ENERGY & ENVIRONMENT

International Energy Agency side-event

Electricity: at the core of climate mitigation

Cancún - UNFCCC
6 December 2010

International Energy Agency

International Energy Agency

World Energy Outlook 2010

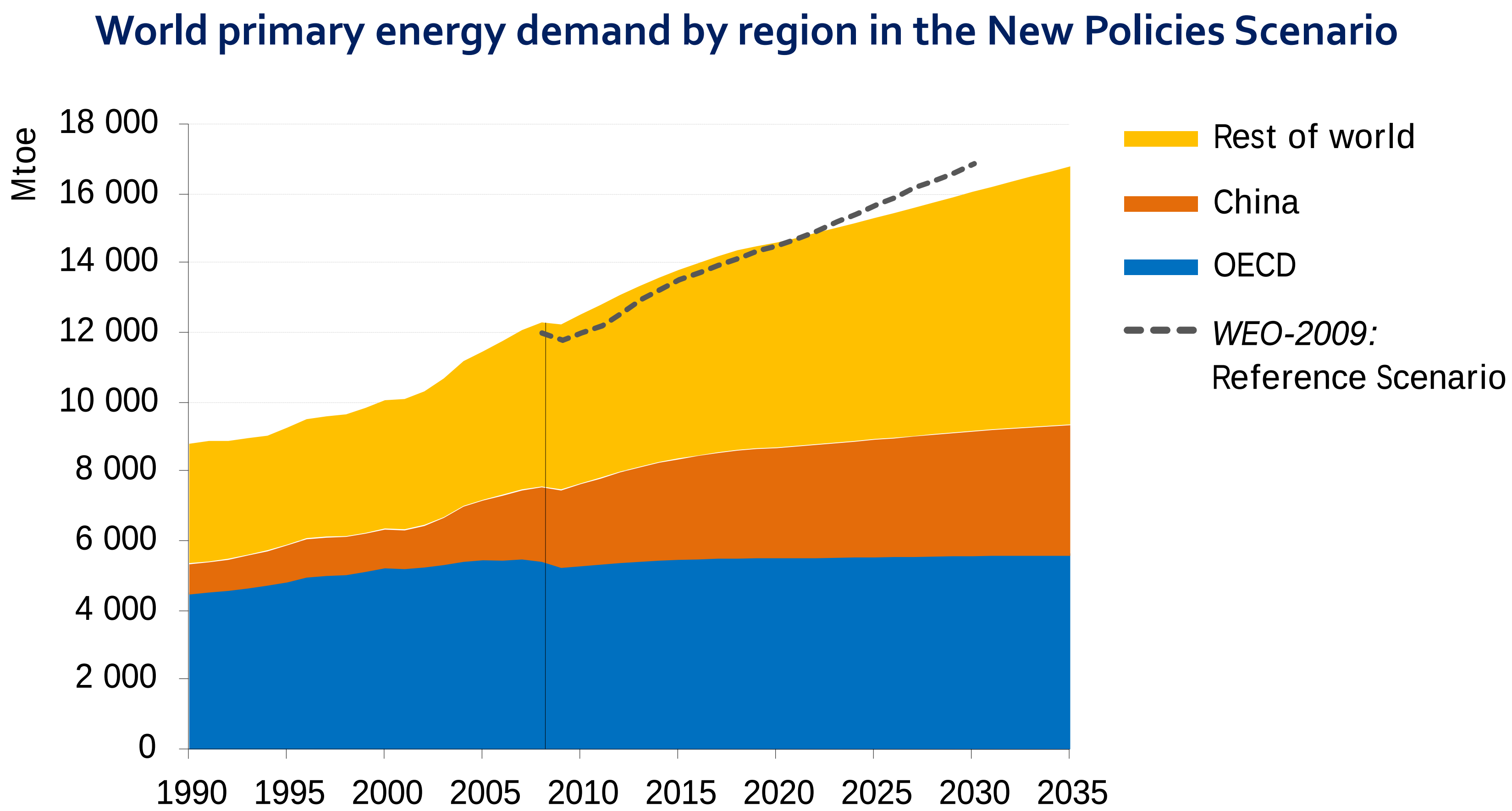
World Energy Outlook 2010

Nobuo Tanaka
Executive Director
