



World Energy Outlook 2017

Elie Bellevrat

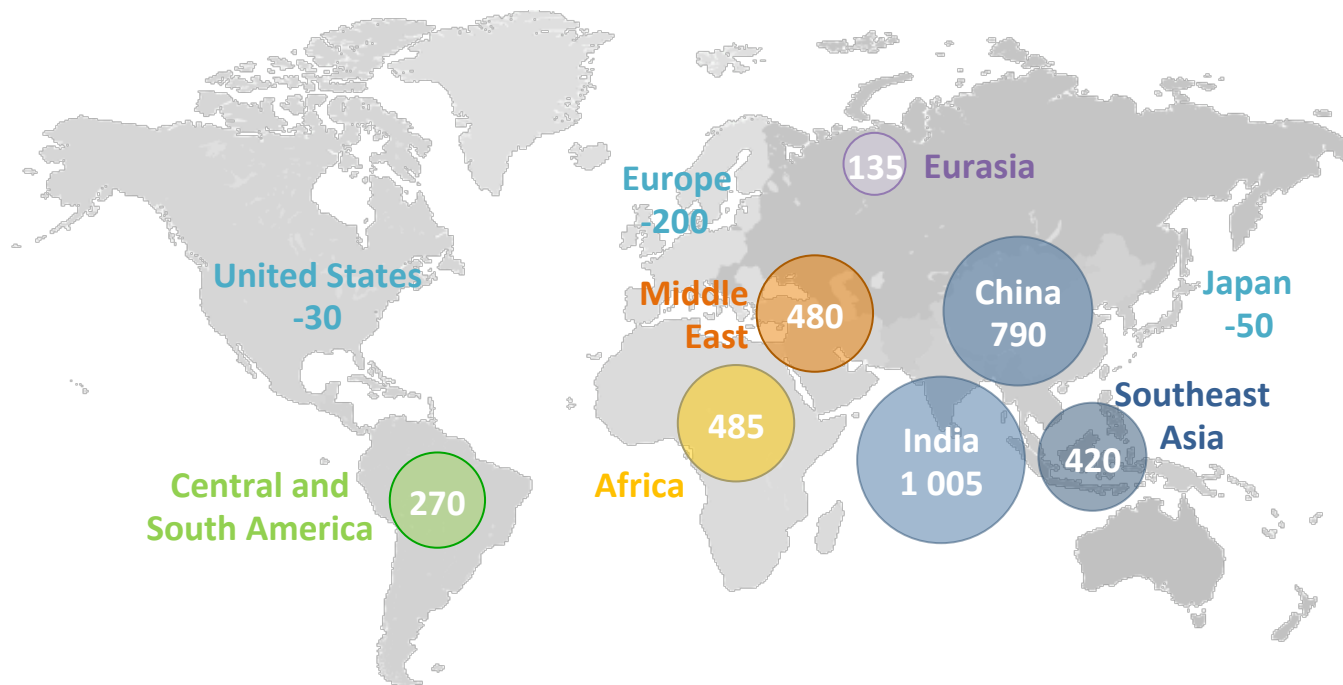
ECEEE policy seminar, 29 November 2017

Tipping the energy world off its axis

- Four large-scale upheavals in global energy set the scene for the new *Outlook*:
 - The **United States** is turning into the undisputed global leader for oil & gas
 - **Solar PV** is on track to be the cheapest source of new electricity in many countries
 - **China** is switching to a new economic model & a cleaner energy mix
 - **Electricity** is broadening its horizon, spurred by cooling, electric vehicles & digitalisation
- These changes brighten the prospects for affordable, sustainable energy & require a reappraisal of approaches to energy security
- There are many possible pathways ahead & many potential pitfalls if governments or industry misread the signs of change

