



International Institute for
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science for global insight

The Next Global Energy Transformation: Costs and Multiple Benefits

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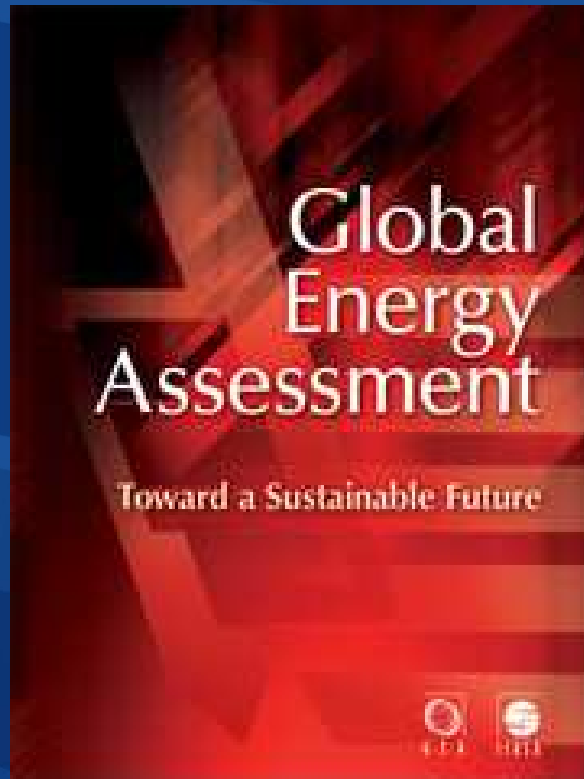
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IIASA 40th Anniversary Conference, Vienna, 24-26 October



IIASA, International Institute for Applied Systems Analysis

Global Energy Assessment (GEA)



- 300 Authors
- 200 Reviewers
- Assessment of
 - Major energy challenges
 - Transformation strategies
 - Effective policies
 - Costs & benefits

GEA Launch Rio+20





2012 INTERNATIONAL YEAR OF
SUSTAINABLE ENERGY
FOR ALL

2030 Energy Goals

- Universal Access to Modern Energy
- Double Energy Efficiency Improvement
- Double Renewable Share in Final Energy