International Energy Agency

Cancun, 6 December 2010, IEA side event

World primary energy demand by region in the New Policies Scenario

World Energy Outlook 2010

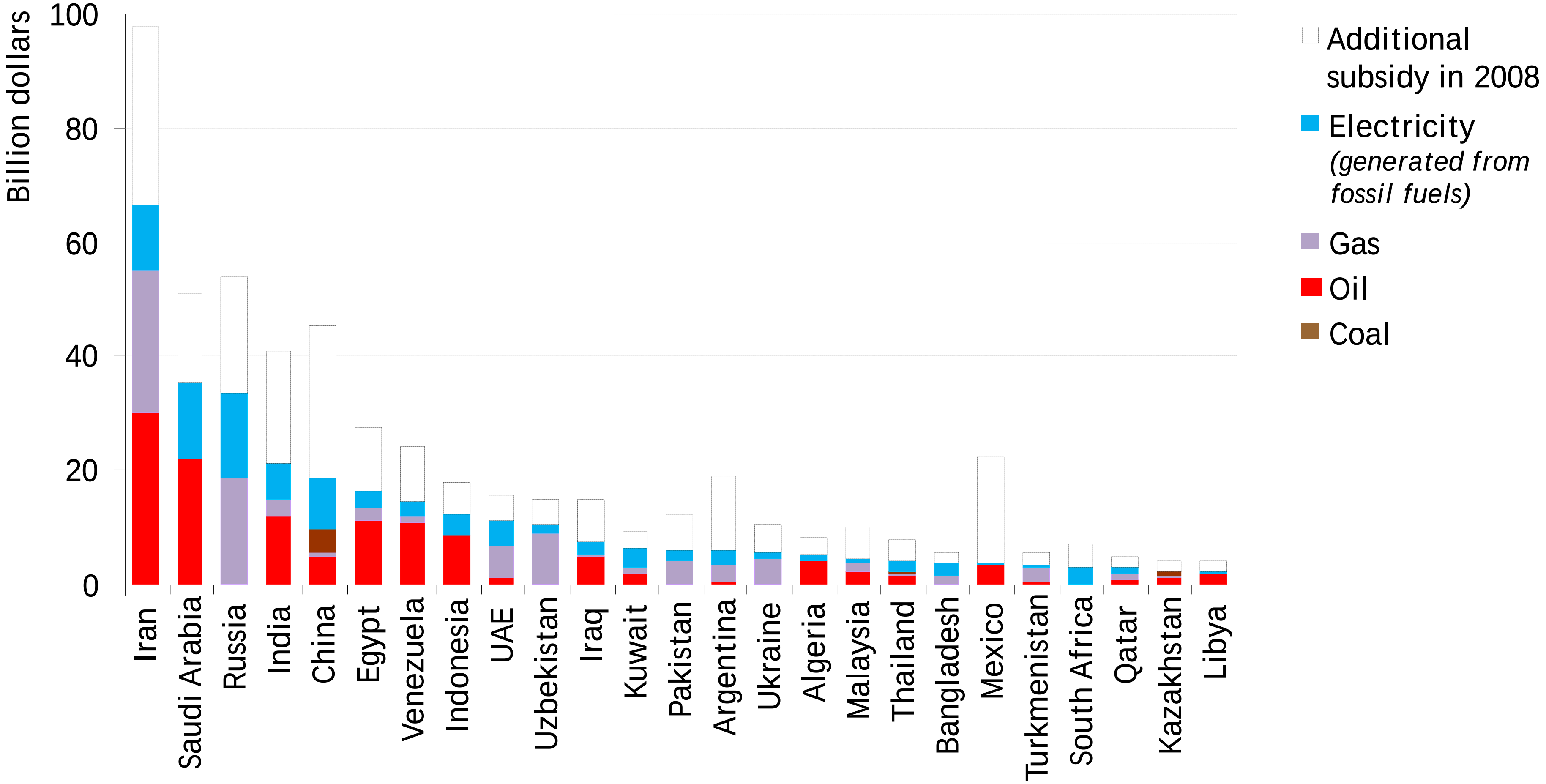


Global energy use grows by 36% in 2008-2035, with the OECD share of world demand falling from 44% today to 33% in 2035

