Sustainable Development and Low Emission Development Strategies

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Green Growth and Climate Change Negotiations: Now and Future
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Presentation Outline

- Link between Green Growth and low carbon development

- OECD/IEA vision of Low-Emission Development Strategies
  ⇒ The Institutional Framework

- Illustration of low-carbon emissions pathways
  ⇒ Preliminary results from forthcoming OECD Environmental Outlook to 2050

Green growth

- Low-carbon development is closely linked to green growth
- The OECD Green Growth Strategy, delivered at the 2011 OECD Ministerial Council Meeting (MCM), supports national and international efforts to achieve green growth
- Green growth aims to help countries foster economic growth and development while ensuring that natural assets continue to provide the resources and environmental services on which our well-being relies
- Green growth develops a flexible policy framework that can be tailored to different national circumstances and stages of development.

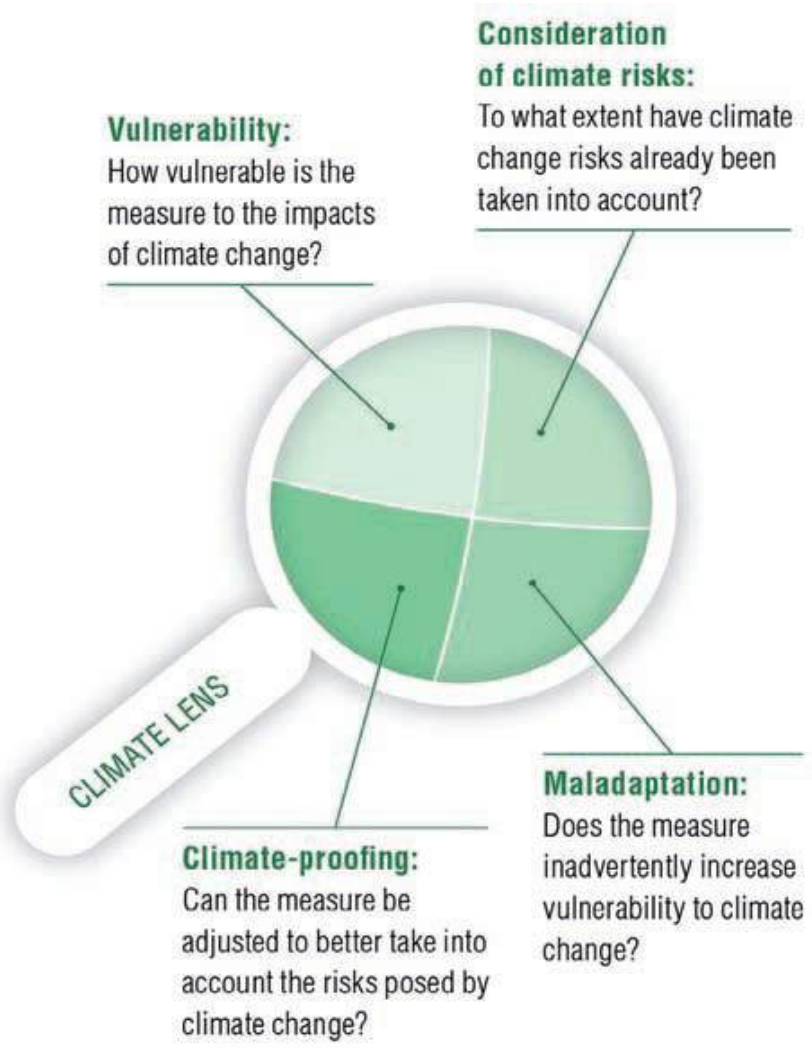
Green growth and energy

- Challenges
  - Change is required due to countries being locked into polluting and greenhouse gas emitting energy sources
  - Fossil fuel dominate energy supply and innovation in cleaner technologies will take time
- Opportunities
  - Clean energy growth enables opportunities for new green industries, jobs and technologies, while managing the structural changes associated with the transition to a low-carbon economy
- Current energy trends
  - Unsustainable to achieve a low-carbon growth due to rising energy demand in coal-based economies and increased coal-fired power generation in response to higher oil and natural gas prices.

