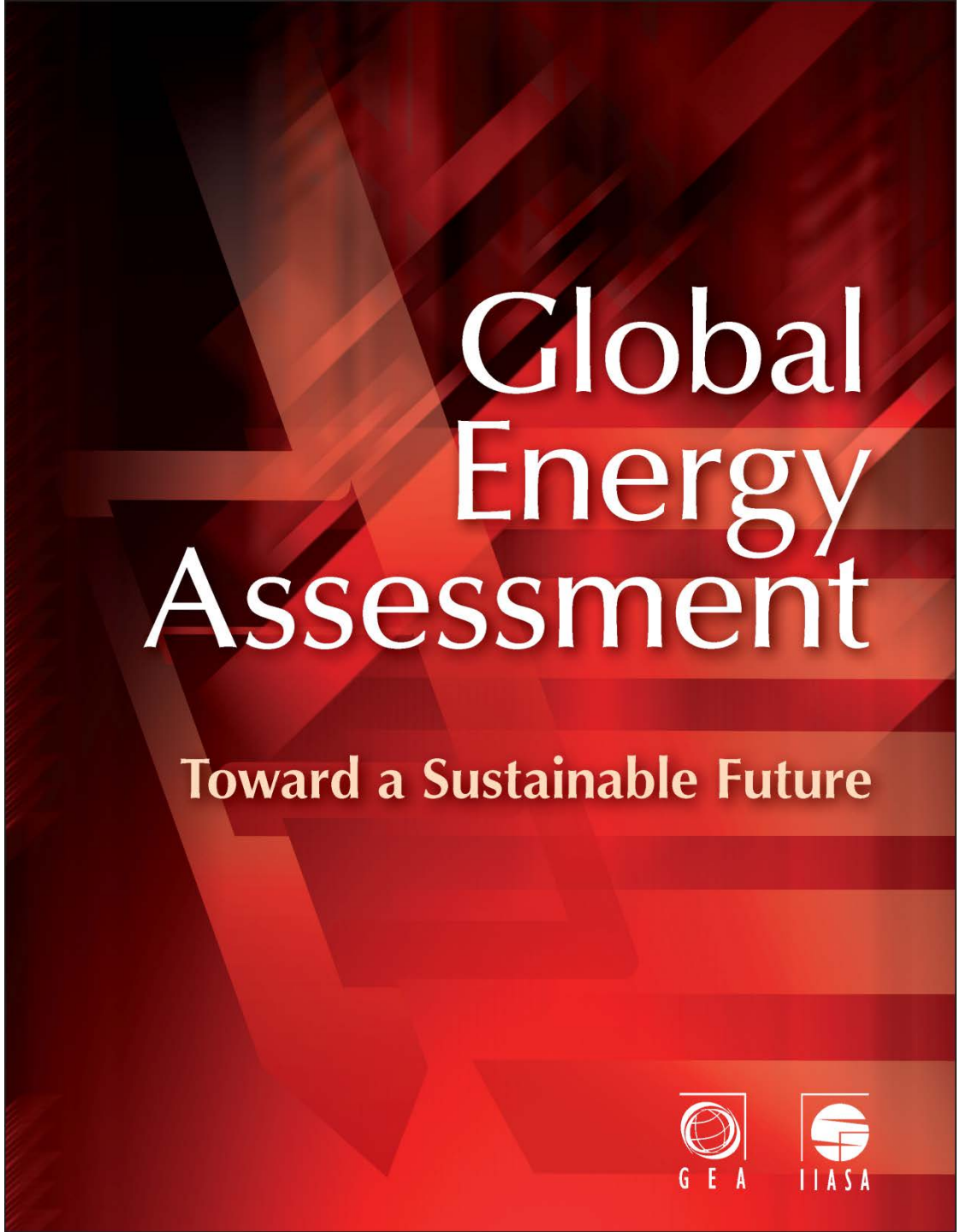
Global
Energy
Assessment
Toward a Sustainable Future
GEA
IIASA