Fossil-fuel subsidies are distorting price signals

World Energy Outlook 2010

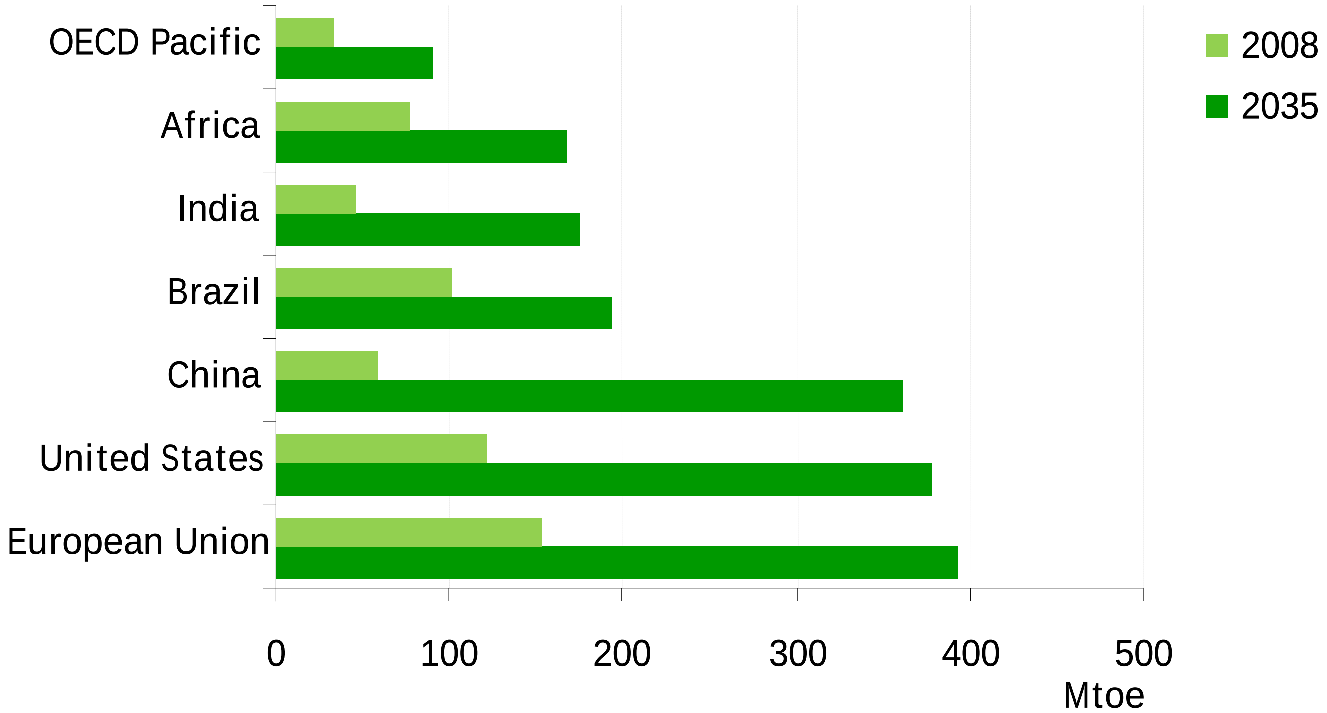
Economic value of fossil-fuel consumption subsidies by country, 2009



Fossil-fuel consumption subsidies amounted to $312 billion in 2009, down from $558 billion in 2008, with the bulk of the fall due to lower international prices

Renewables enter the mainstream….