Integrating climate change into development co-operation

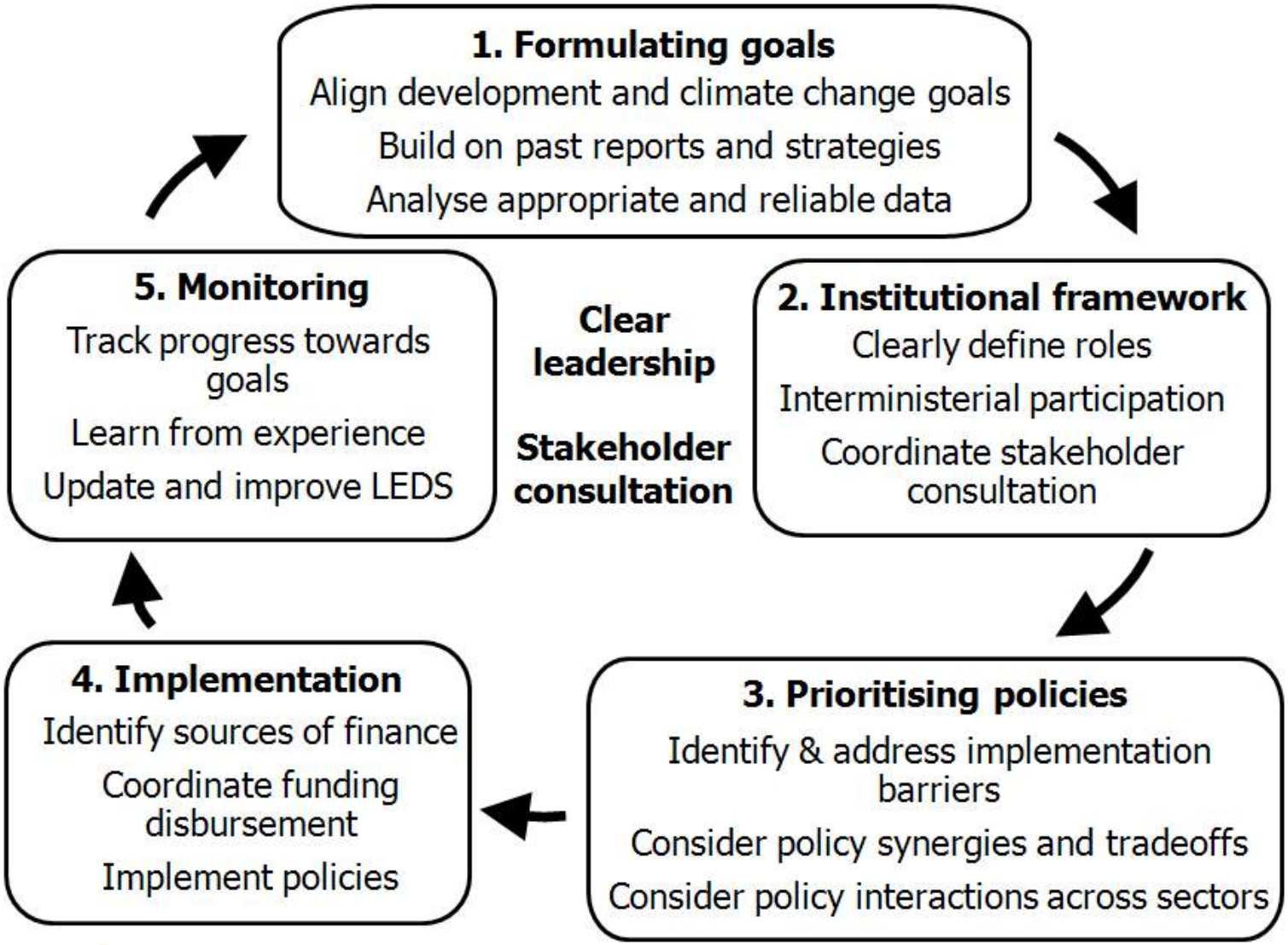
Integrating climate change in development co-operation can help developing countries

- Deal with climate risks and become more resilient to climate change
- Develop on a low-carbon path
- Innovate or adopt cleaner technologies to reduce present and future GHG emissions



Source: OECD (2009), *Integrating Climate Change Adaptation into Development Co-operation: Policy Guidance*