India takes the lead, as China energy growth slows

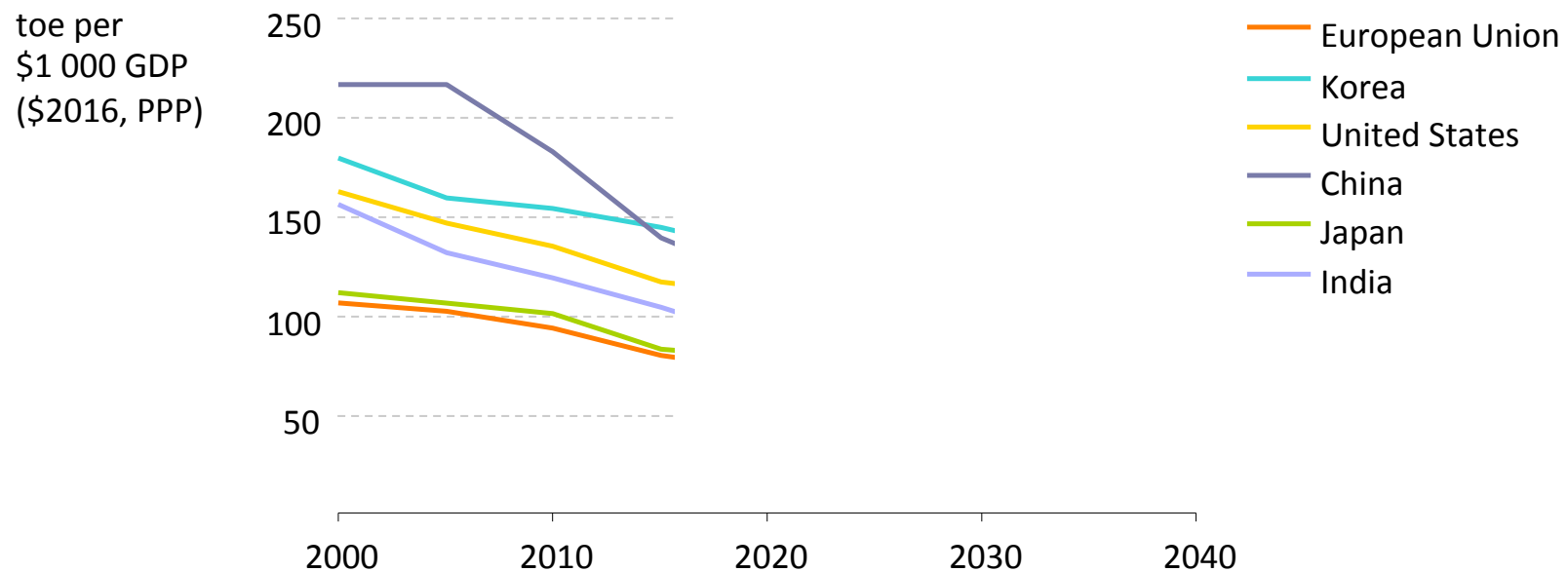
Change in energy demand, 2016-40 (Mtoe)



Old ways of understanding the world of energy are losing value as countries change roles: the Middle East is fast becoming a major energy consumer & the United States a major exporter

Energy intensity is falling down

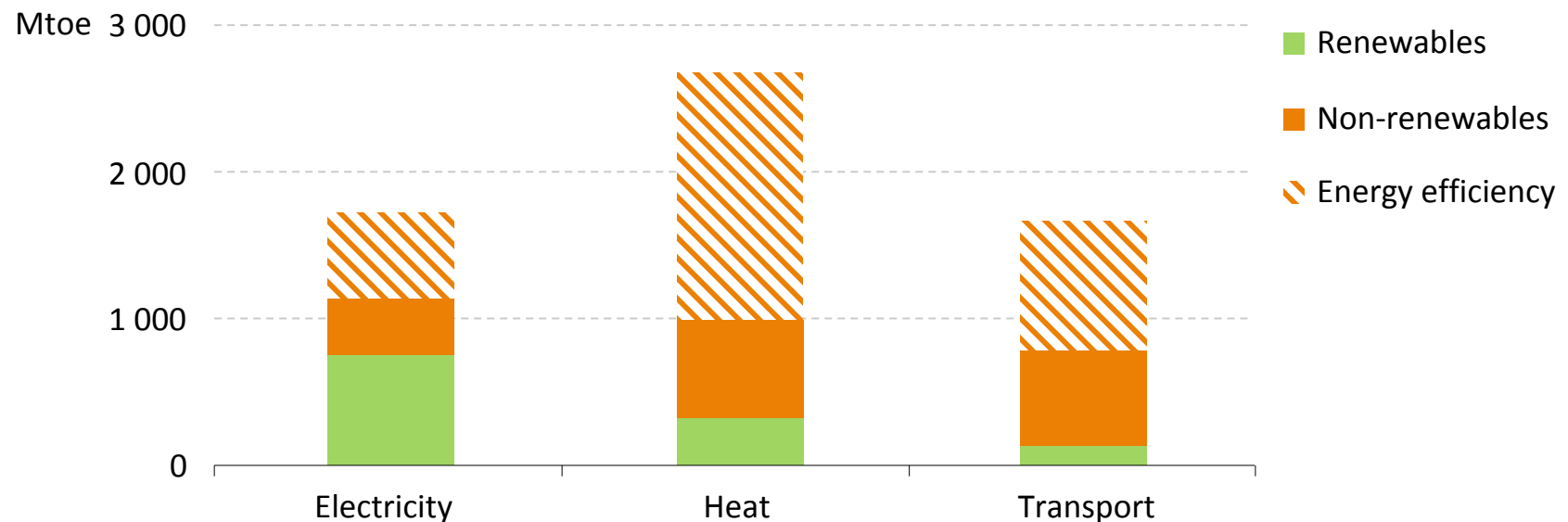
Primary energy demand per unit of GDP in selected regions, in the New Policies Scenario