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- Climate Works Foundation
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- Swedish Research Council for Environment, Agricultural Sciences and Spatial Planning (FORMAS)
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- United Nations Environment Programme (UNEP)
- United Nations Foundation (UNF)
- United Nations Industrial Development Organization (UNIDO)
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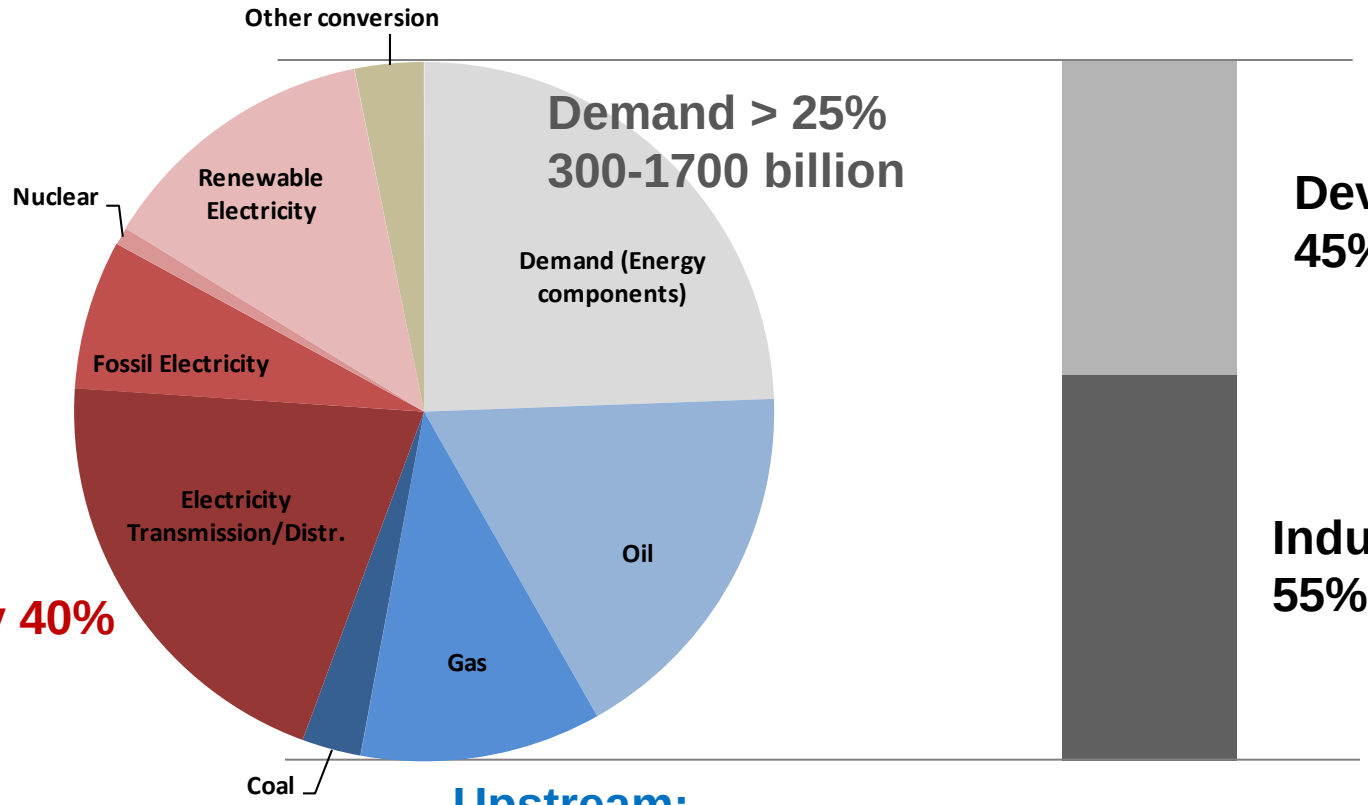
The Global Energy Challenge

Major transformations are required if future energy systems are to be affordable, safe, secure, and environmentally sound. There is an urgent need for a sustained and comprehensive strategy to help resolve the following challenges:

- Providing clean and affordable energy services for all;
- Increasing energy security for all nations, regions, and communities;
- Reducing GHG emissions to limit global warming to less than 2° C above pre-industrial levels;
- Reducing indoor and outdoor air pollution from fuel combustion and its impacts on human health; and
- Reducing the adverse effects and ancillary risks.