LEDS planning cycle and lessons learned



Source: Clapp et al. , OECD (2010), Low emission development strategies (LEDS): Technical, Institutional and Policy Lessons

Potential benefits and challenges

Benefits

- Policy integration
- Coordination
- Communication
- Early signals for private sector
- Global emissions trajectory
- Financing needs

Challenges

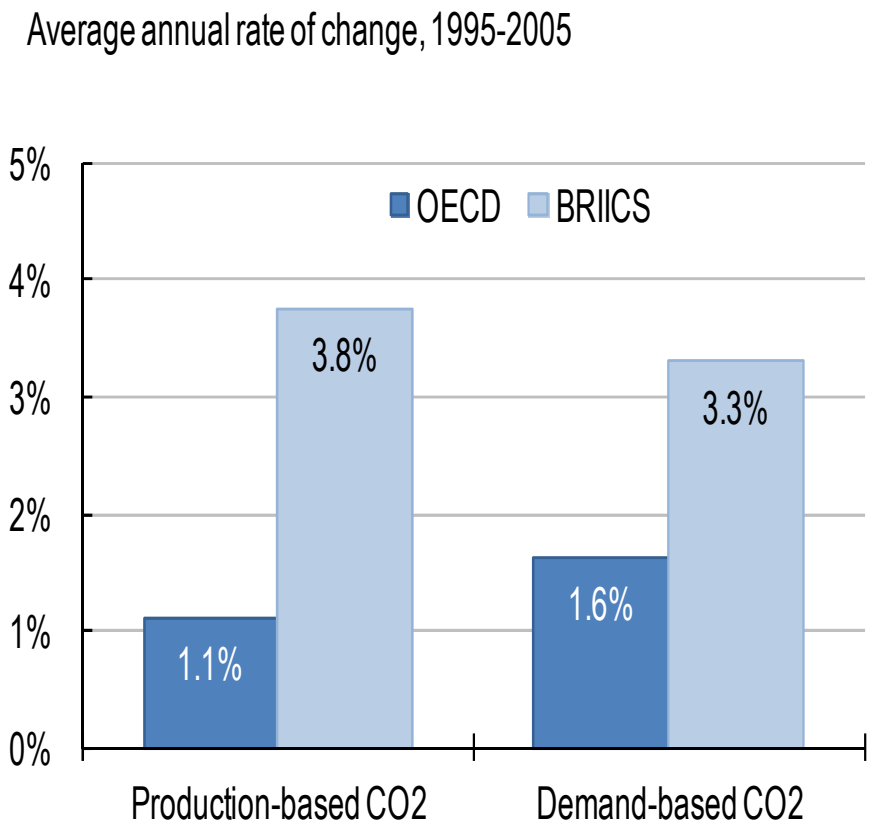
- Agreement across government
- Data issues
- Barriers to implementation
- Capacity