Renewable primary energy demand in the New Policies Scenario

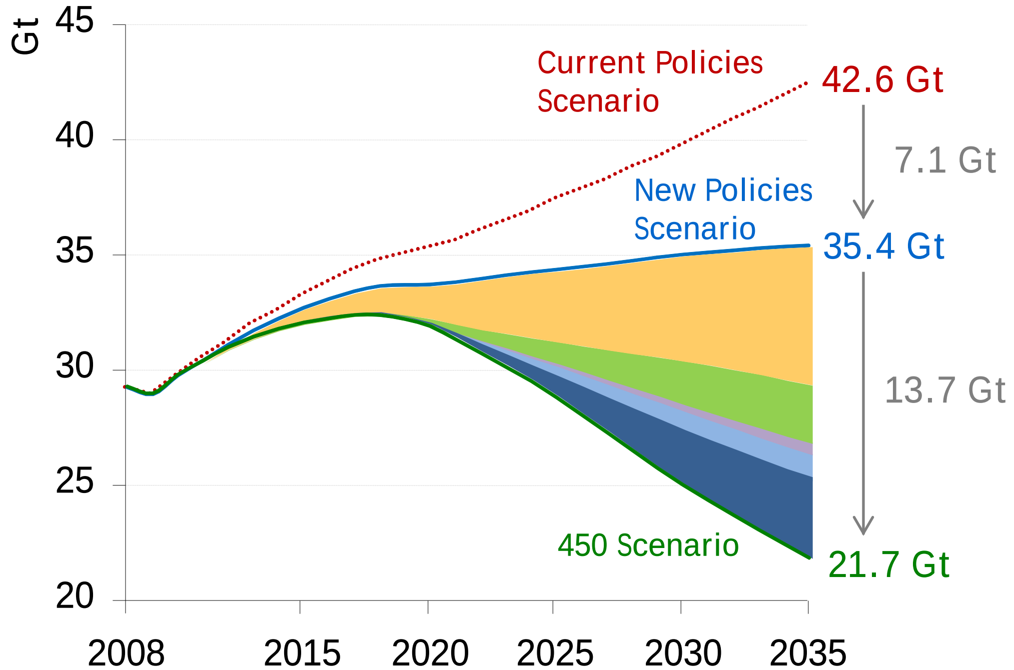


The use of renewable energy triples between 2008 & 2035, driven by the power sector where their share in electricity supply rises from 19% in 2008 to 32% in 2035

Moving beyond the New Policies Scenario: *Which technologies are needed?*

World Energy Outlook 2010

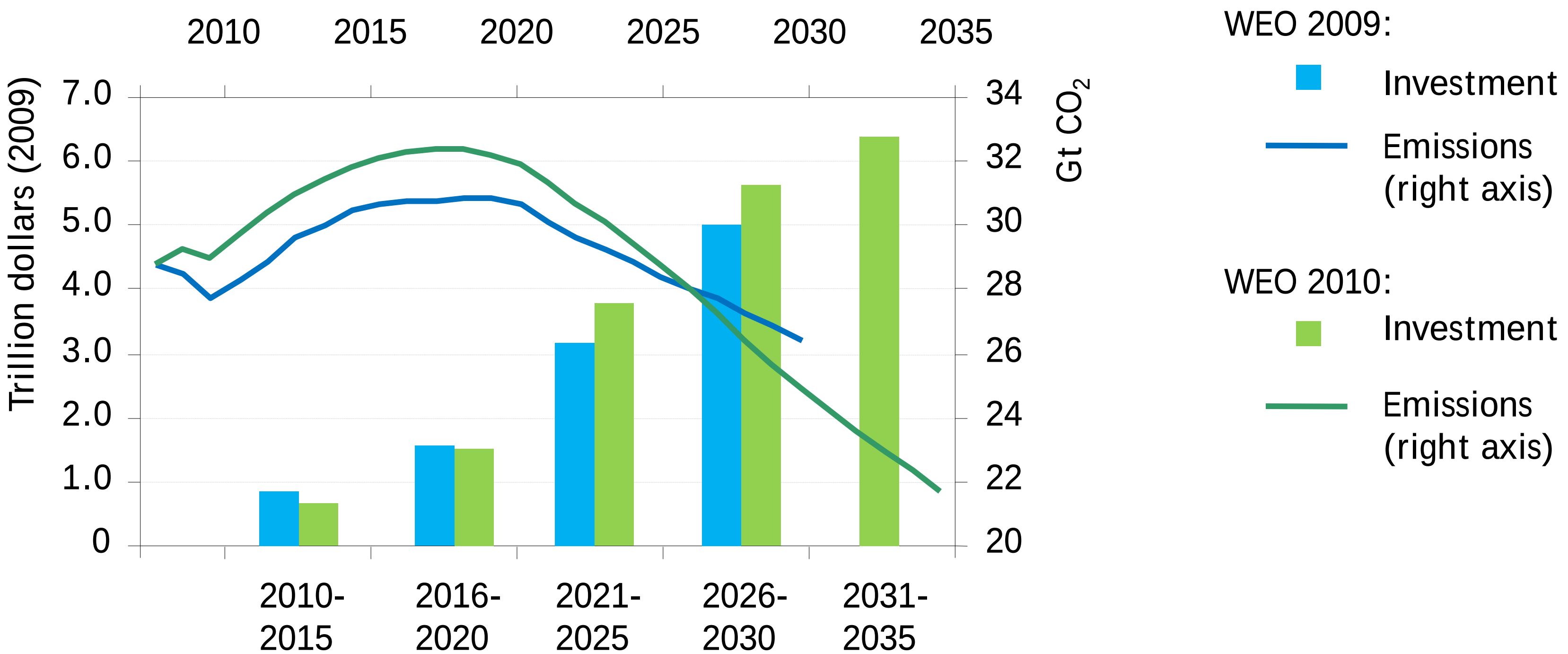
World energy-related CO2 emission savings by technology in the 450 Scenario relative to the New Policies Scenario