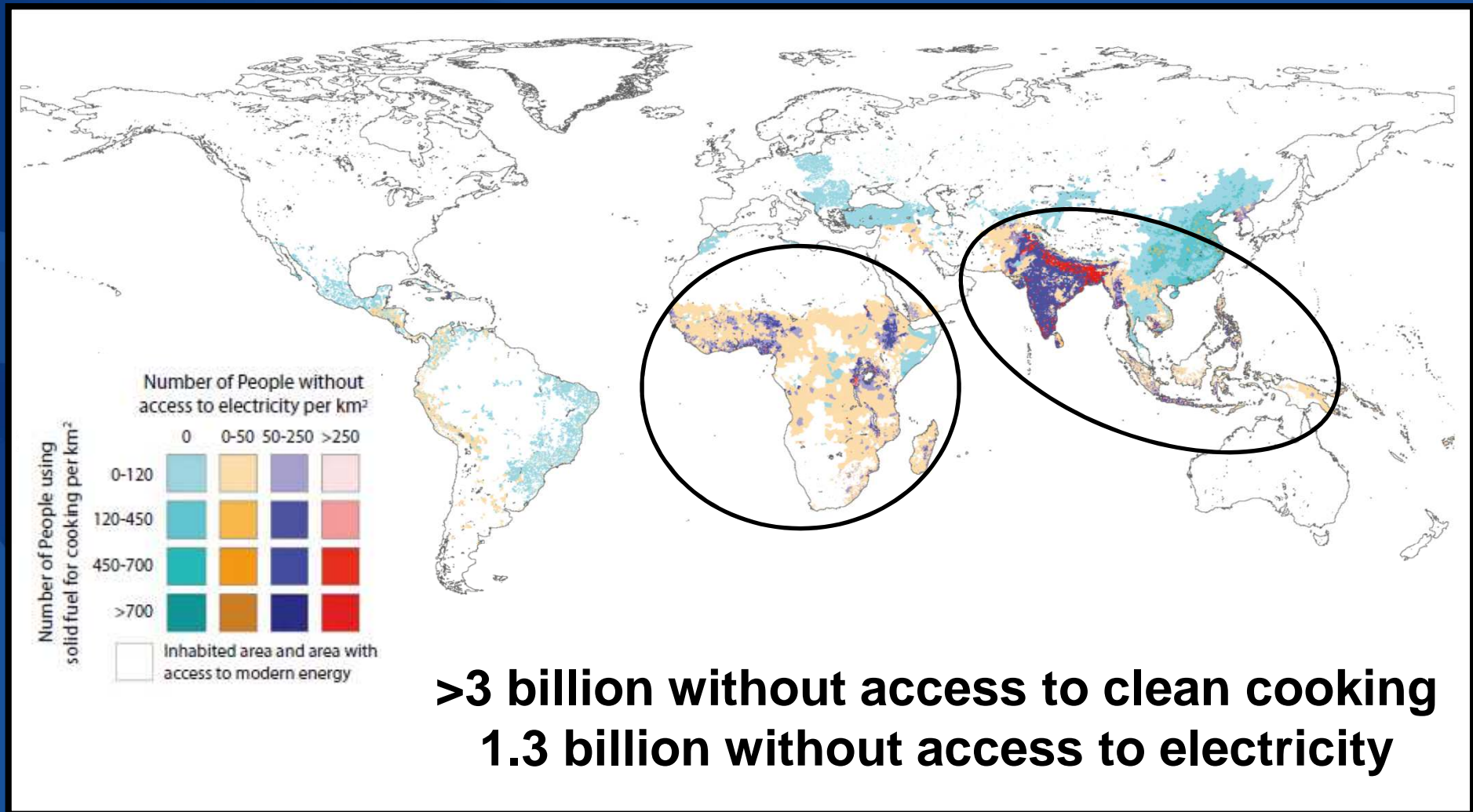
Aspirational & Ambitious but Achievable

Energy Challenges

- Providing universal access to affordable clean cooking and electricity for the poor