World Energy Investments 2010

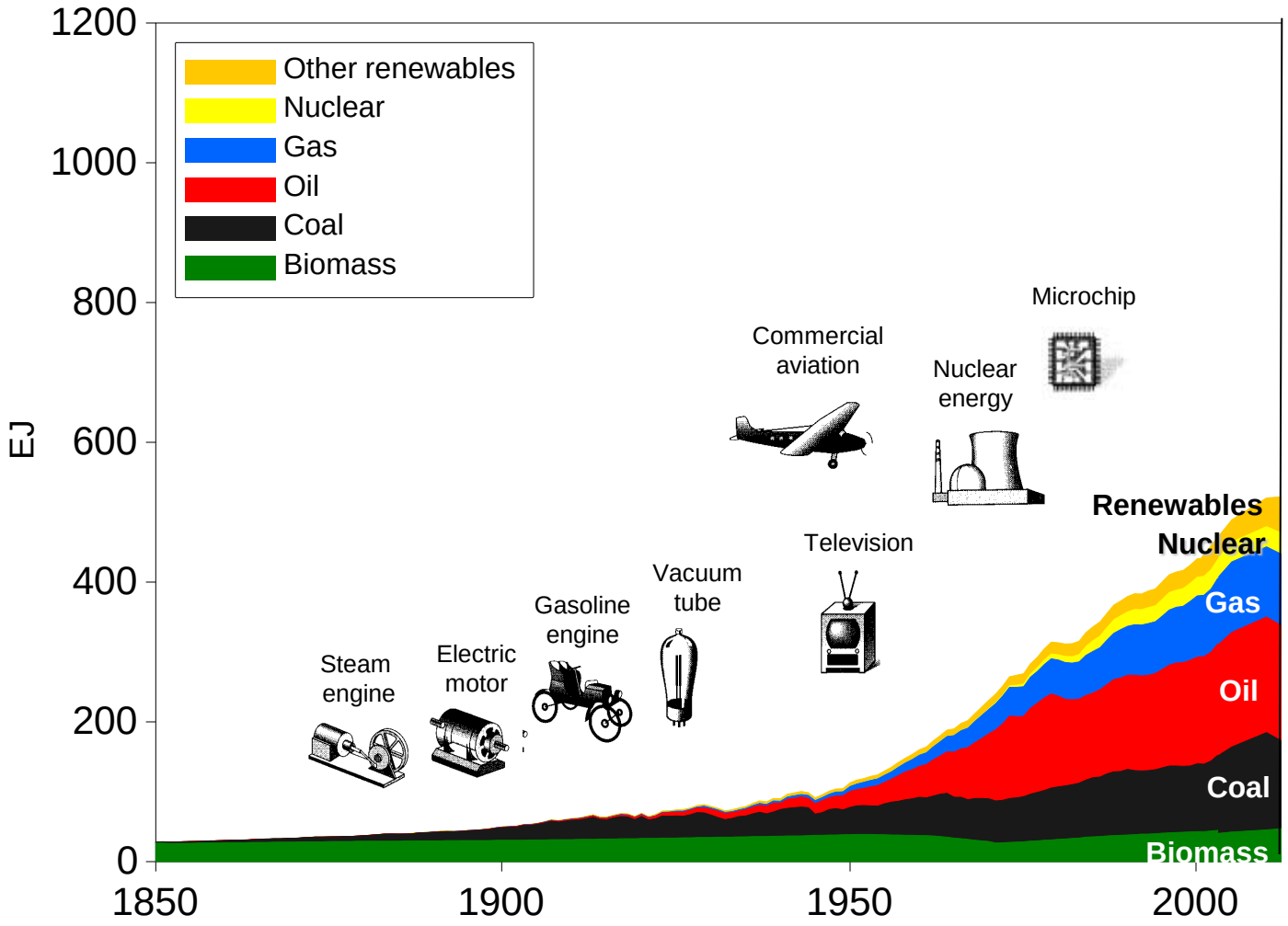
US $1.3 trillion (incl. demand)



