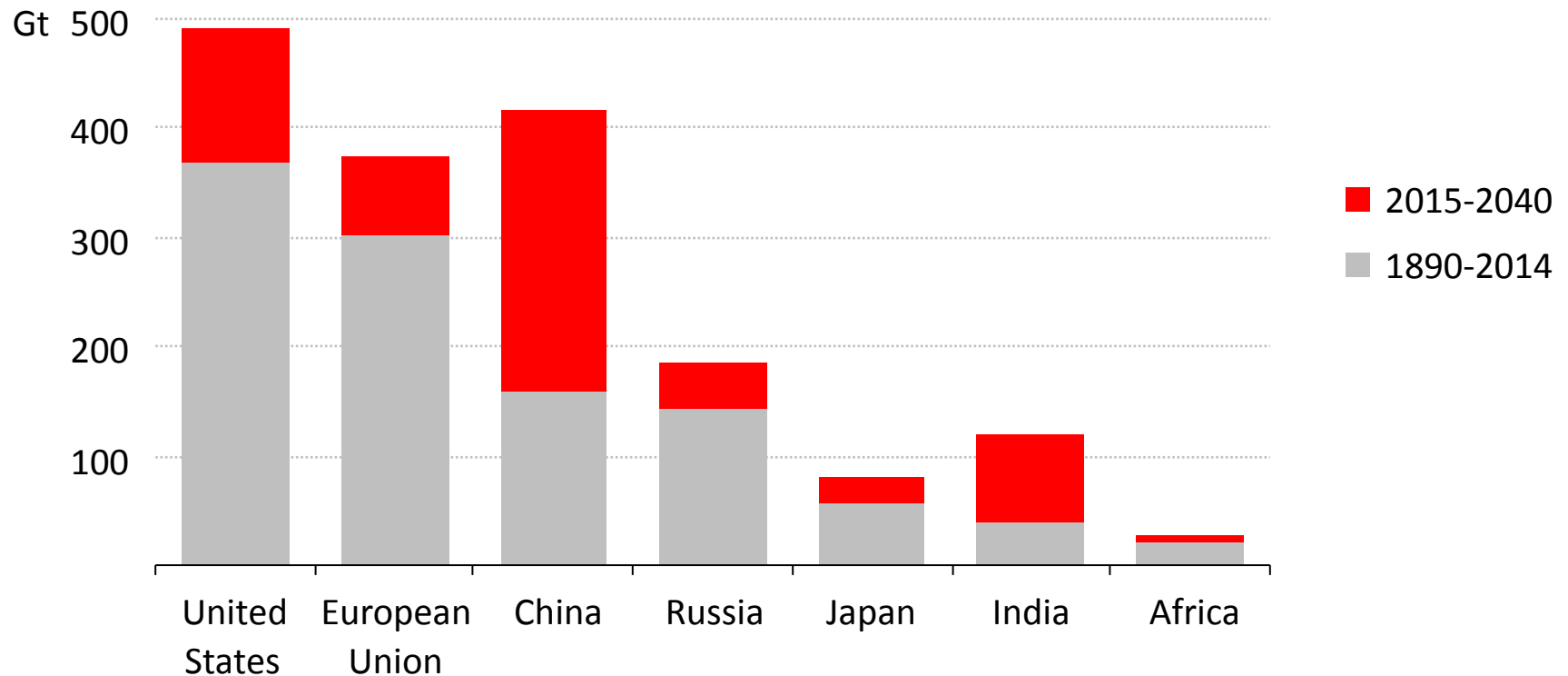
Global energy-related CO₂ emissions



For the first time, energy-related CO₂ emissions stalled despite the global economy expanding by 3%