The energy intensity of GDP is lowest in Europe European, among main economies; the region remains at the forefront of energy efficiency by 2040

Energy efficiency remains the first fuel

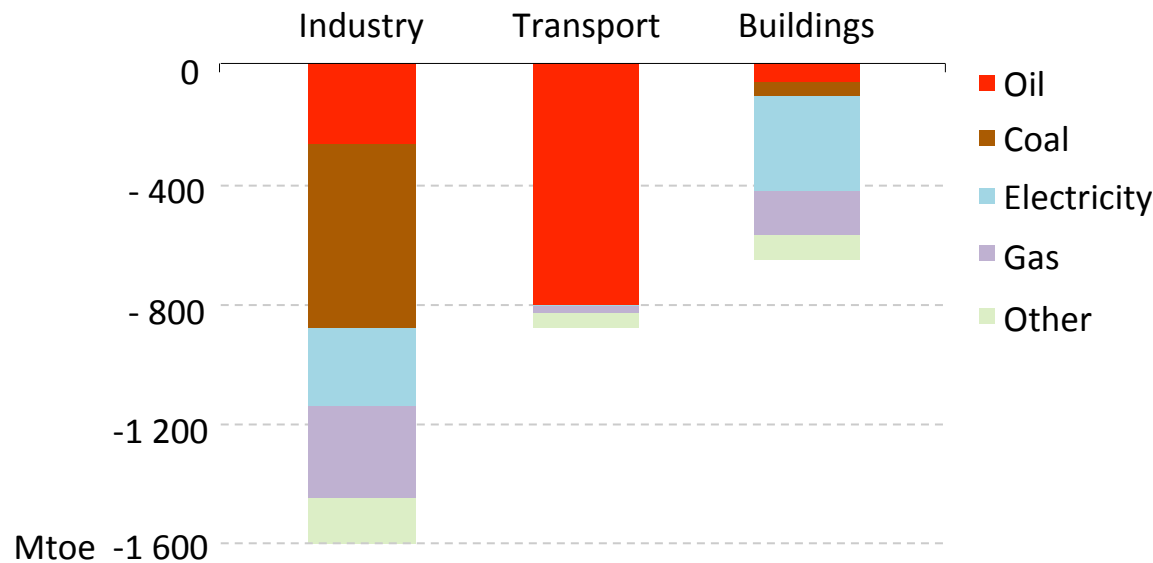
Global end-use energy demand growth by sector in the New Policies Scenario, 2016-2040



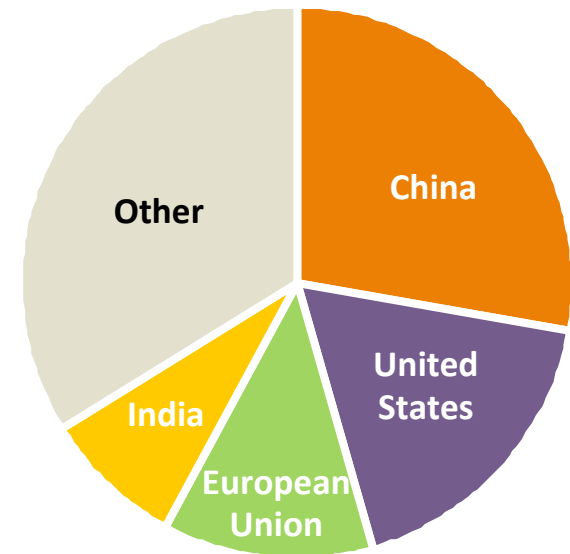
Energy efficiency is the first decarbonisation strategy of heat and transport fuels, but comes second after renewables in electricity

Energy savings around the world are huge

Avoided final energy demand due to energy efficiency in 2040, by selected sector and fuel