Electricity 40%

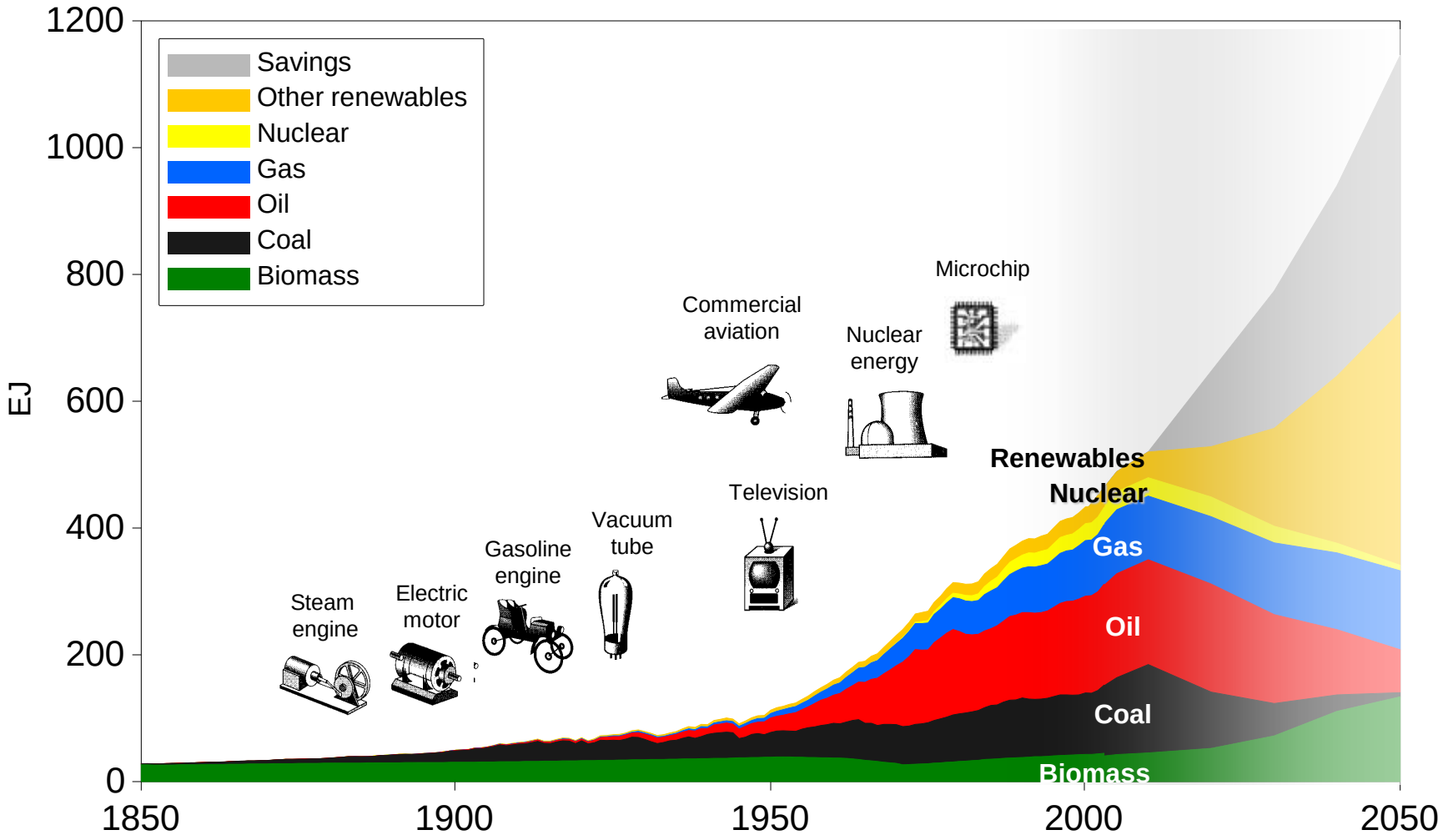
Upstream: Fossil Fuels 30%

Global Primary Energy



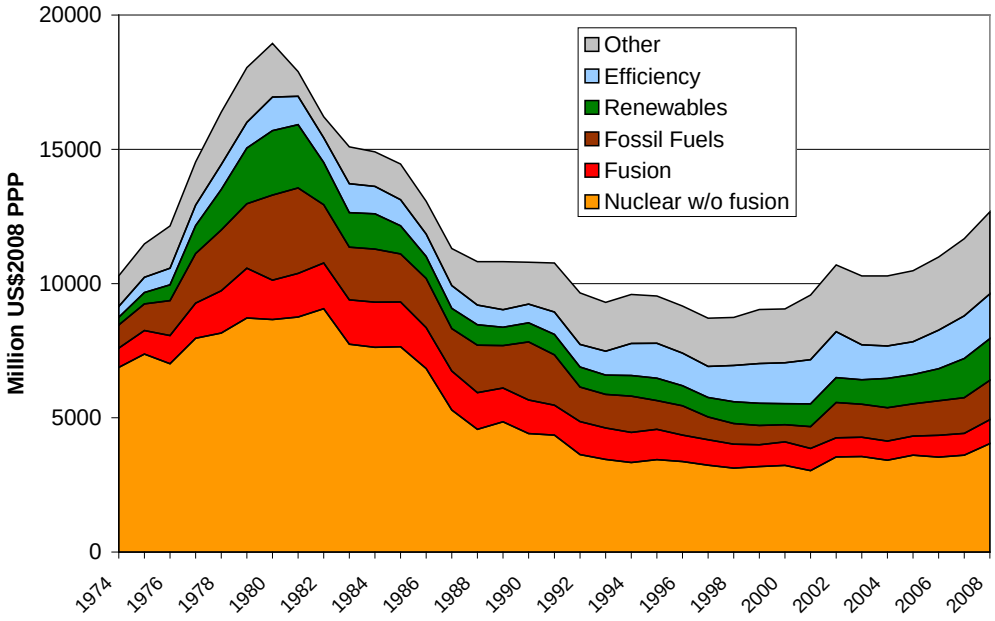
Source: Riahi et al, 2012

Global Primary Energy



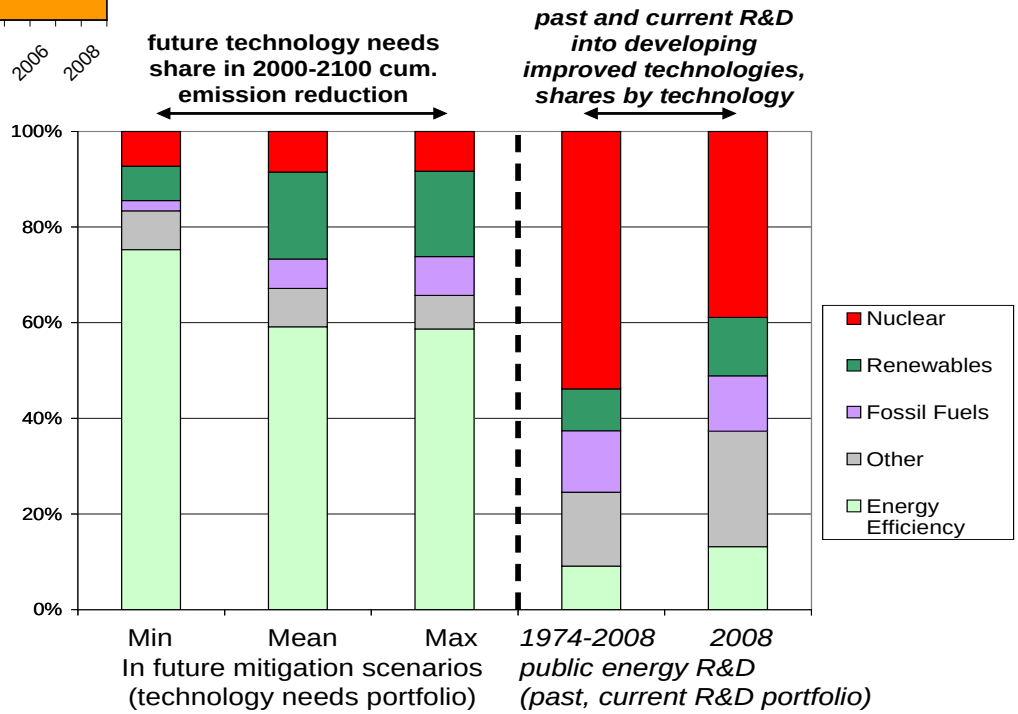
Source: Riahi et al, 2012