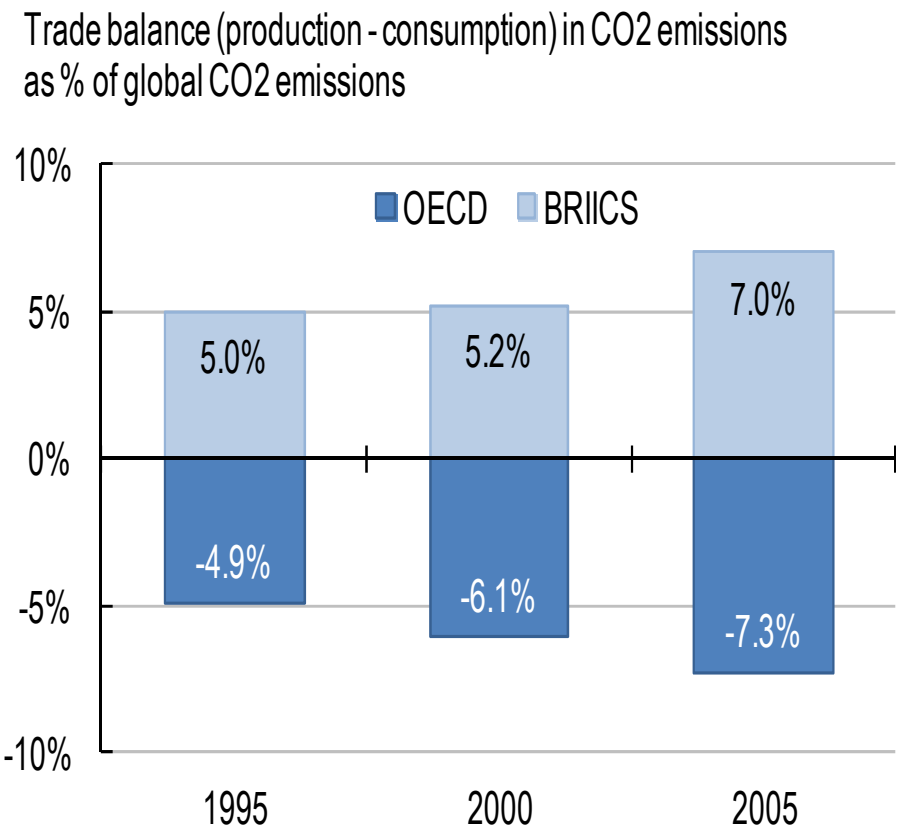
LEDS Summary

- LEDS provides added-value for domestic and international stakeholders
- Support is needed to address challenges in LEDS preparation
- Preparing a LEDS should not slow down NAMA implementation
- LEDS should not be a pre-condition for financing