Share of cumulative abatement between 2010-2035	
Efficiency	50%
Renewables	18%
Biofuels	4%
Nuclear	9%
CCS	20%

In the 450 Scenario, efficiency measures account for 50% of the necessary abatement in 2010-2035, but renewables, CCS & nuclear are also crucial

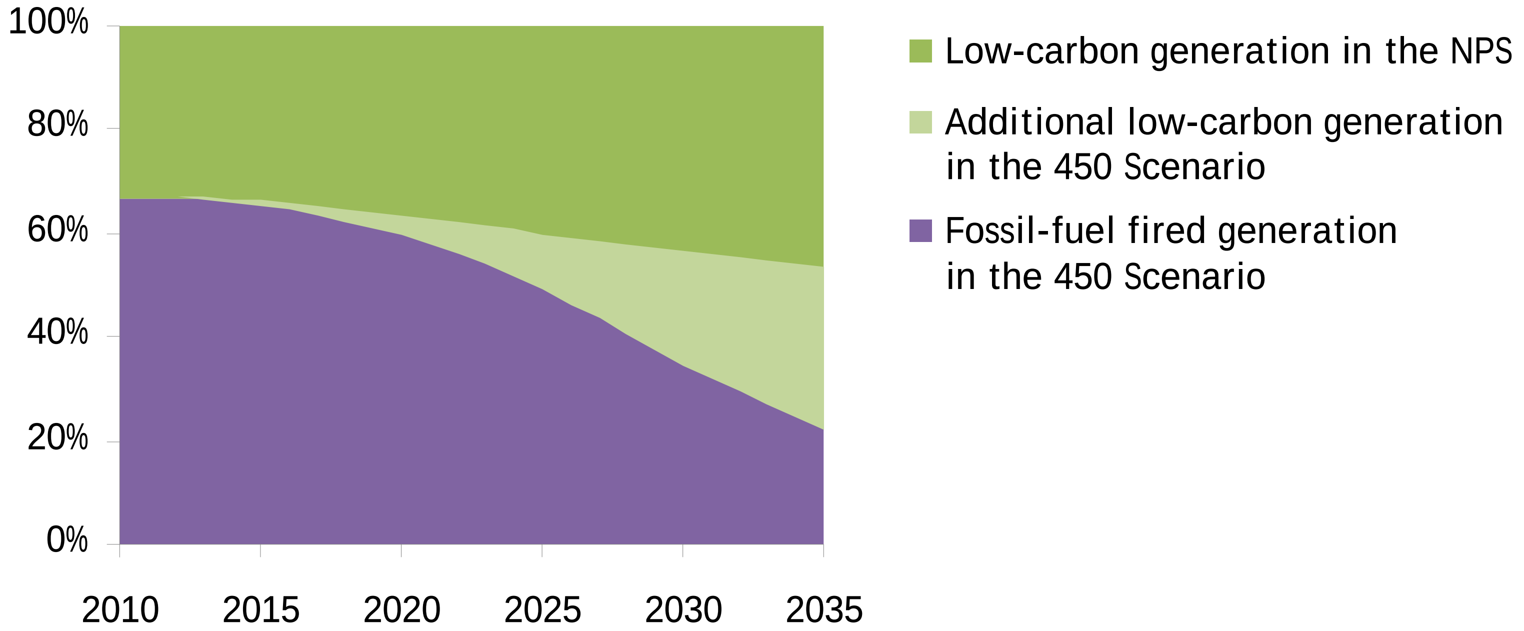
Low ambition to 2020 makes faster and deeper cuts necessary afterwards