New Directions for R&D



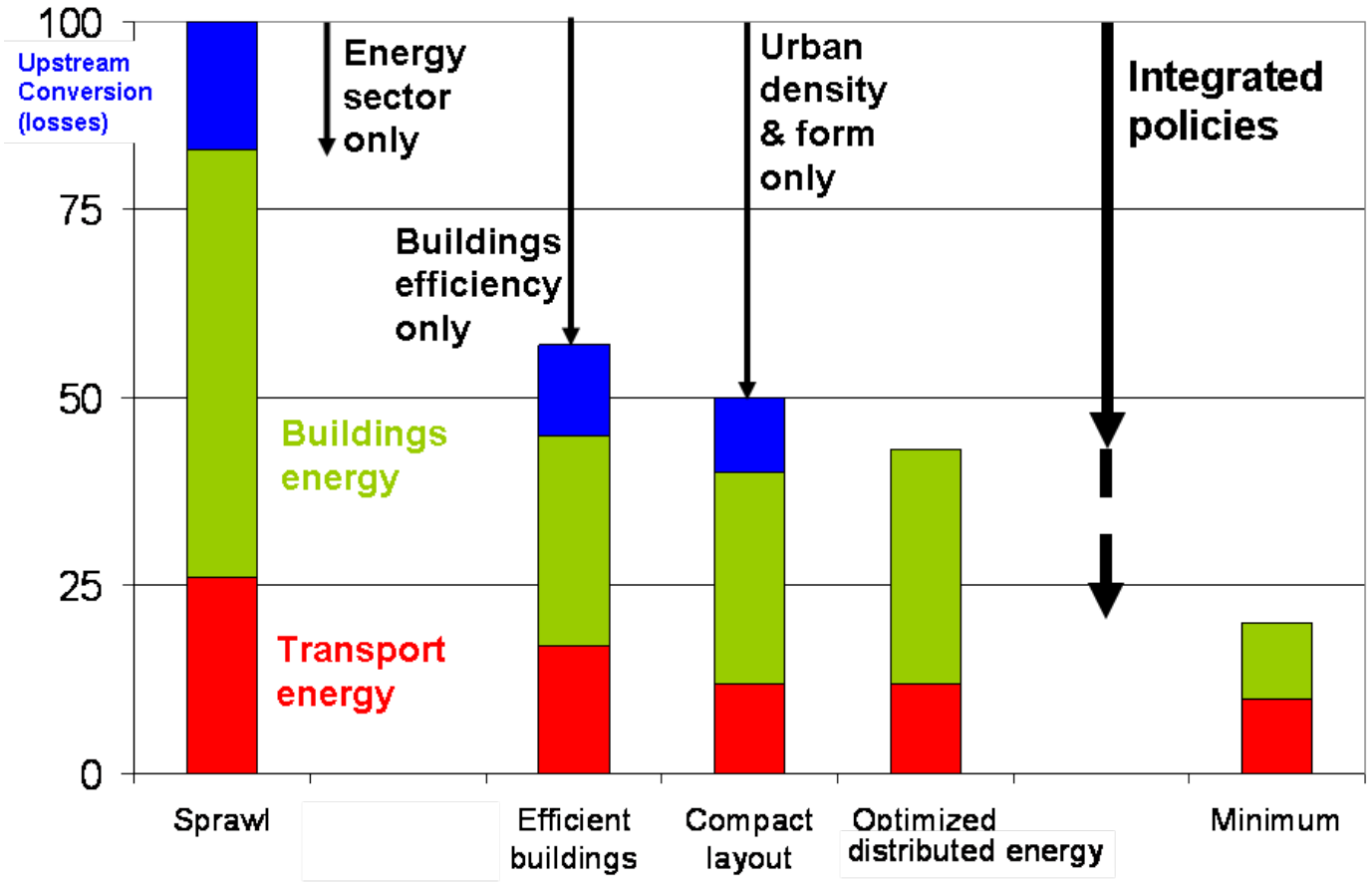
Public Sector Energy RD&D in IEA Member countries by major technology group

Distribution of past and current energy R&D as compared to future technology needs from the pathways analysis



Source: Grubler et al, 2012

Policy Integration at the Urban Scale



Simulated energy use for an urban settlement of 20,000 inhabitants using the SimCity Model combining spatially explicit models of urban form, density, and energy infrastructures, with energy systems optimization.