- Improving energy security throughout the world
- Limiting air pollution and health damages from energy use
- Limiting climate change through deep cuts in GHG emissions

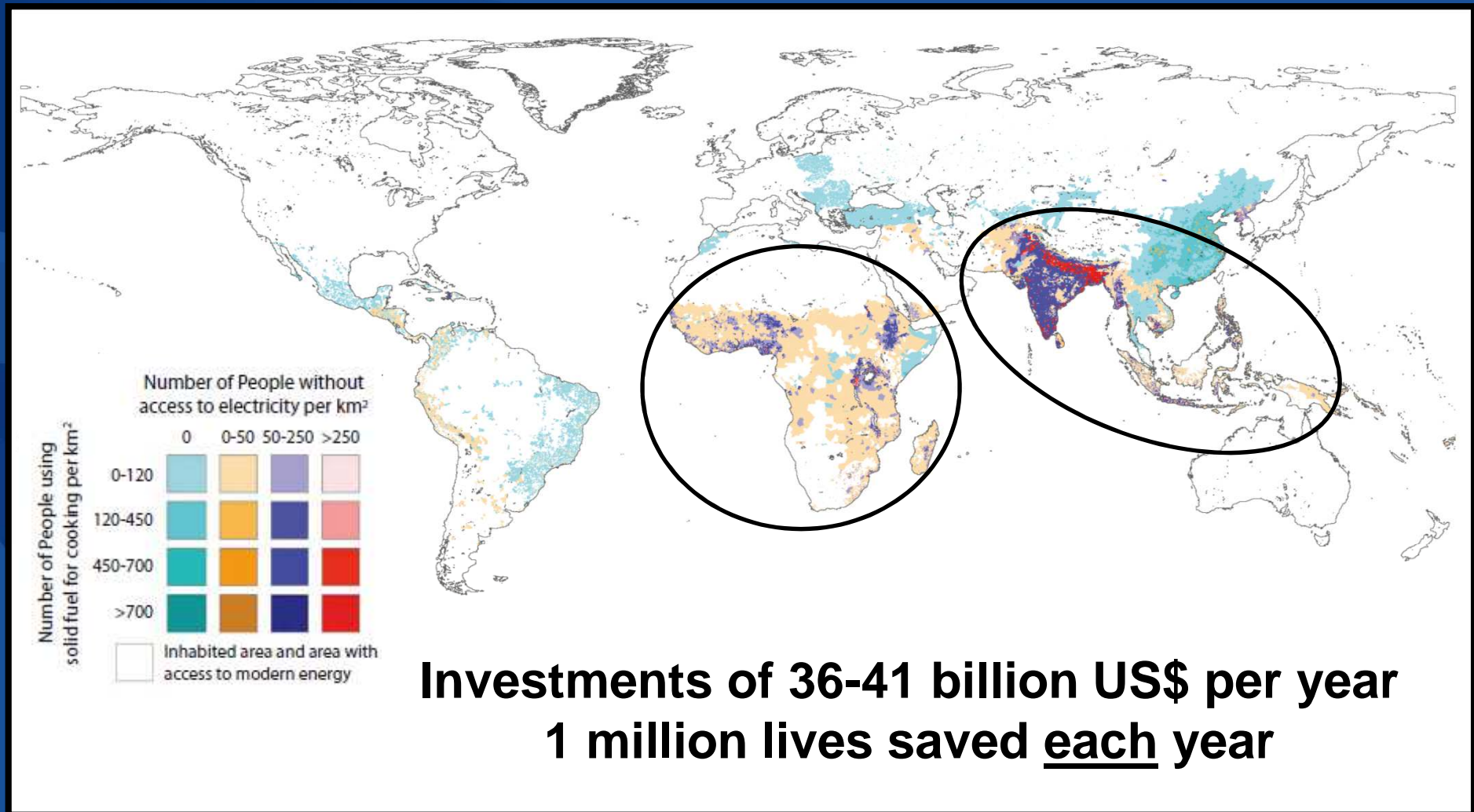
Energy Access (2010)