Contrasted trends on recent decoupling between GDP growth and GHG emissions

Change in production- and demand-based CO2 emissions

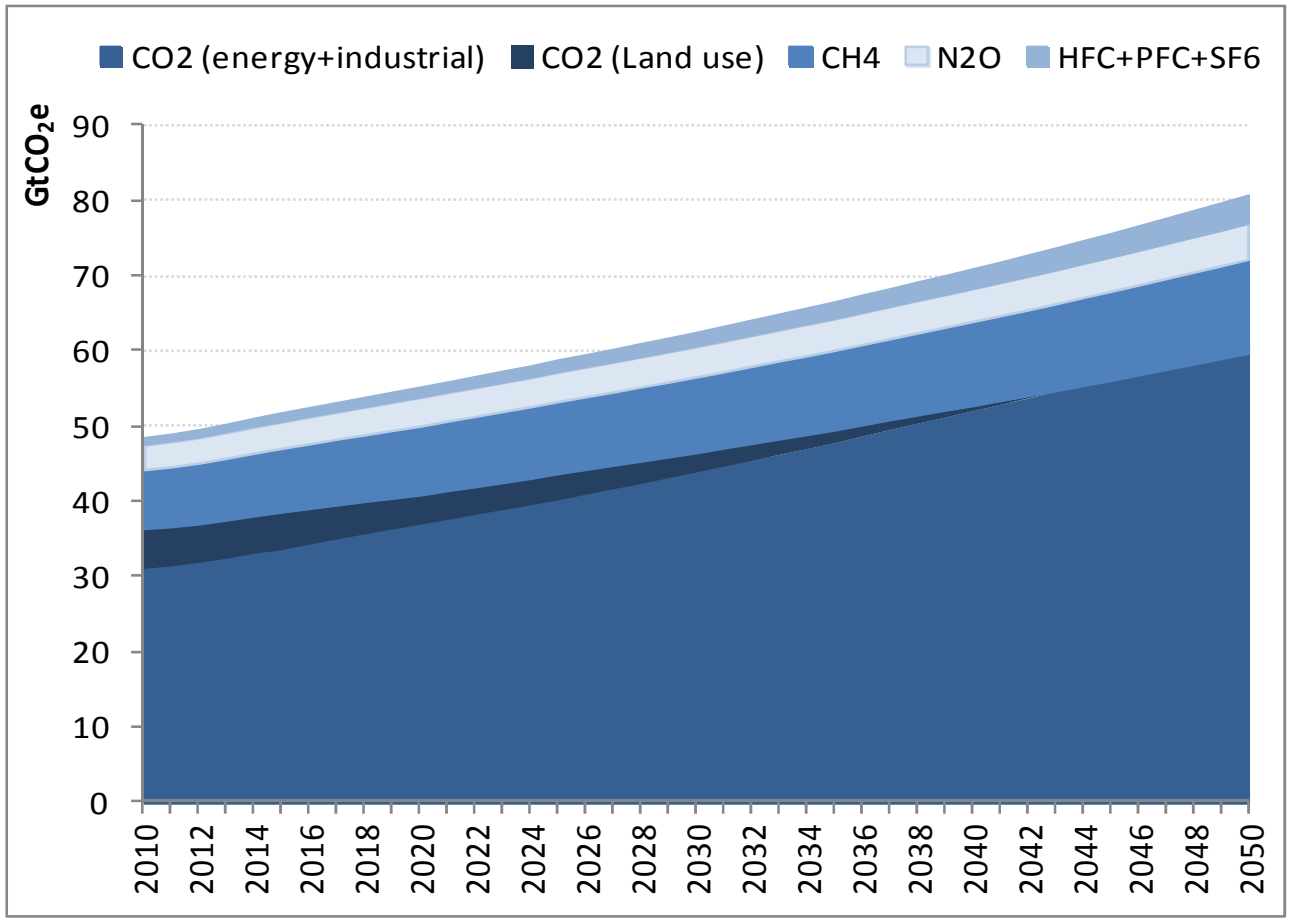




Demand-based measures reflect direct and indirect emission