



International  
Energy Agency  
Secure  
Sustainable  
Together

# Energy and Air Pollution

Dr Fatih Birol

Executive Director, International Energy Agency

17<sup>th</sup> IUAPPA World Clean Air Congress; 9<sup>th</sup> Better Air Quality Conference

Busan, Korea 1 September 2016

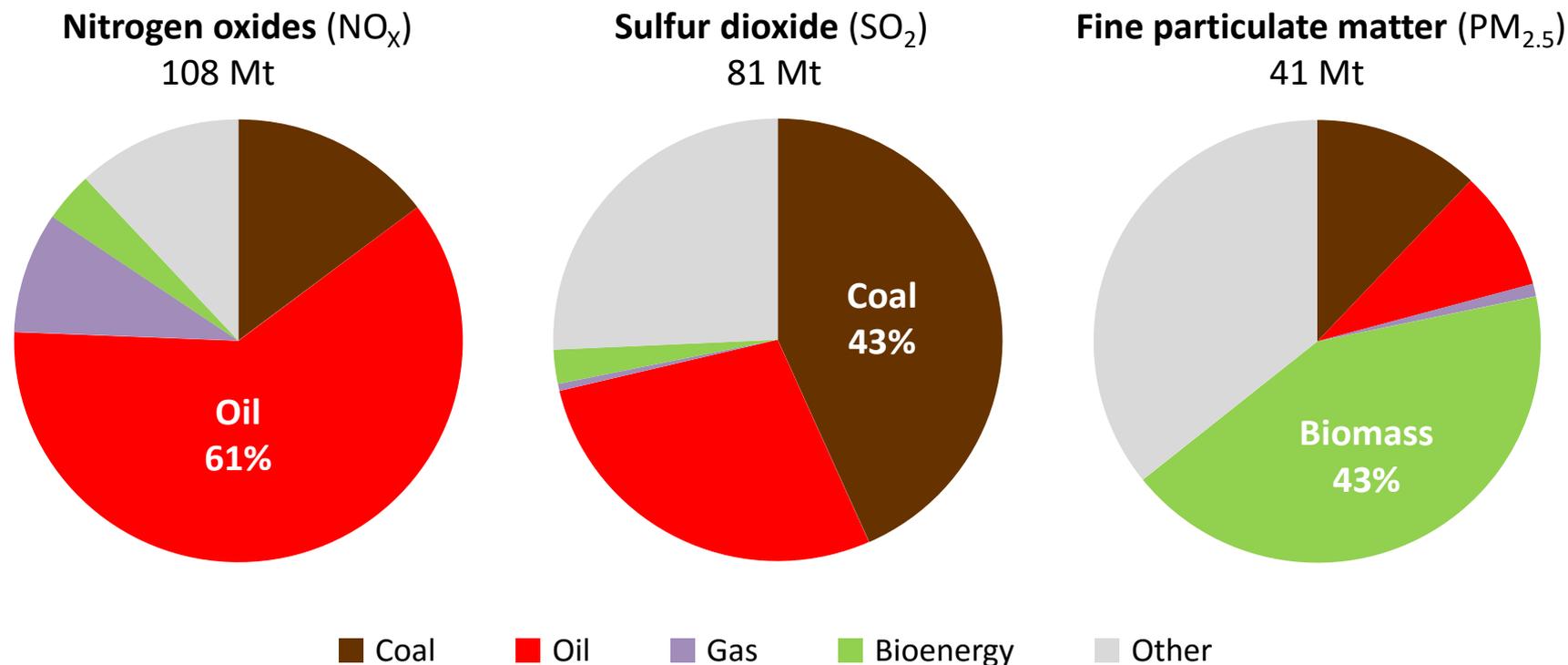
World Energy Outlook Special Report

# Context

- **Air pollution is the fourth largest human health risk**
  - *3.5 million premature deaths are linked to energy poverty due to the use of biomass for cooking and kerosene for lighting*
  - *3 million premature deaths are linked to outdoor air pollution, mostly in cities*
- **Many of its root causes – and cures – are in the energy sector**
  - *The majority of air pollutant emissions comes from the energy sector, mainly from fuel combustion*
  - *Currently only 8% of global energy production is combustion free: more than half of the rest has no effective technology in place to control emissions*
  - *No country in the world has solved the air pollution problem completely, but many are taking important policy steps*
- **Can the energy sector step up efforts to combat this global public health crisis?**