People without access to electricity or clean cooking



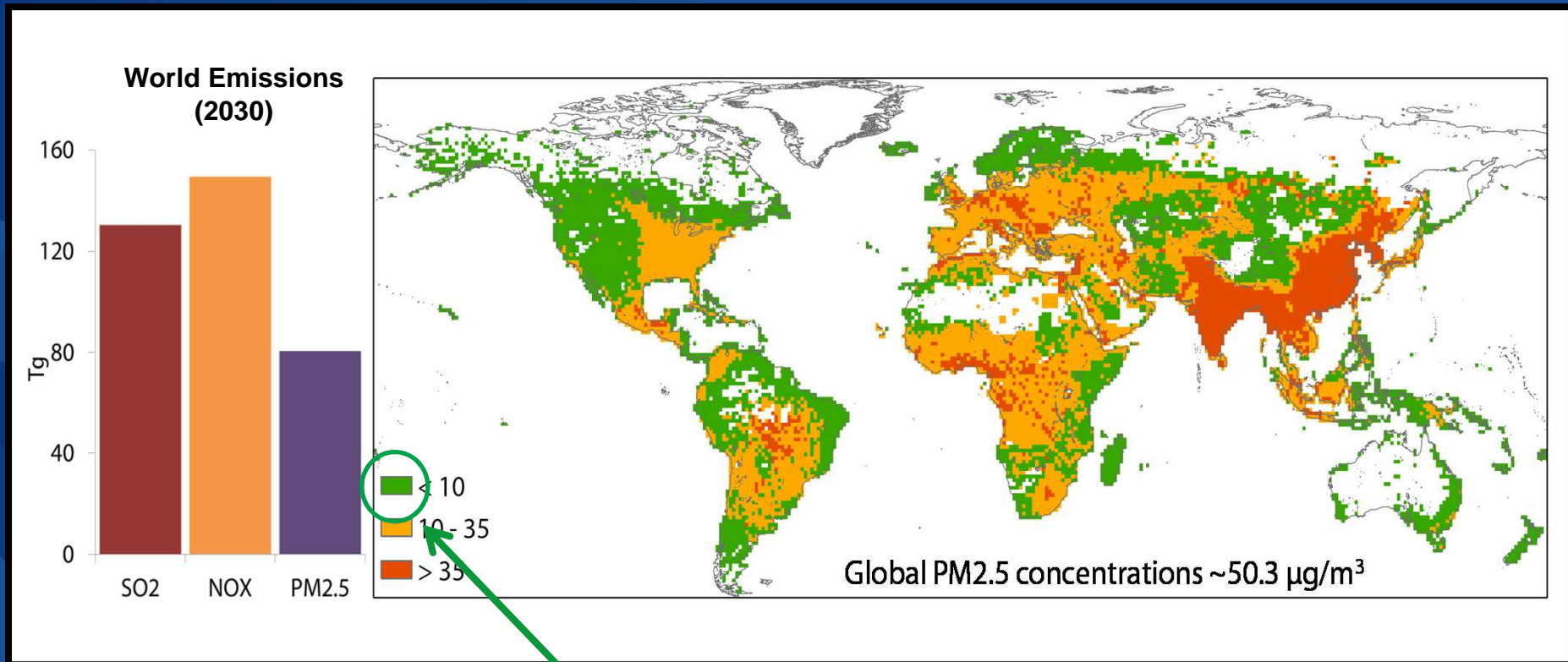
Energy Access (2010)