Emissions burden moves over time

Cumulative energy-related CO₂ emissions by region

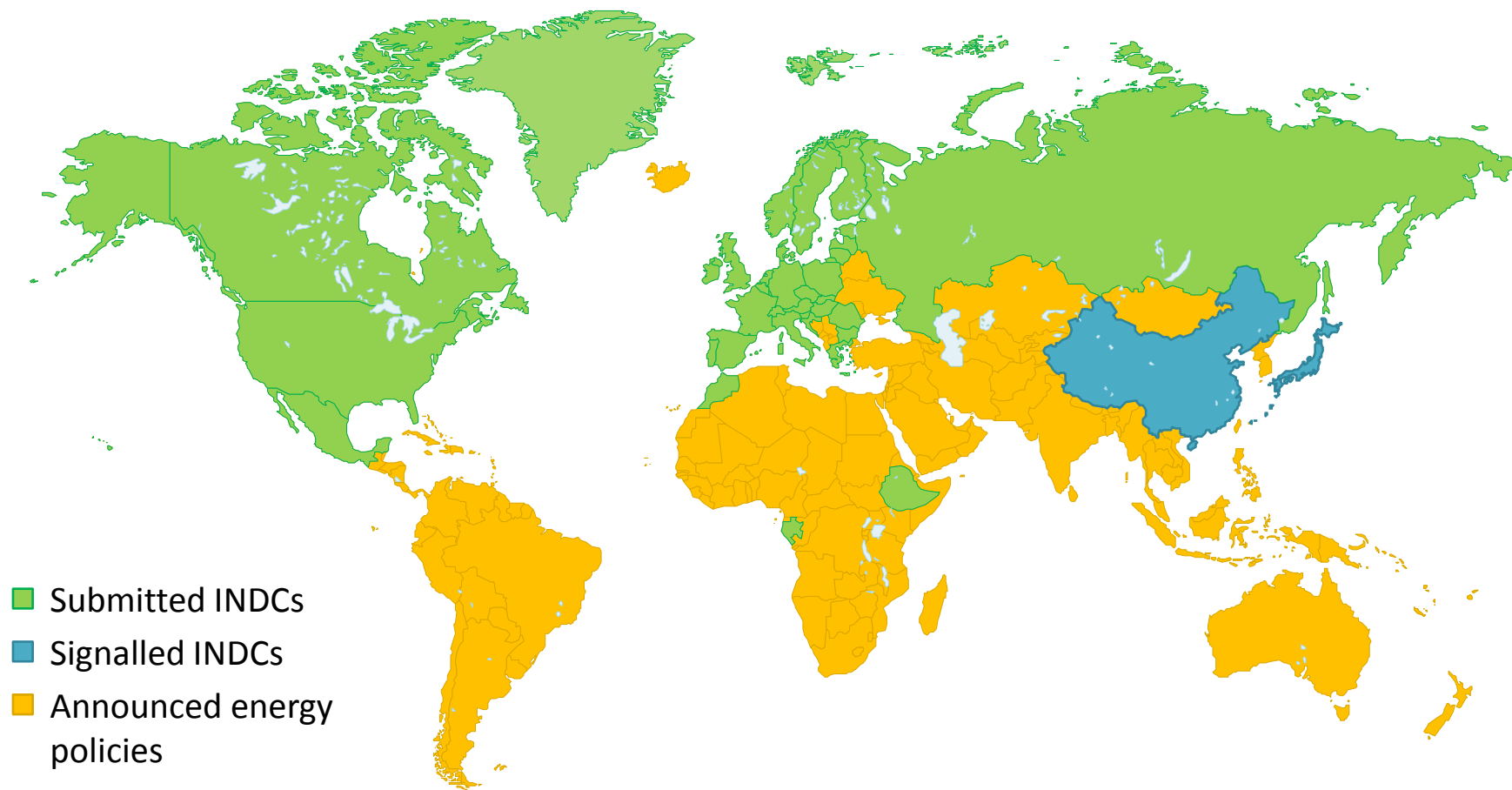


Past emissions are important, although the source of emissions shifts with changes in the global economy