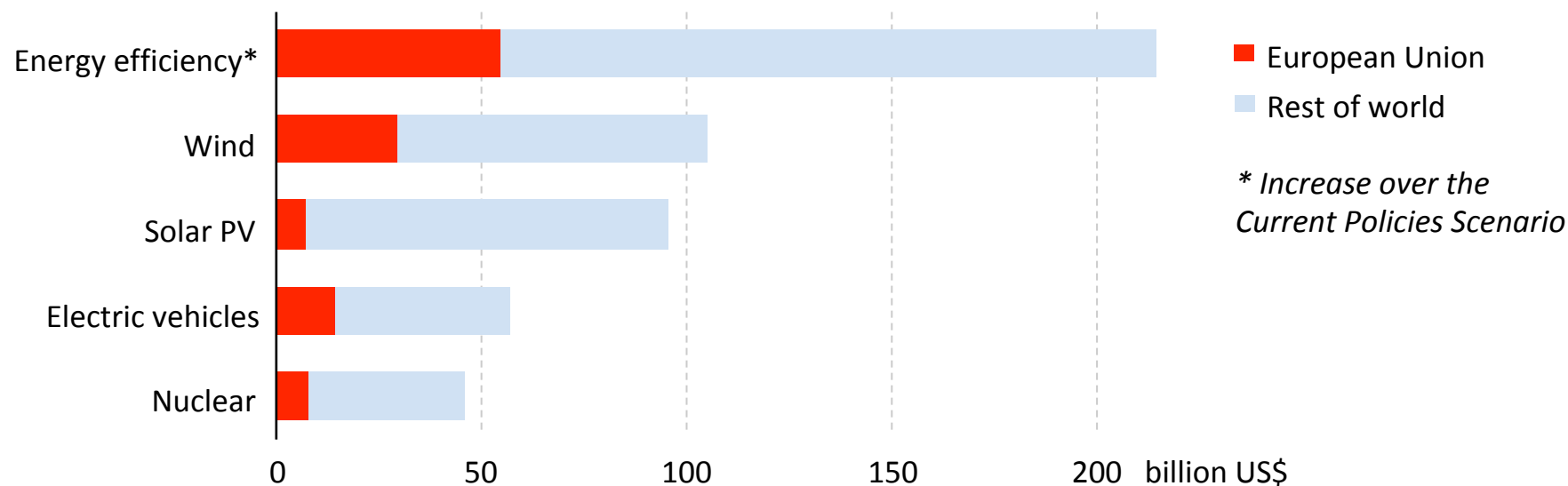
by main region



Targeted policies underpin energy efficiency improvement in all main economies; the European Union contributes significantly to the global trend

The energy efficiency investment challenge

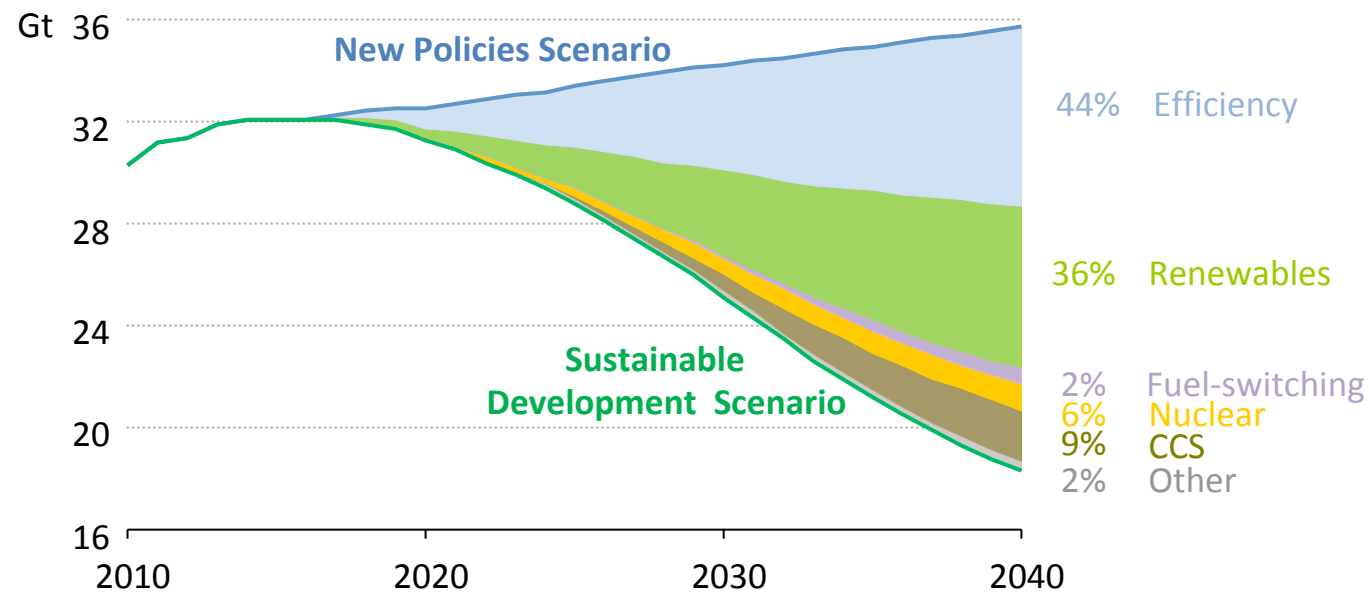
World annual average investment in low-carbon technologies and energy efficiency, 2017-2040