# Air pollution is an energy problem

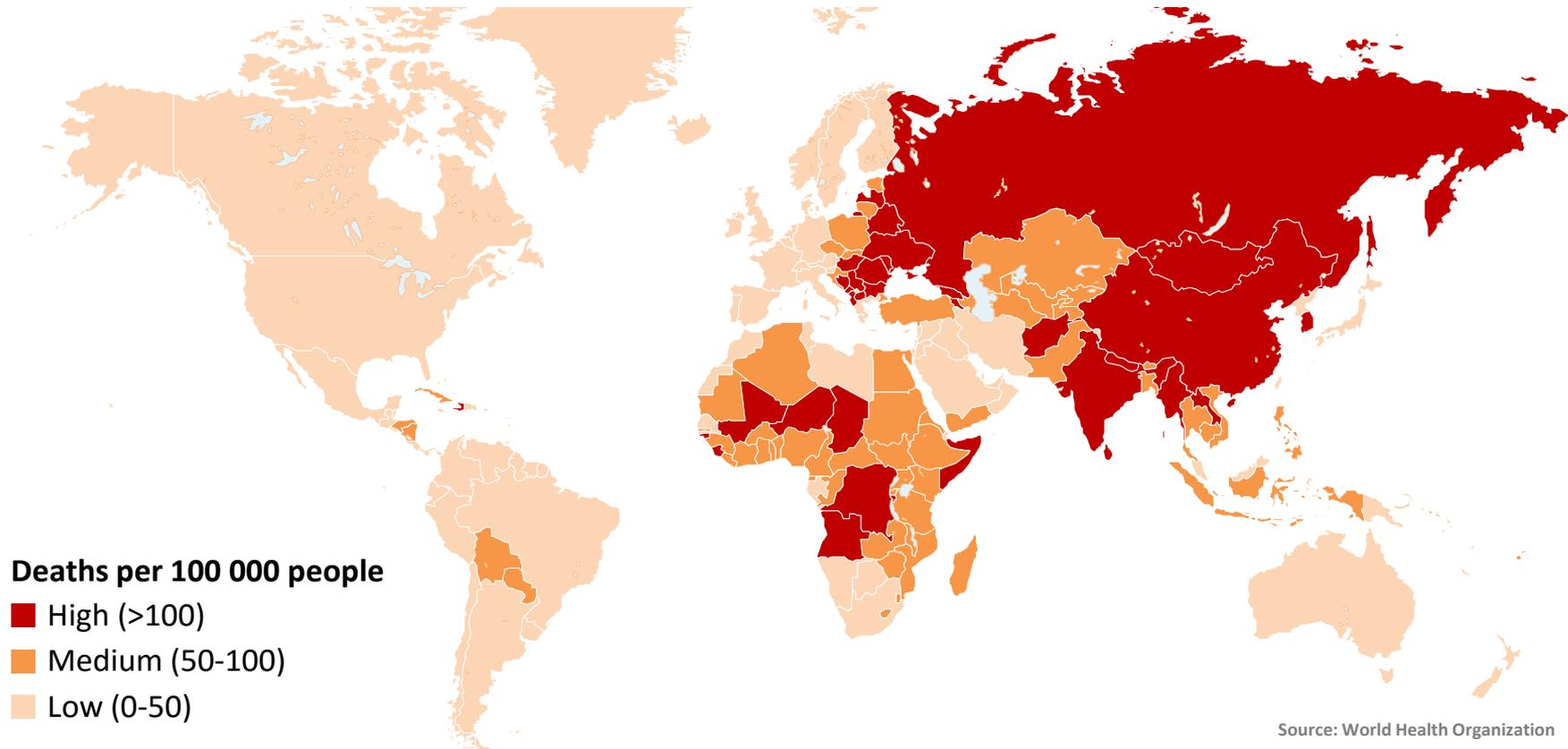
## Pollutant emissions, 2015



***Energy is the single most important cause of