National pledges build towards a global agreement

WEO Special
Report on

Energy &
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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**

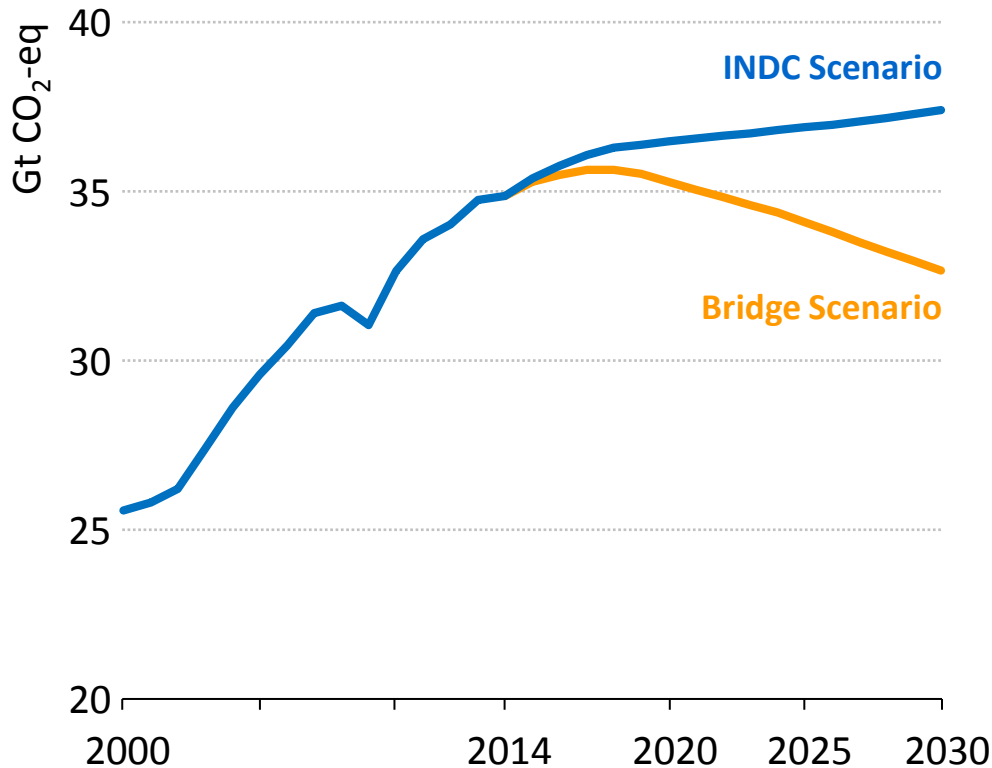
What does the energy sector need from COP21?

■ The IEA proposal for COP21:

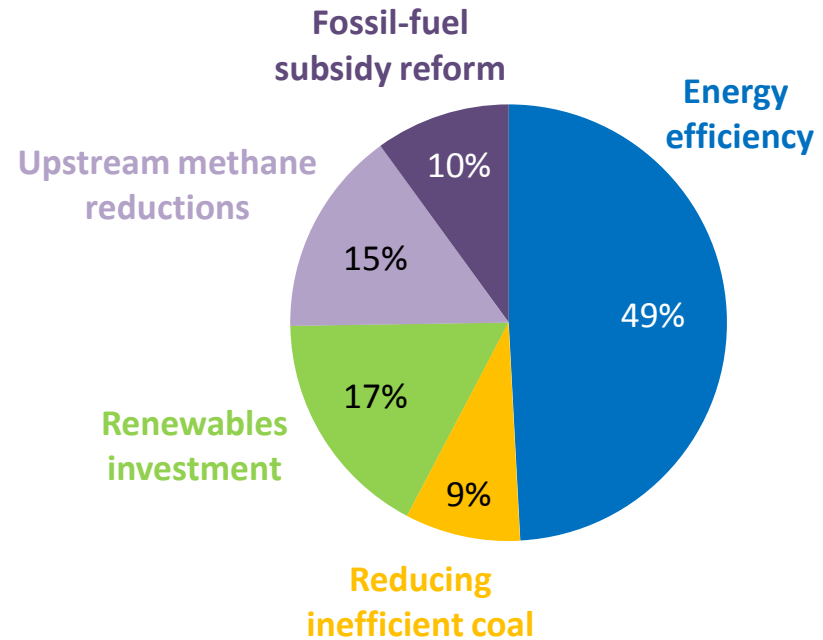
1. *Peak in emissions* – set the conditions which will achieve an early peak in global energy-related emissions
2. *Five-year revision* – review contributions regularly, to test the scope to lift the level of ambition
3. *Lock in the vision* – translate the established climate goal into a collective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