Overall, this year's 450 Scenario will cost $1 trillion more than last year's by 2030, and requires a total of $18 trillion in investment by 2035

A fundamental change is needed in power generation

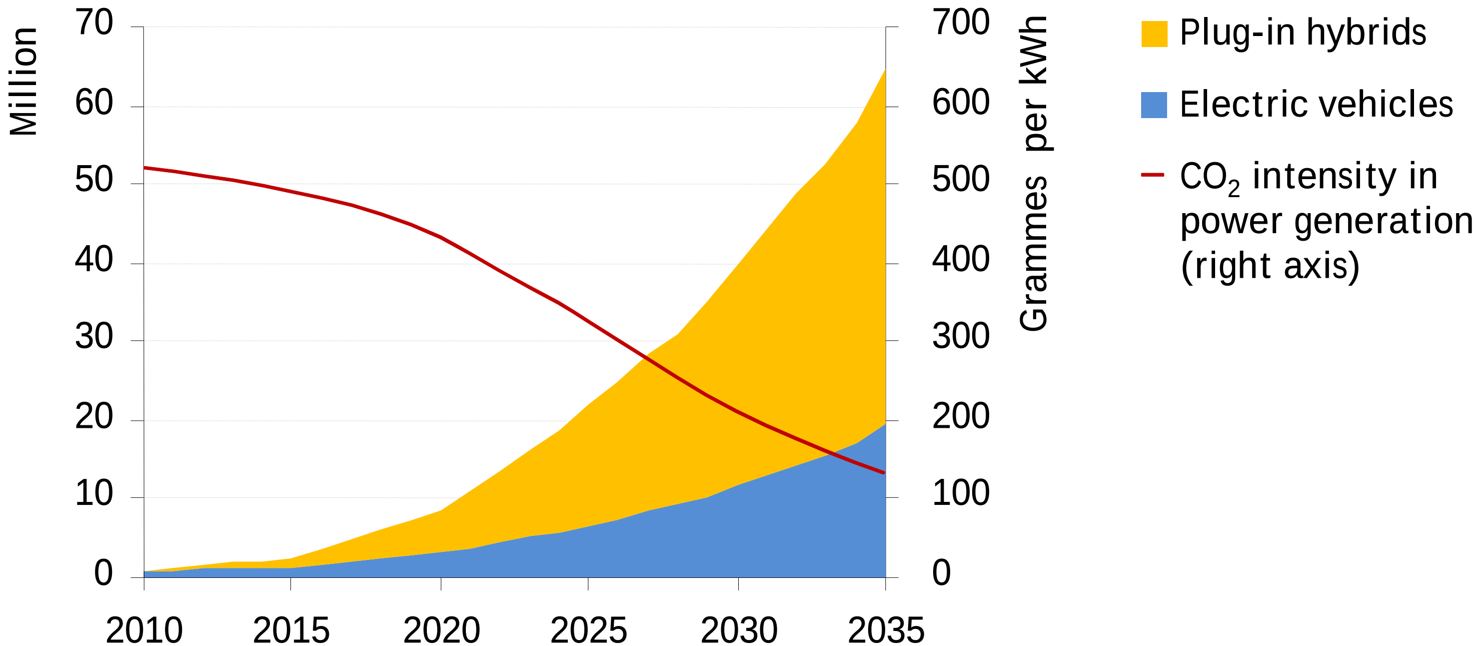
Share of world electricity generation by type and scenario



Low-carbon technologies account for over three-quarters of global power generation by 2035 in the 450 Scenario, a four-fold increase on today

… and also in transport

Sales of plug-in hybrid and electric vehicles in the 450 Scenario & CO_2 intensity of the power sector