contents in final demand, but the link with policy is more complex than with production-based accounting.

GHG emissions by gas – Baseline

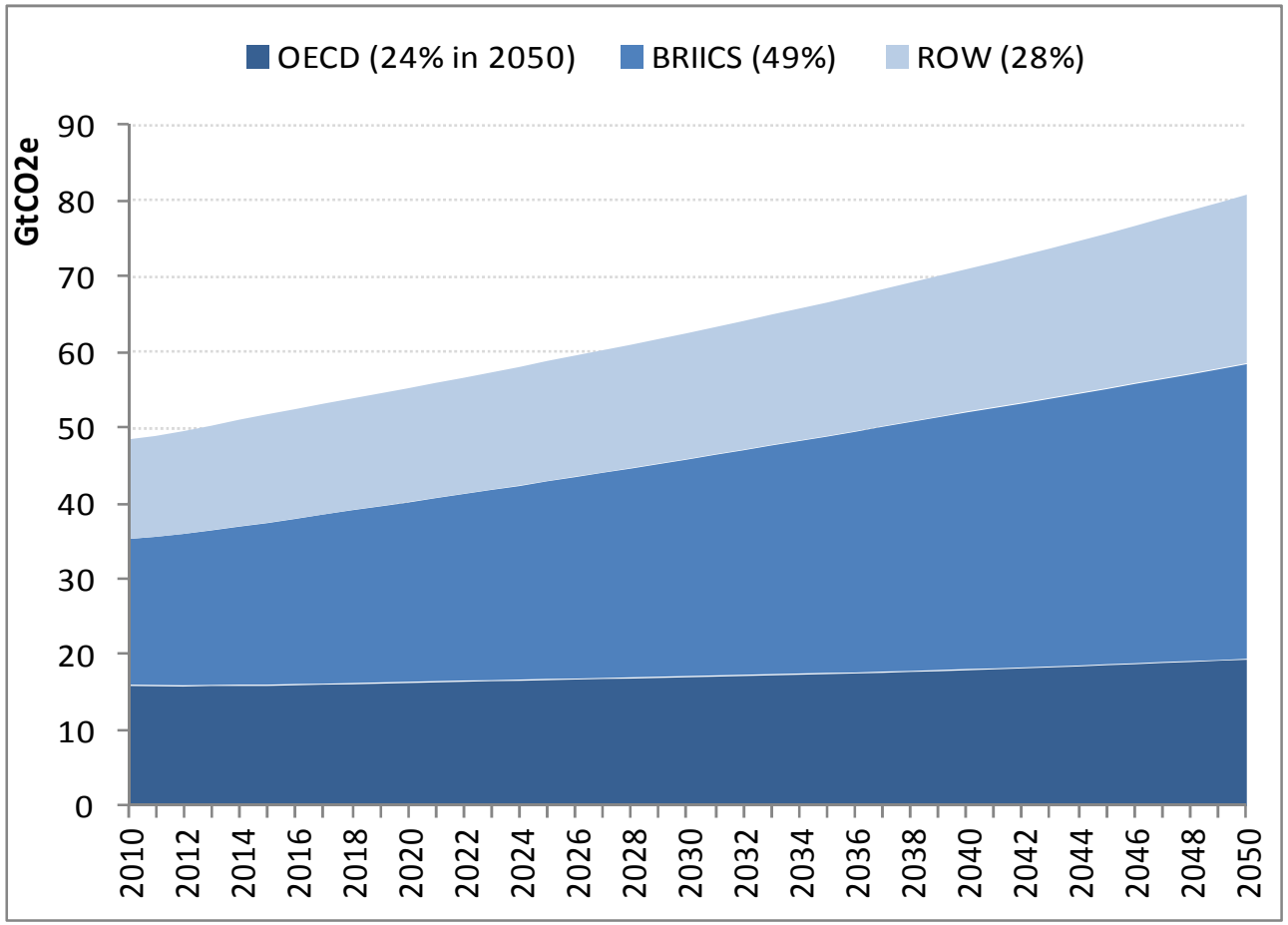
Insights from OECD Environmental Outlook to 2050