emissions of all main pollutants***

# High risk air pollution areas

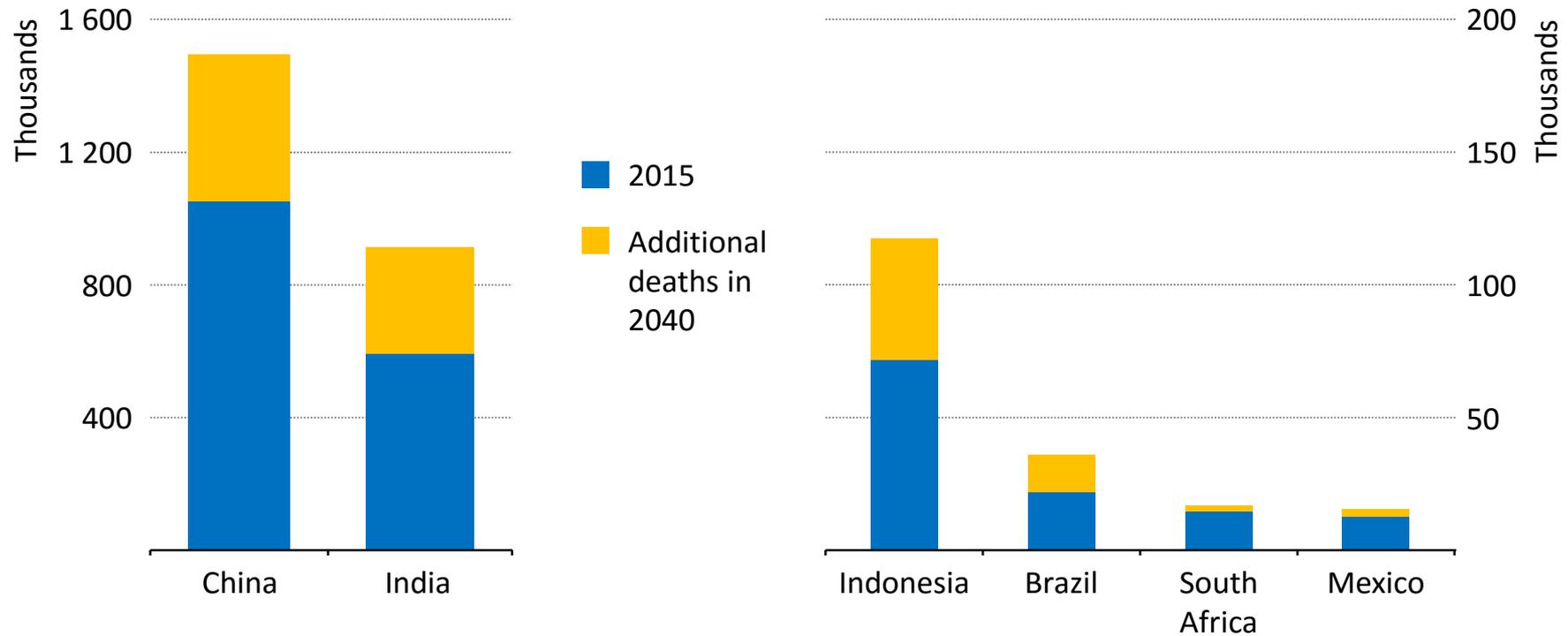
## Mortality rate due to air pollution, 2012