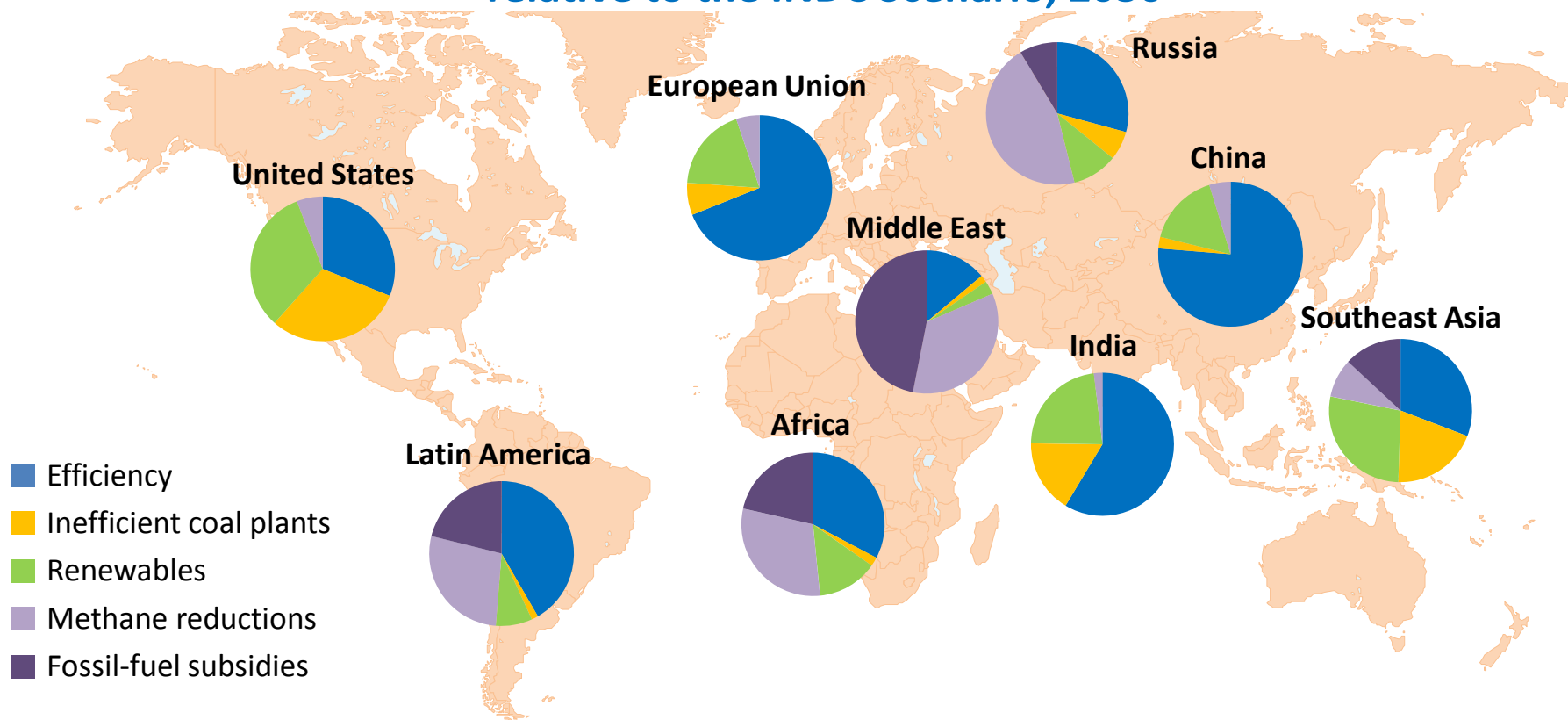


Five measures – shown in a “Bridge Scenario” – achieve a peak in emissions around 2020, using only proven technologies & without harming economic growth