CO2 emissions are projected to remain the largest contributor to global GHG emissions.
Global average temperature would likely reach 3.6-5.6°C.

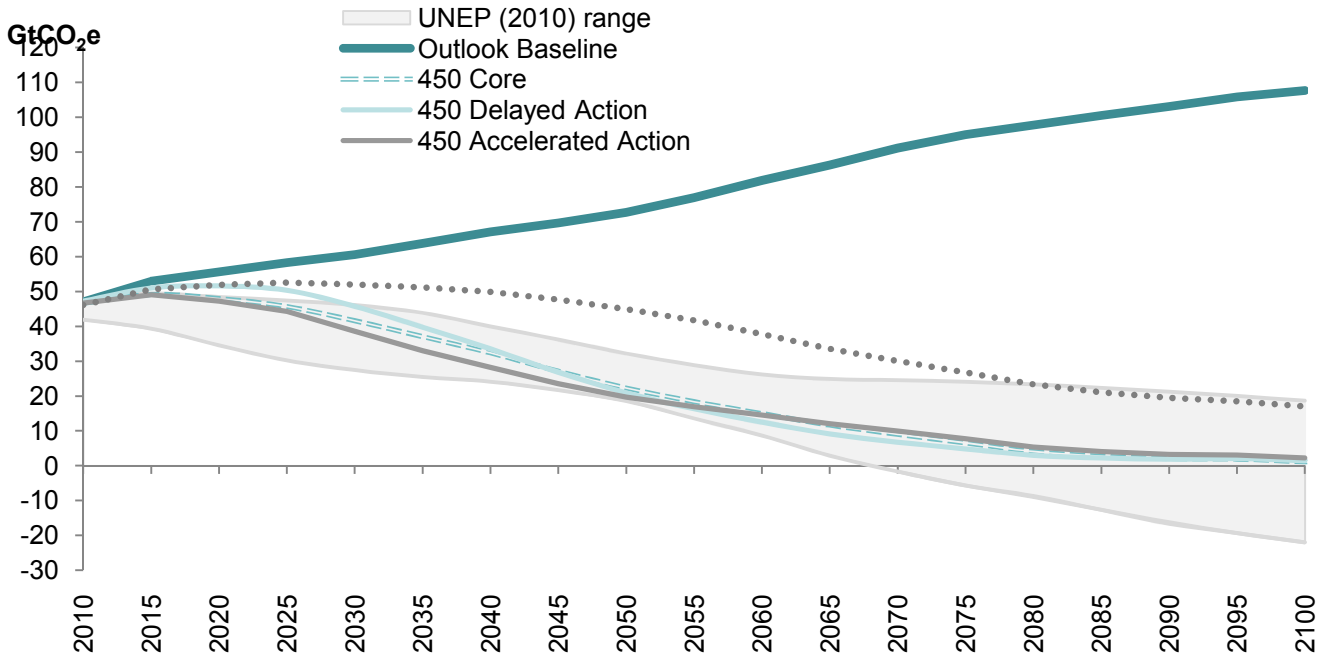
GHG emissions by country – Baseline

Insights from OECD Environmental Outlook to 2050



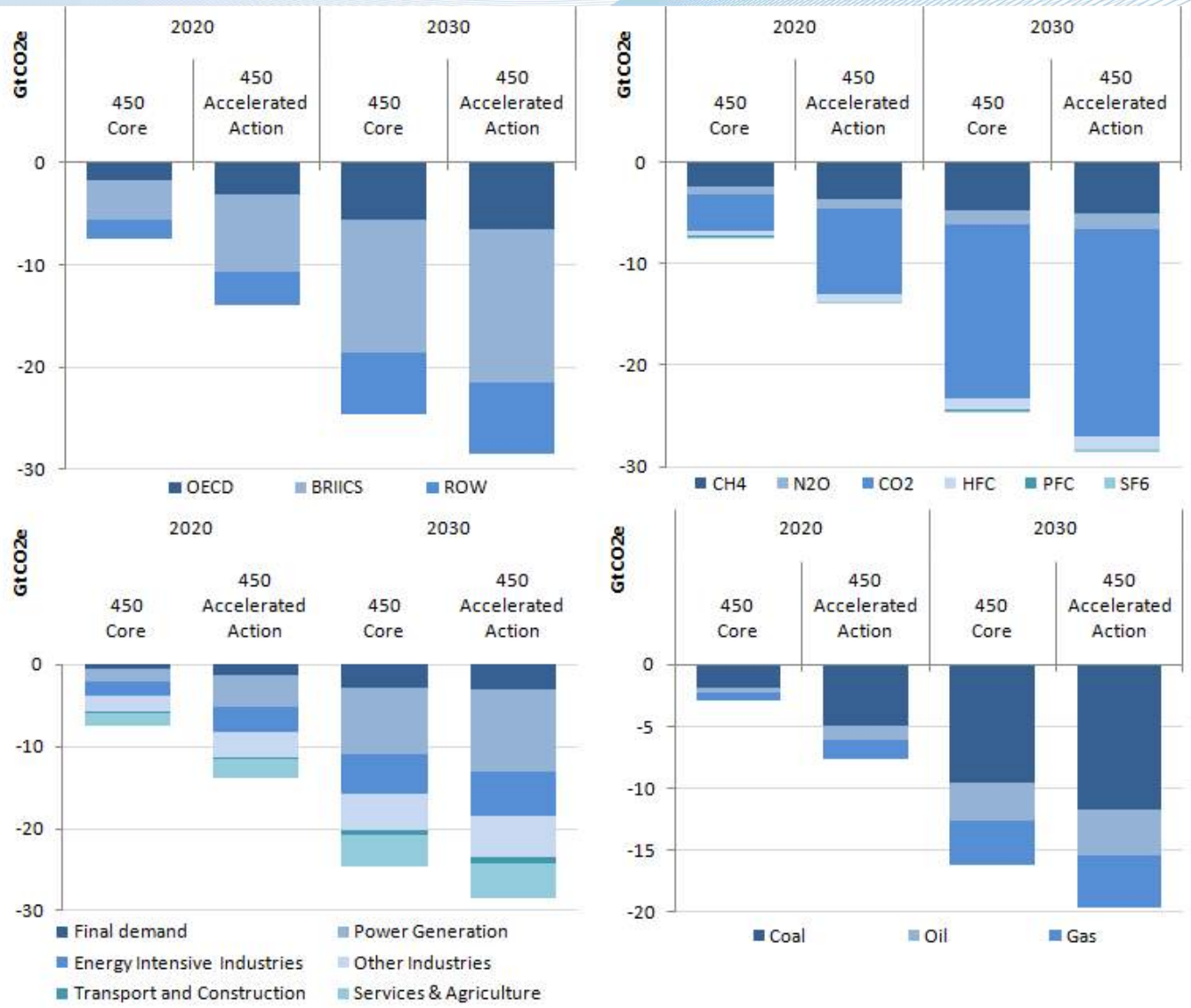
BRIICS emissions grow at rate exceeding +2% p.a. to 2050 while OECD emissions tend to level off.