***Countries with the largest death toll are China and India, but on a per capita basis many countries across Africa, Asia and Eastern Europe are affected***

# The death toll keeps rising...

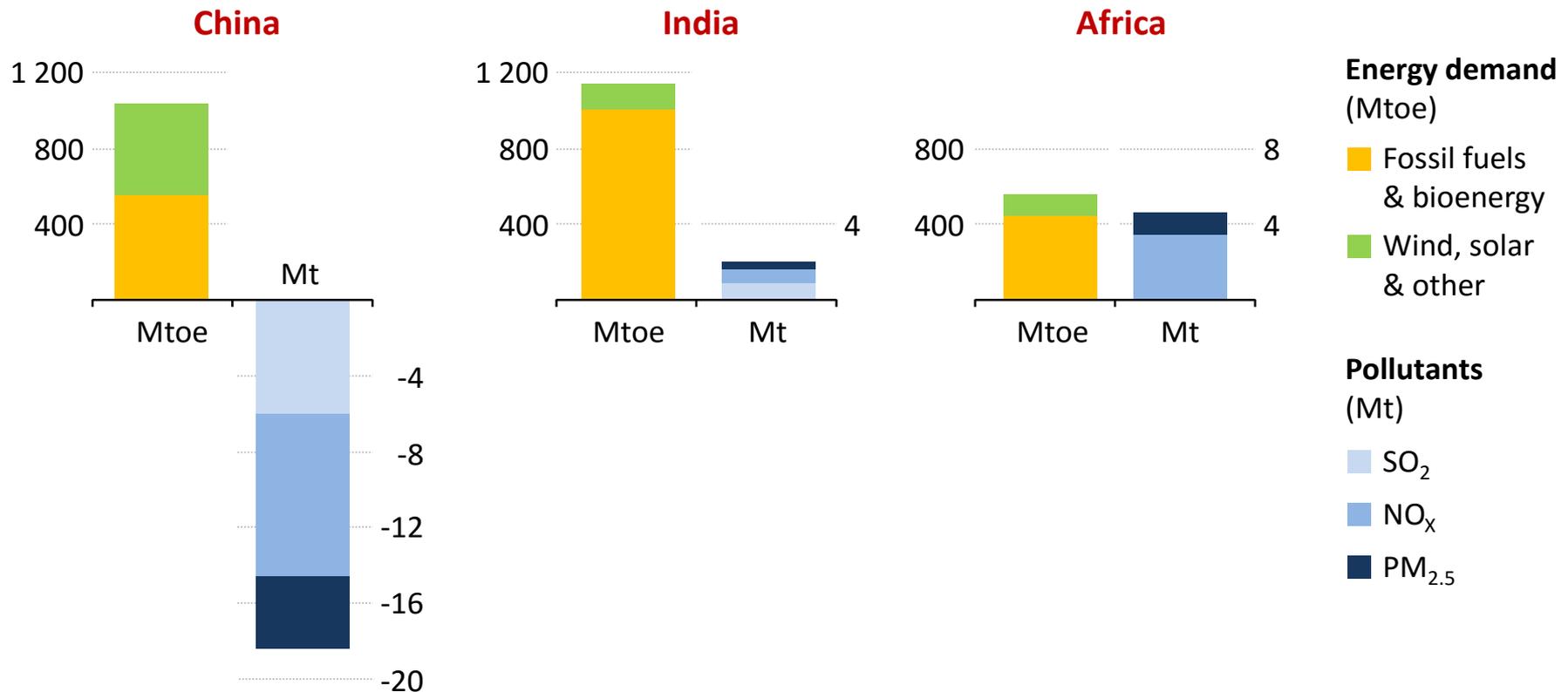
## Premature deaths due to outdoor pollution in selected regions