The European Union leads the way in energy efficiency investment

Changing the way energy is used and produced

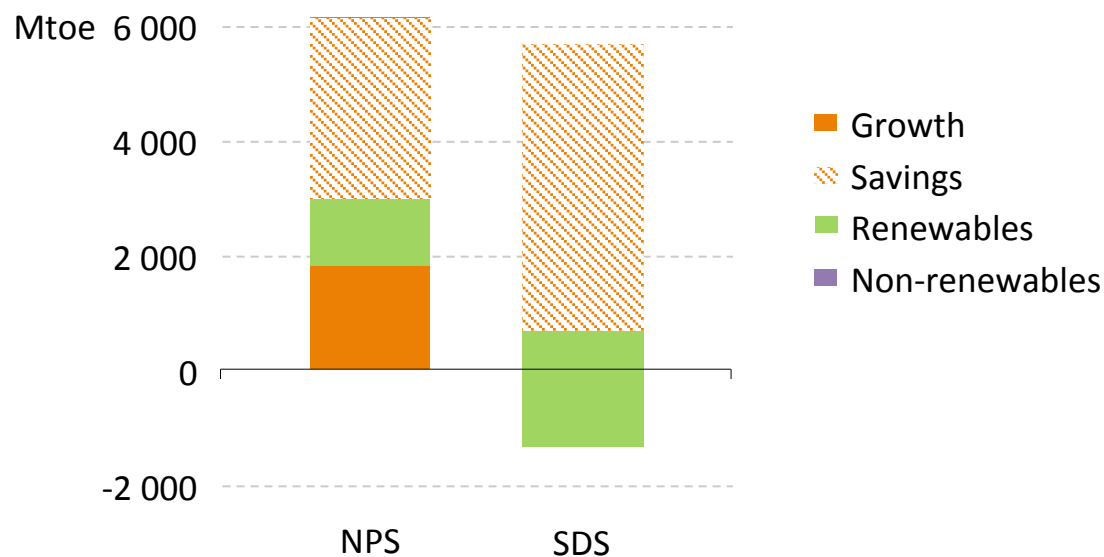
Global CO₂ emissions in the New Policies and Sustainable Development Scenarios



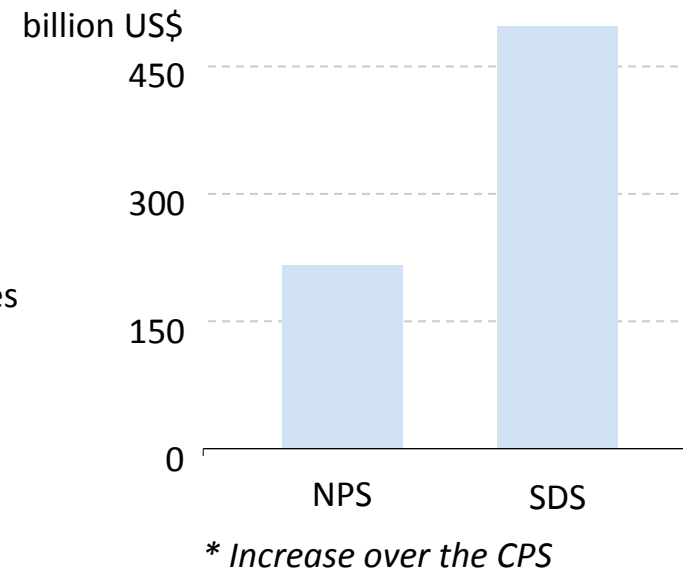
Energy efficiency and renewables account for 80% of the cumulative CO₂ emissions savings in the Sustainable Development Scenario

Pushing forward energy efficiency

Global final energy demand growth, 2016-2040



Annual global average investment in energy efficiency*, 2016-2040



Enhanced synergies between energy efficiency and renewables deployment allow for net fossil-fuel demand decrease in the Sustainable Development Scenario by 2040



World Energy Outlook 2017

iea.org/weo