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

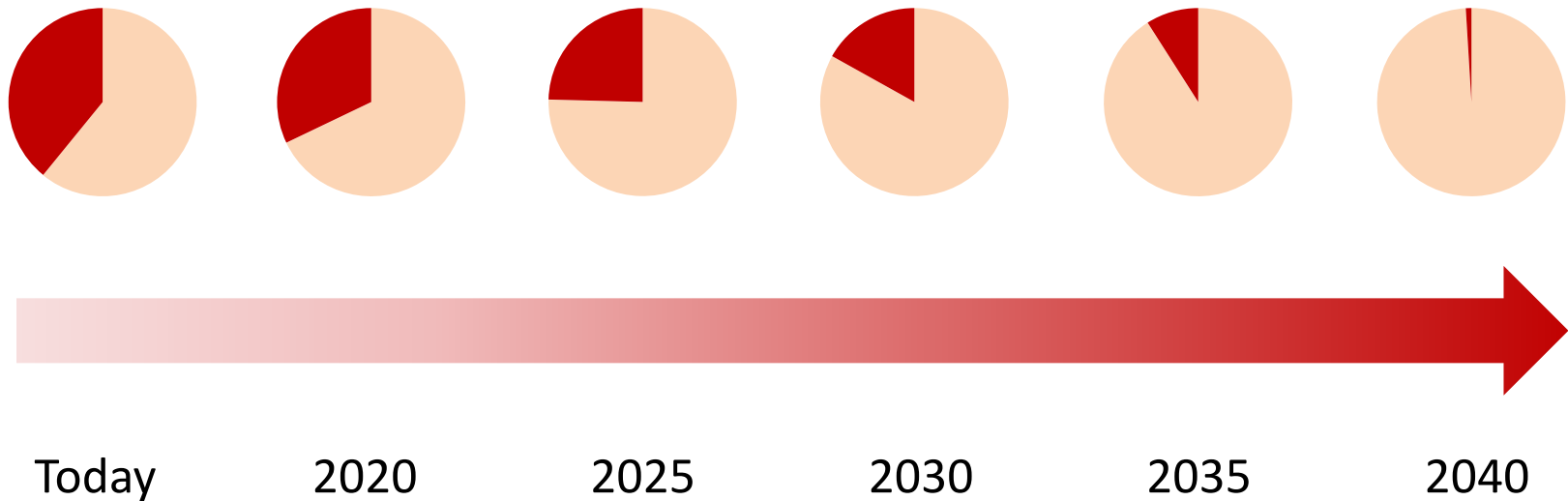


The measures in the Bridge Scenario apply flexibly across regions, with energy efficiency and renewables as key measures worldwide