***Despite planned policies premature deaths increase from 3 to 4.5 million in 2040***

# ...but global trends mask significant regional differences

## Change in energy demand and pollutants to 2040



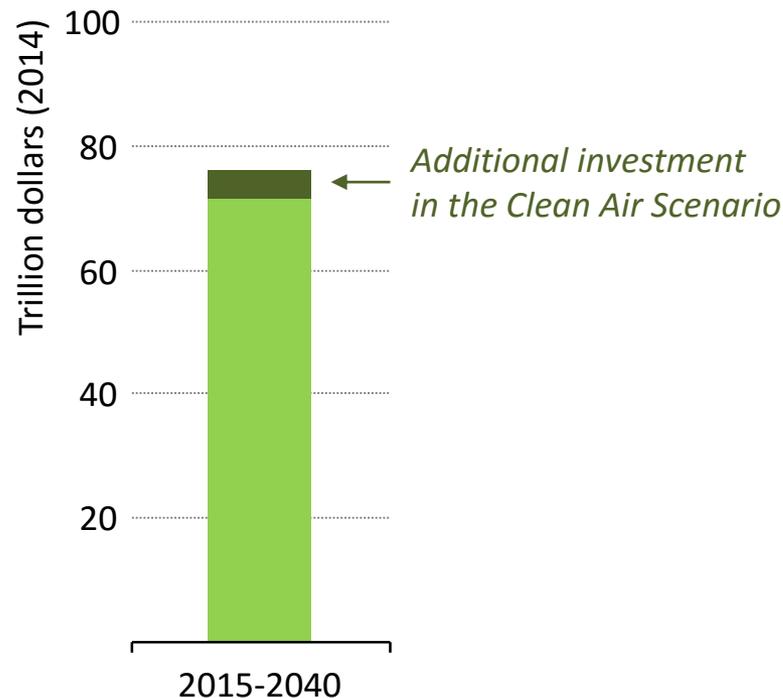
***Policies are successful to decouple pollutant emissions from energy demand growth to 2040; but the air pollution problem remains far from being solved***

# What should the energy sector do?

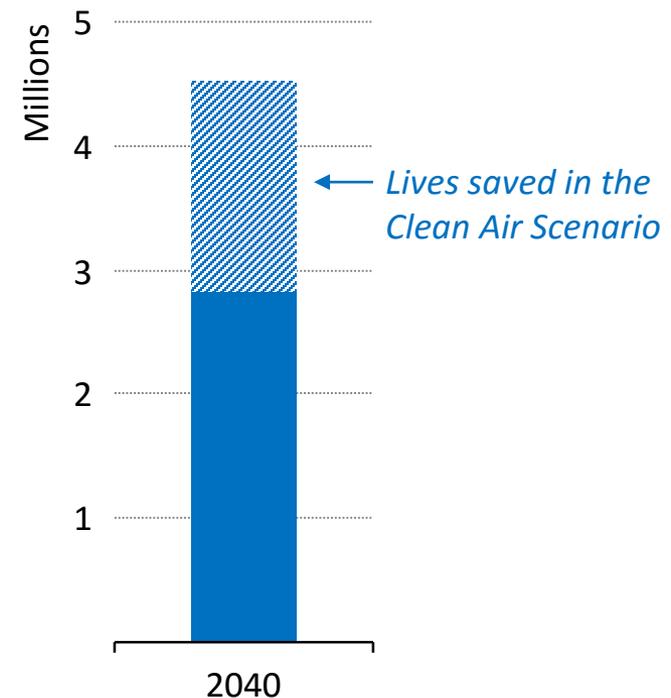
- The IEA proposes a pragmatic strategy to cut pollutant emissions & deaths by around 50%, compared with our main scenario
- A Clean Air Scenario, based on existing technologies & tailored to local conditions, relies on actions in three areas:
  1. *A long-term air quality goal*
  2. *A package of clean air measures for the energy sector:*
    - An **accelerated energy transition**: more efficiency & more renewables
    - More widespread use of **advanced pollution controls**
  3. *Strict monitoring & enforcement and effective communication*