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GEA Health Assessment

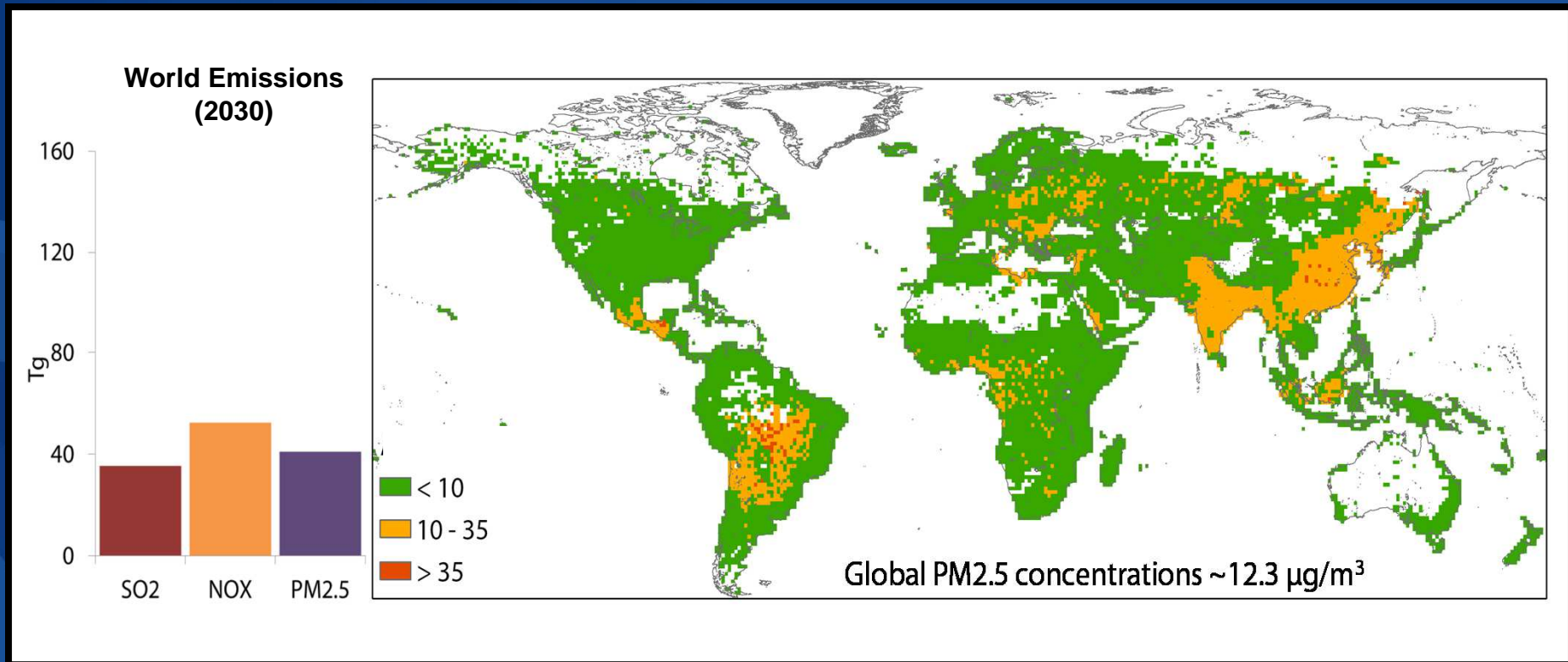
Present air pollution policies to 2030



WHO health guidelines

GEA Health Assessment

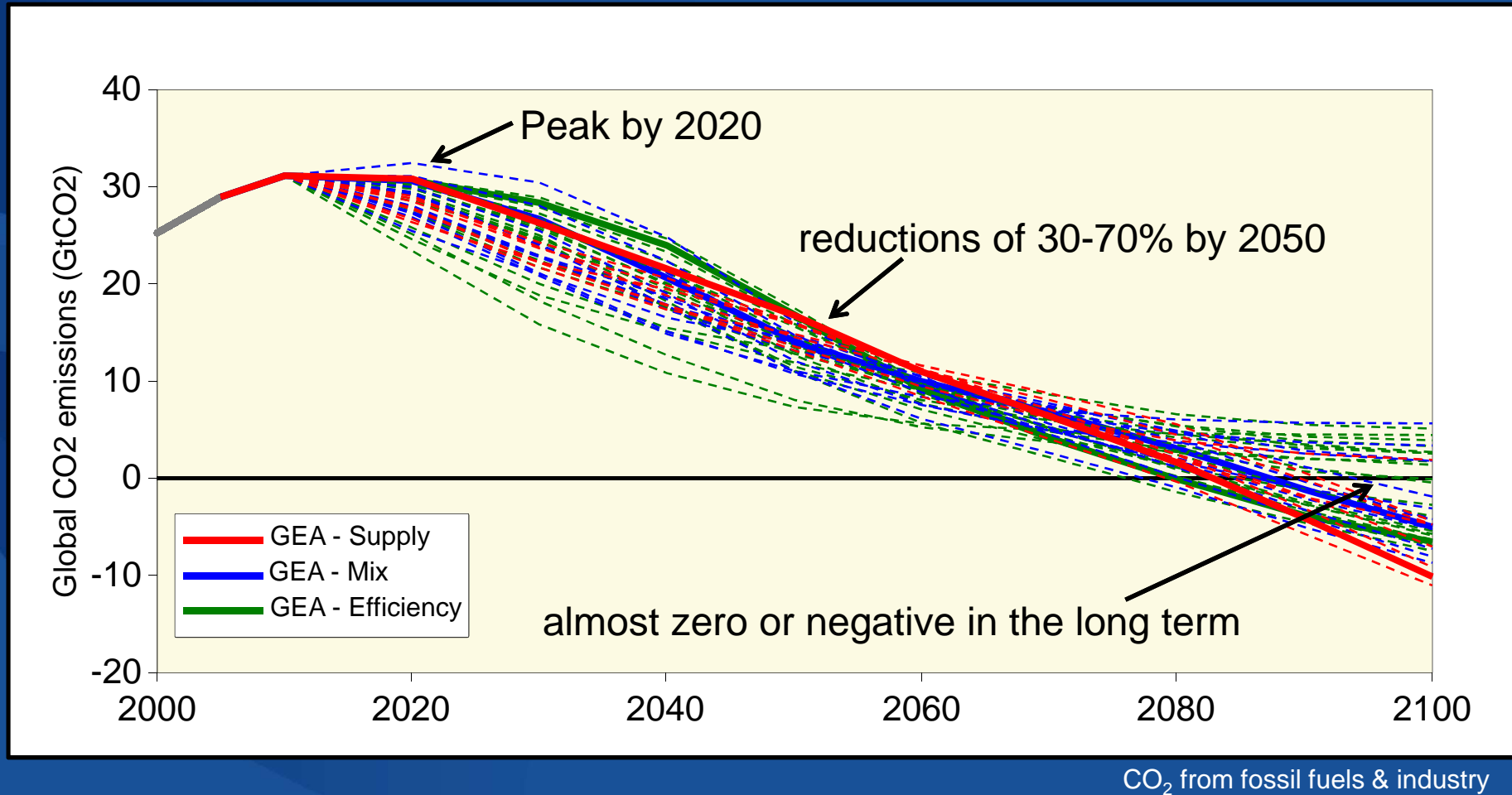
Stringent pollution/access policies by 2030