2. Five-year revision:

World's carbon budget is shrinking

World's remaining carbon budget

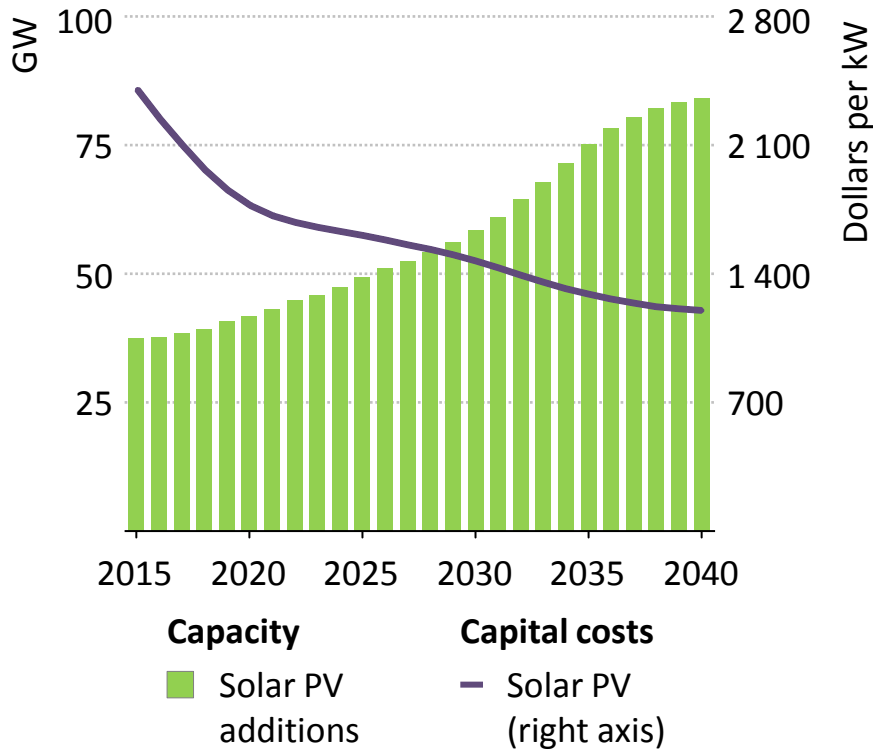


A five-year review cycle would enable pledges to keep pace with energy sector innovation; building ambition before the carbon budget is consumed

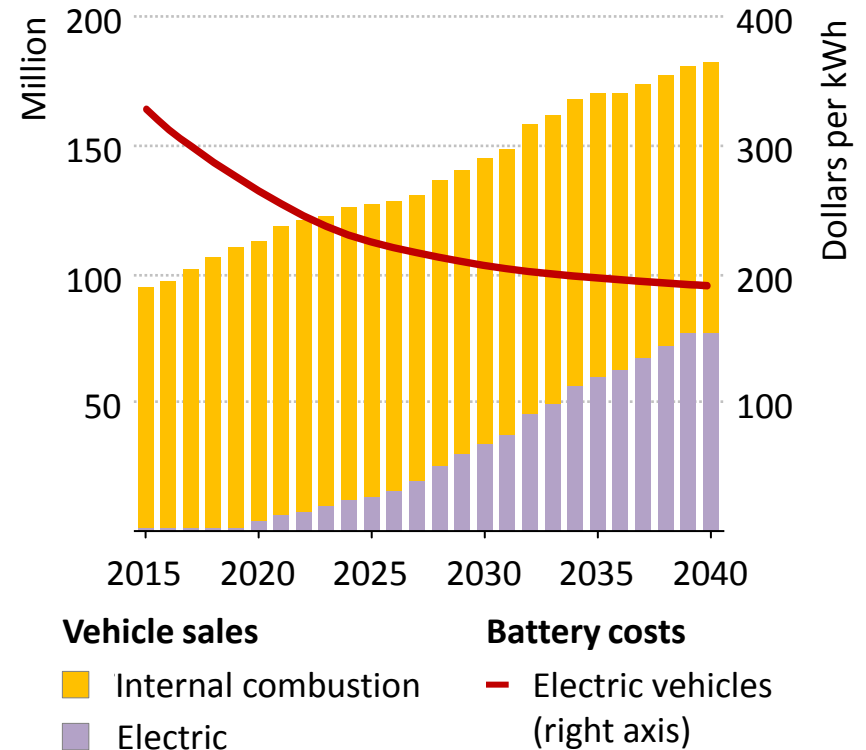
3. Lock in the vision:

What more does it take for 2 °C?