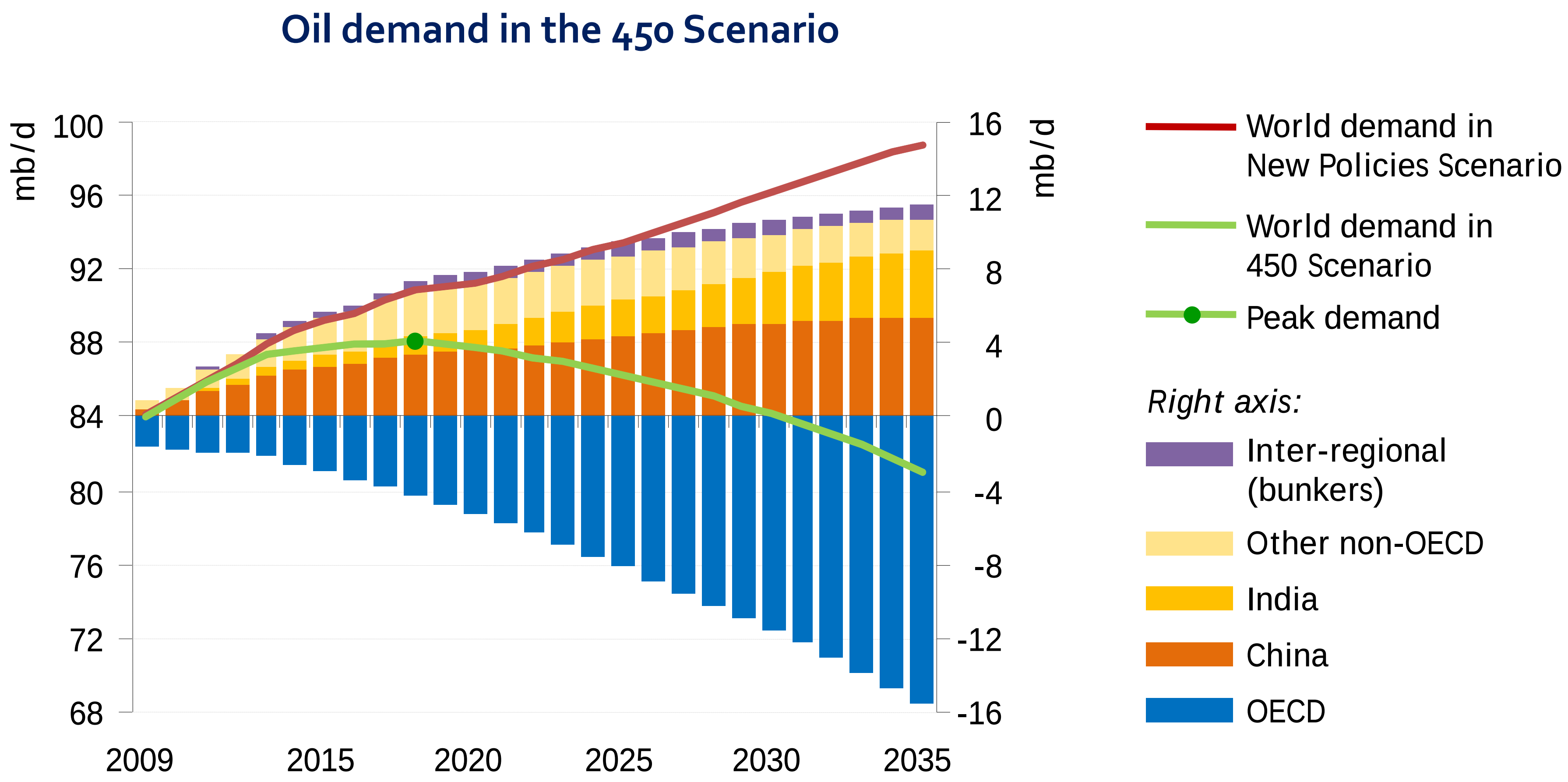
Plug-in hybrids & electric vehicles reach 39% of new sales by 2035, making a big contribution to emissions abatement, thanks to a major decarbonisation of the power sector

Drivers of abatement in the 450 Scenario

World Energy Outlook 2010

- OECD countries
  - > *Increased deployment of renewables and nuclear*
  - > *Development of CCS technology*
- Middle East
  - > *Phase-out of fossil fuel subsidies*
  - > *Efficiency measures*
- China
  - > *Efficiency measures*
  - > *Development of CCS for coal*
  - > *Wide deployment of electric vehicles*
- Other Countries
  - > *Efficiency measures*
  - > *Promote renewables*
- CCS will require CDM

Will peak oil be a guest or the spectre at the feast?



Oil demand peaks at 88 mb/d before 2020 & falls to 81 mb/d in 2035, with a plunge in OECD demand more than offsetting continuing growth in non-OECD demand