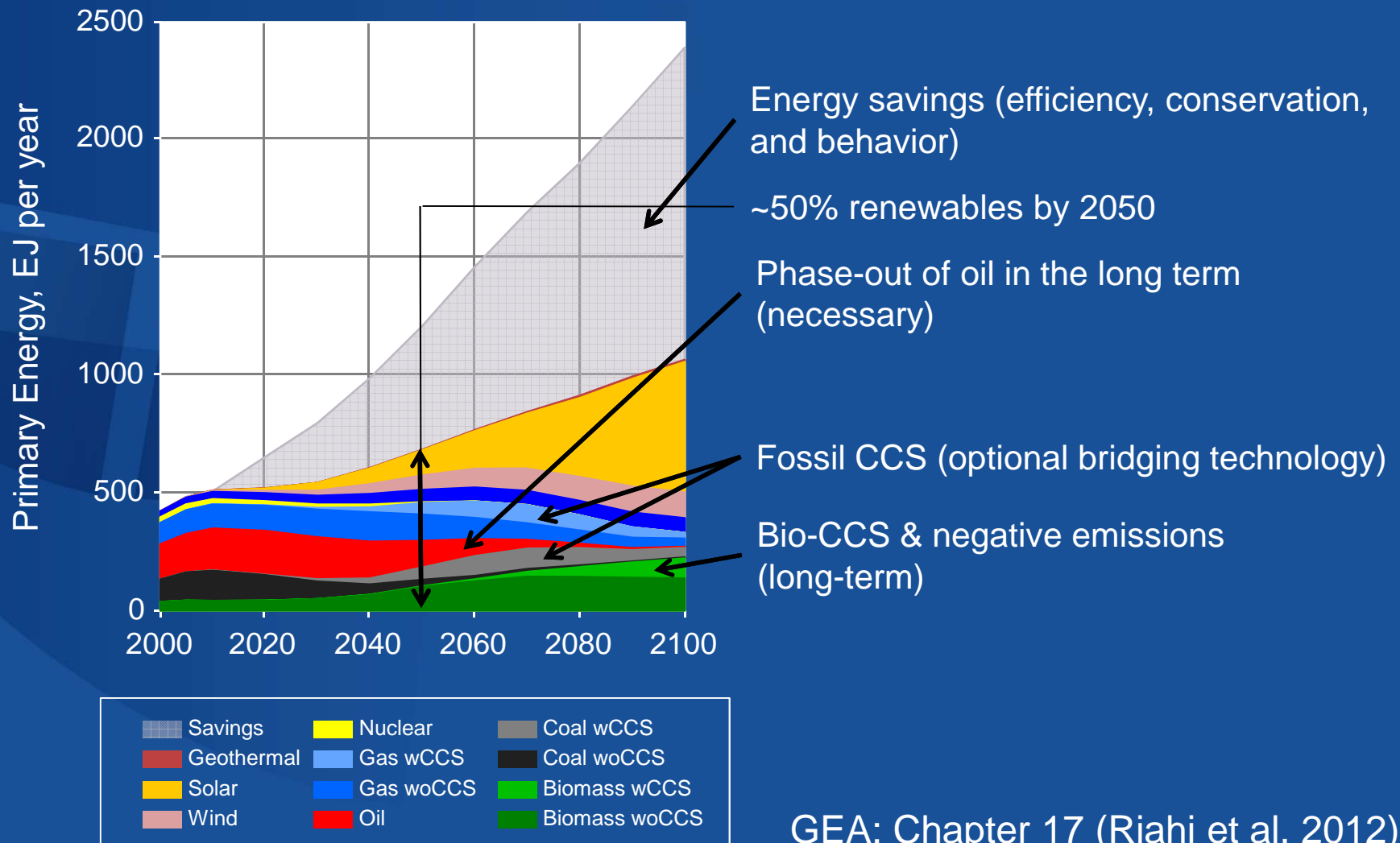
2.6 million lives saved each year

Global CO₂ Emissions

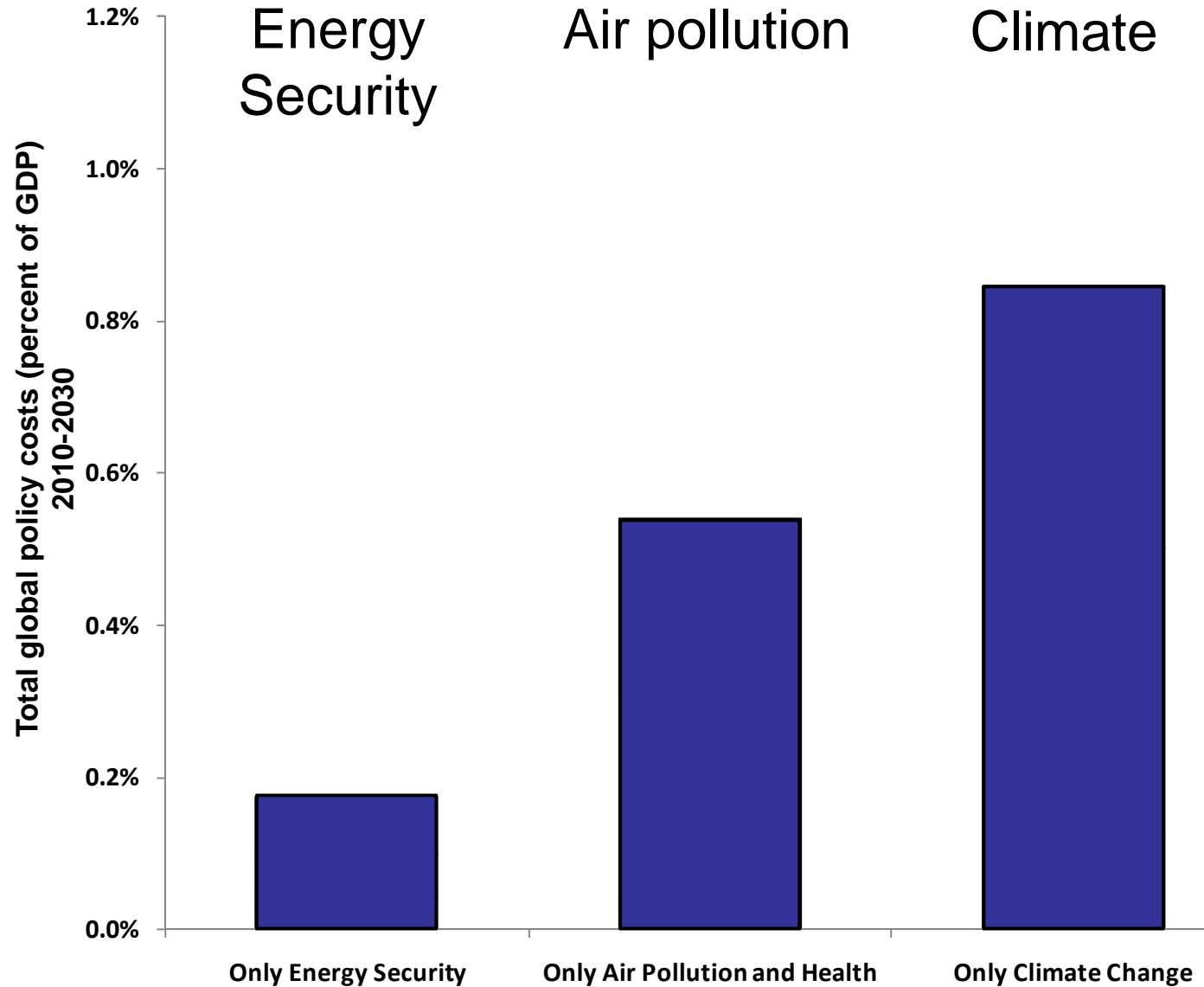
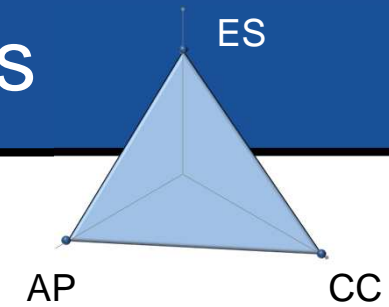
Limiting temperature change to below 2°C



Efficiency & Demand-side Focus (= high flexibility for supply)



Policy Costs and Synergistic Effects



McCollum et al, 2012 (*Nature Climate Change*)