Cost reductions & deployment of all solar PV



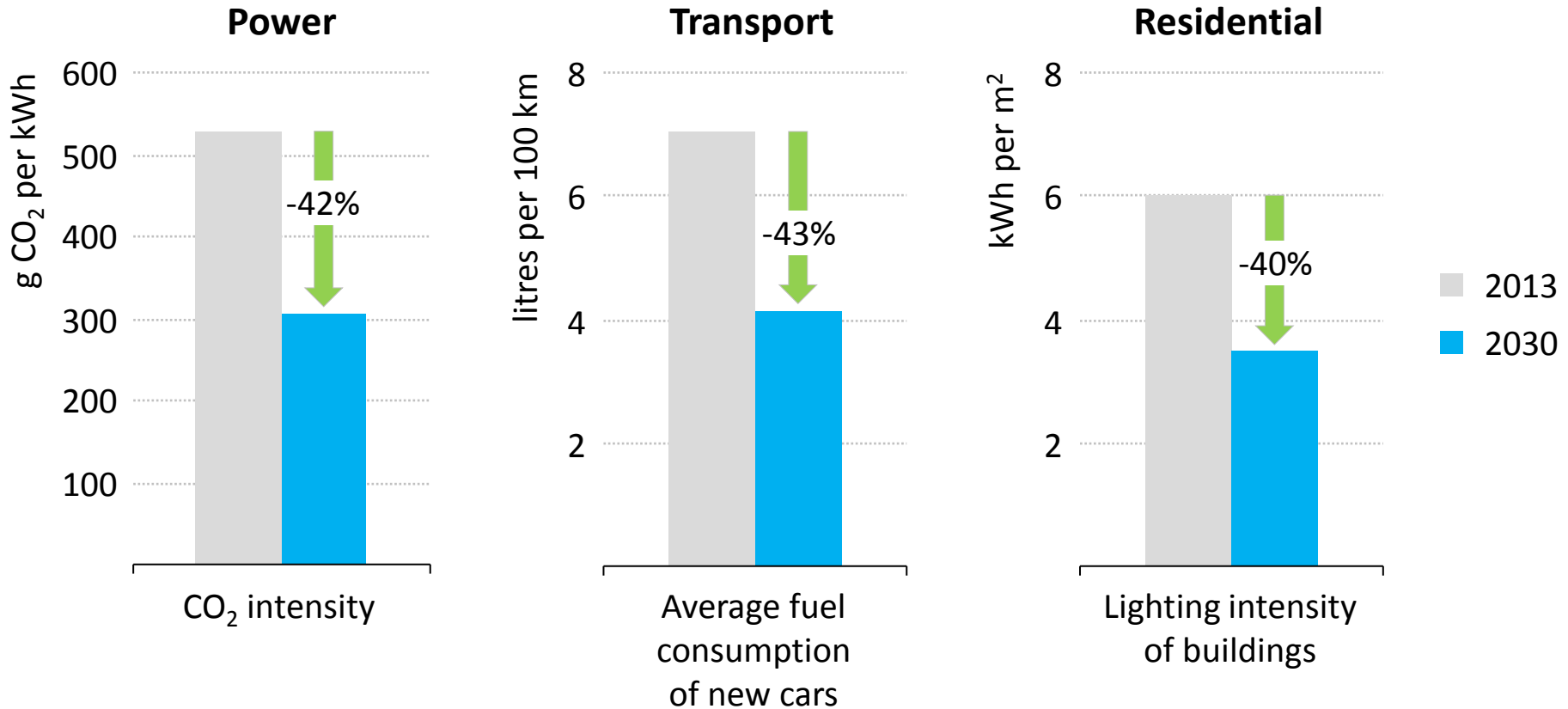
Cost reductions & deployment of electric vehicles



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