Source: Grubler et al, 2012

2012 INTERNATIONAL YEAR OF
SUSTAINABLE ENERGY
FOR ALL

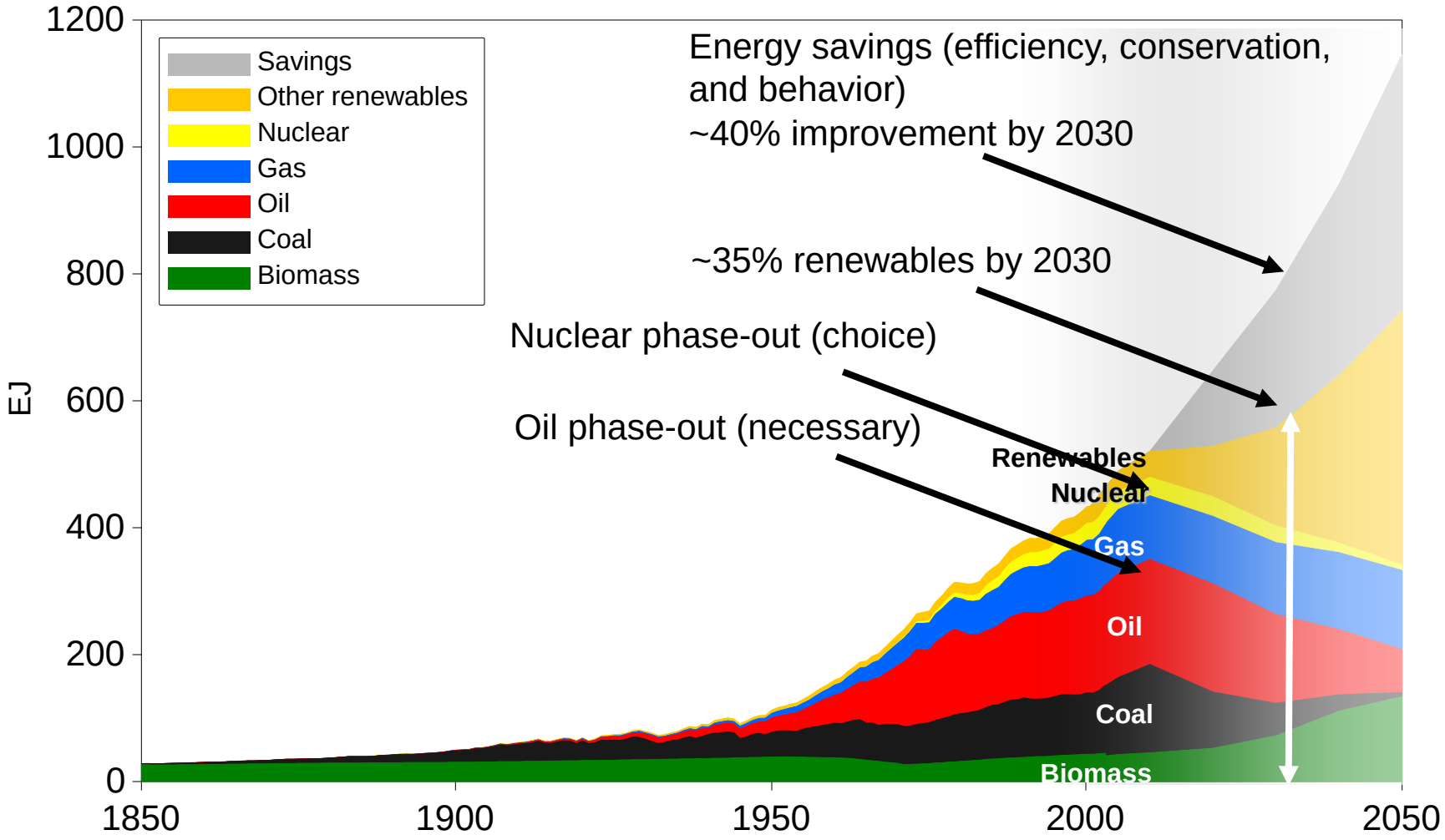
2030 Energy Goals

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