# The IEA Clean Air Strategy

## Cumulative investment



## Premature deaths from outdoor air pollution

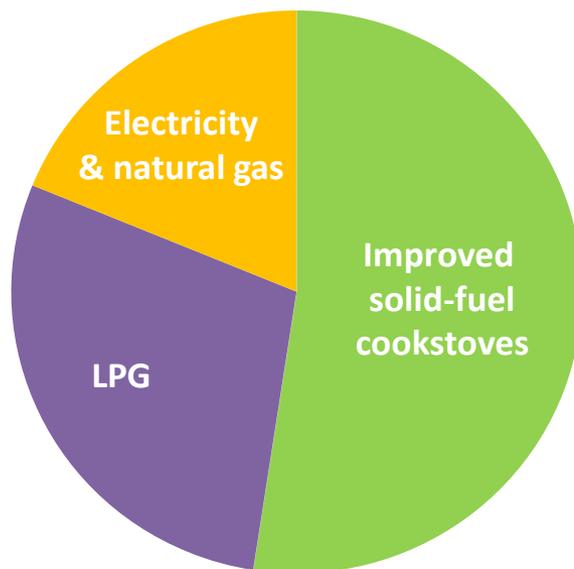


**A 7% increase in investment can save over 3 million lives in 2040, while providing energy access for all, lower energy import bills and leading to a peak in CO<sub>2</sub> by 2020**

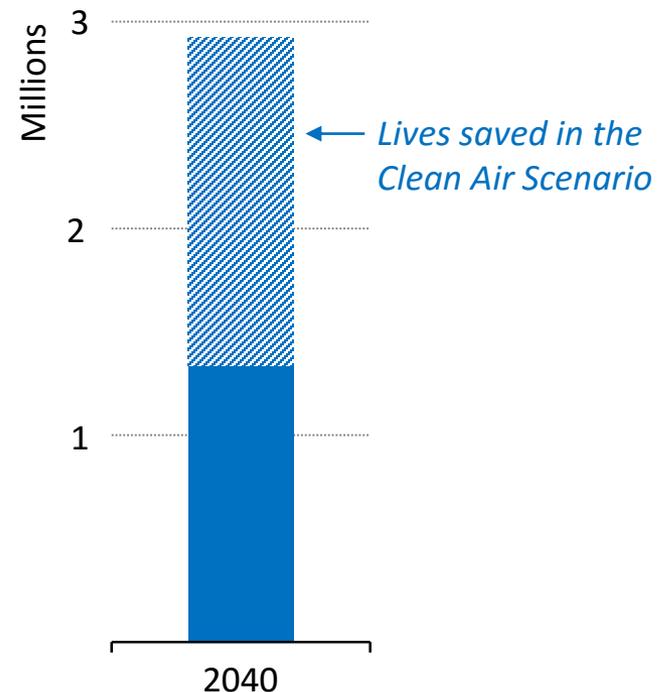
# The IEA Clean Air Strategy

Improvement in  
cooking methods, 2040

715 million households



Premature deaths from  
indoor air pollution



***A 7% increase in investment can save over 3 million lives in 2040, while providing energy access for all, lower energy import bills and leading to a peak in CO<sub>2</sub> by 2020***

# Conclusions

- **The impacts of air pollution are concentrated in fast-growing Asia & in Africa, but no country has solved the problem entirely**
- **The overall death toll still rises, despite post-COP decarbonisation policies & targeted pollution measures that mitigate pollution trends**
- **IEA's Clean Air Strategy cuts 2040 pollutant emissions & premature deaths by around half, with only a 7% increase in investment**
- **A well-designed air quality strategy will have major co-benefits for other policy goals, including energy access & climate change**
- **IEA will continue to promote integrated policy approaches as it strengthens its role as a global hub for clean & efficient energy**