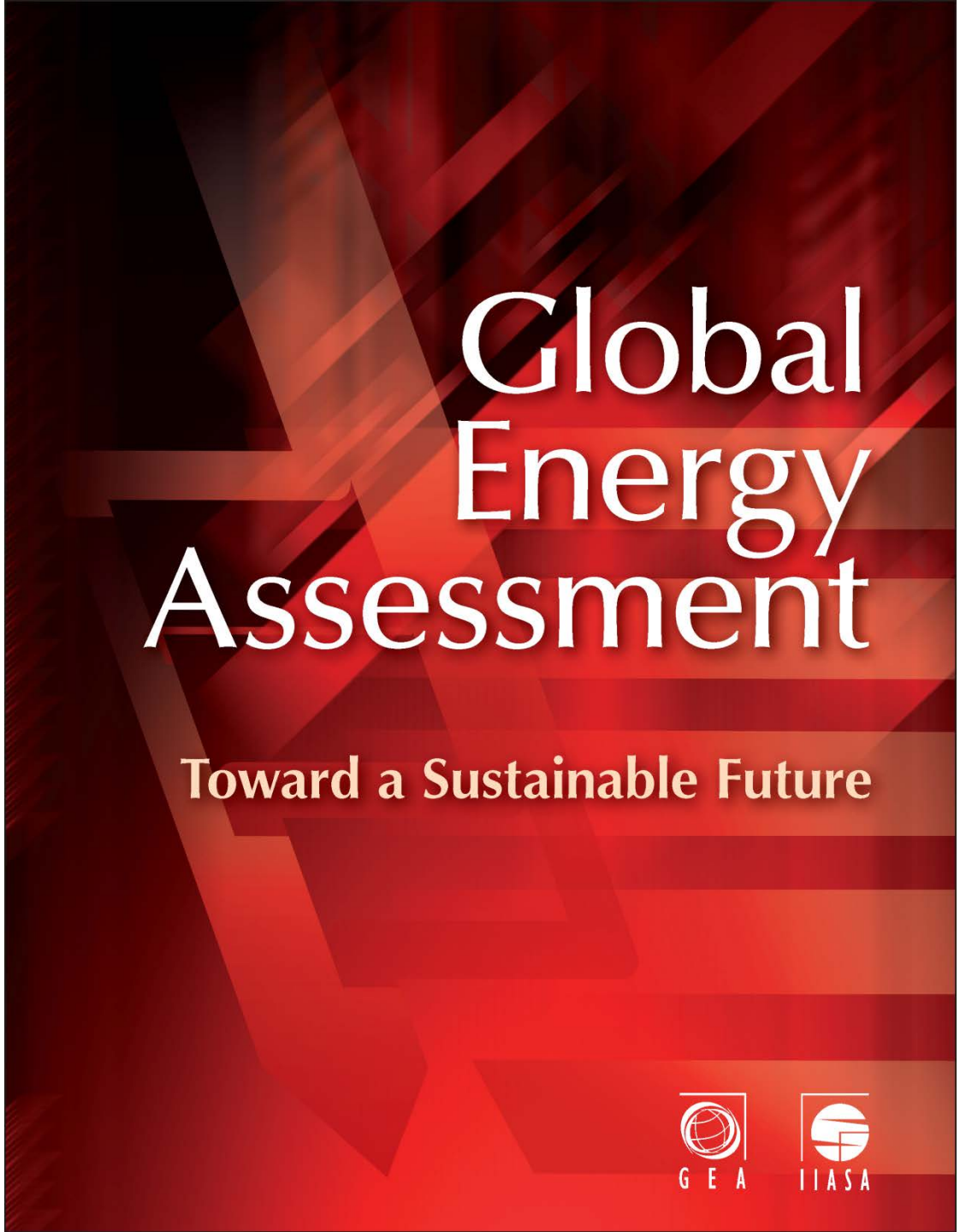
Aspirational & Ambitious but Achievable

Global Primary Energy

no CCS, no Nuclear



Source: Riahi et al, 2012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