Need to reverse current trends
Alternative emission pathways

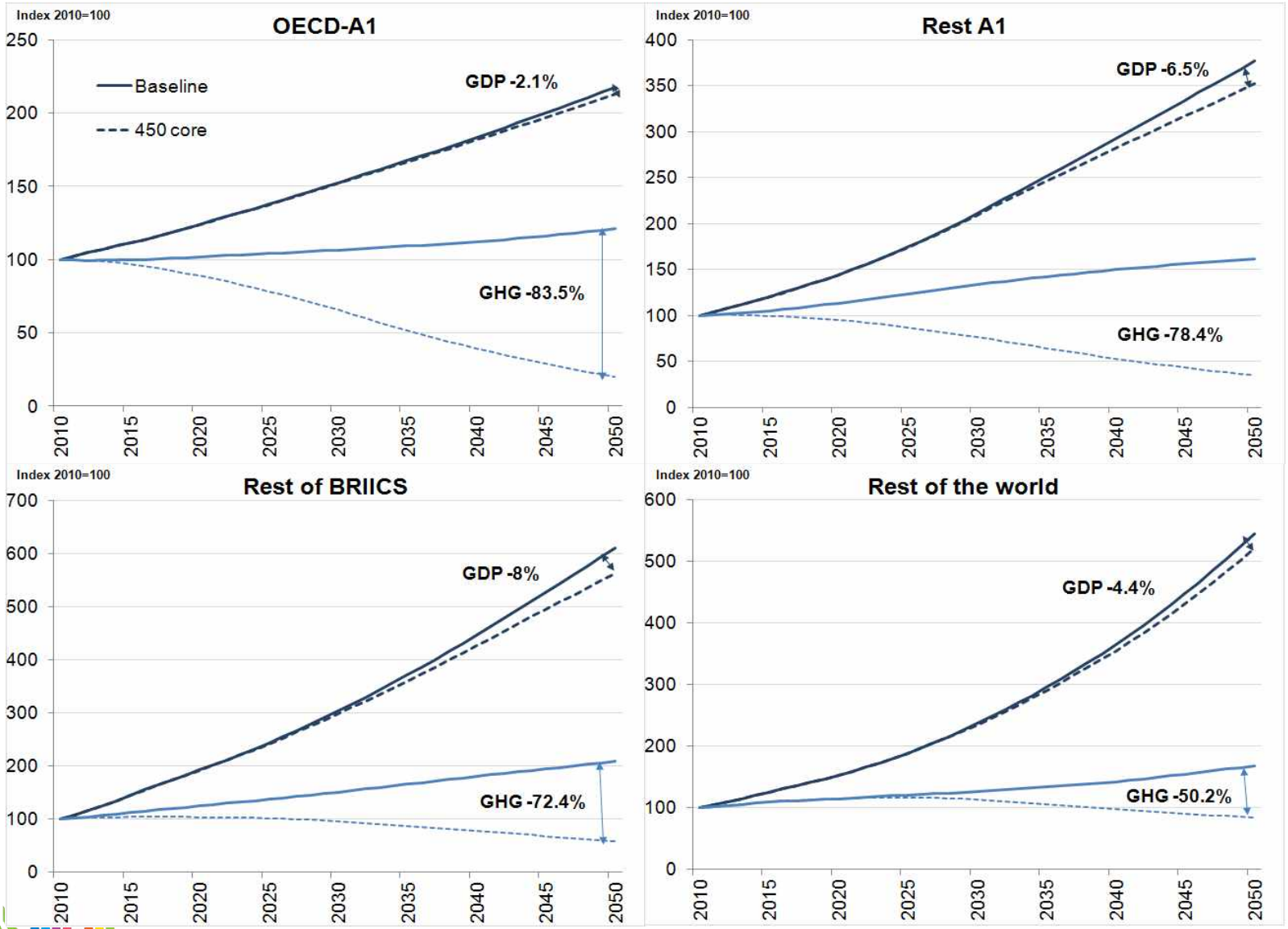


		Cumulative GHG emissions (GtCO2e)			
		2010 - 2020	2020 - 2030	2030 - 2050	2050 - 2100
450 Core	Concentrations of GHGs limited to 450 ppm by the end of the 21st century; policy starts in 2013; full flexibility across time, sources and gases; global carbon market	485	450	635	405
450 Accelerated Action	As 450 Core, plus additional mitigation efforts until 2030	480	435	560	430
450 Delayed Action	As 450 Core, but until 2020 no mitigation action beyond Copenhagen pledges & fragmented carbon markets	505	495	655	335
550 Core	As 450 Core, but aiming at 550 ppm by the end of the century	505	525	985	1400

Low emission development: The issue of timing

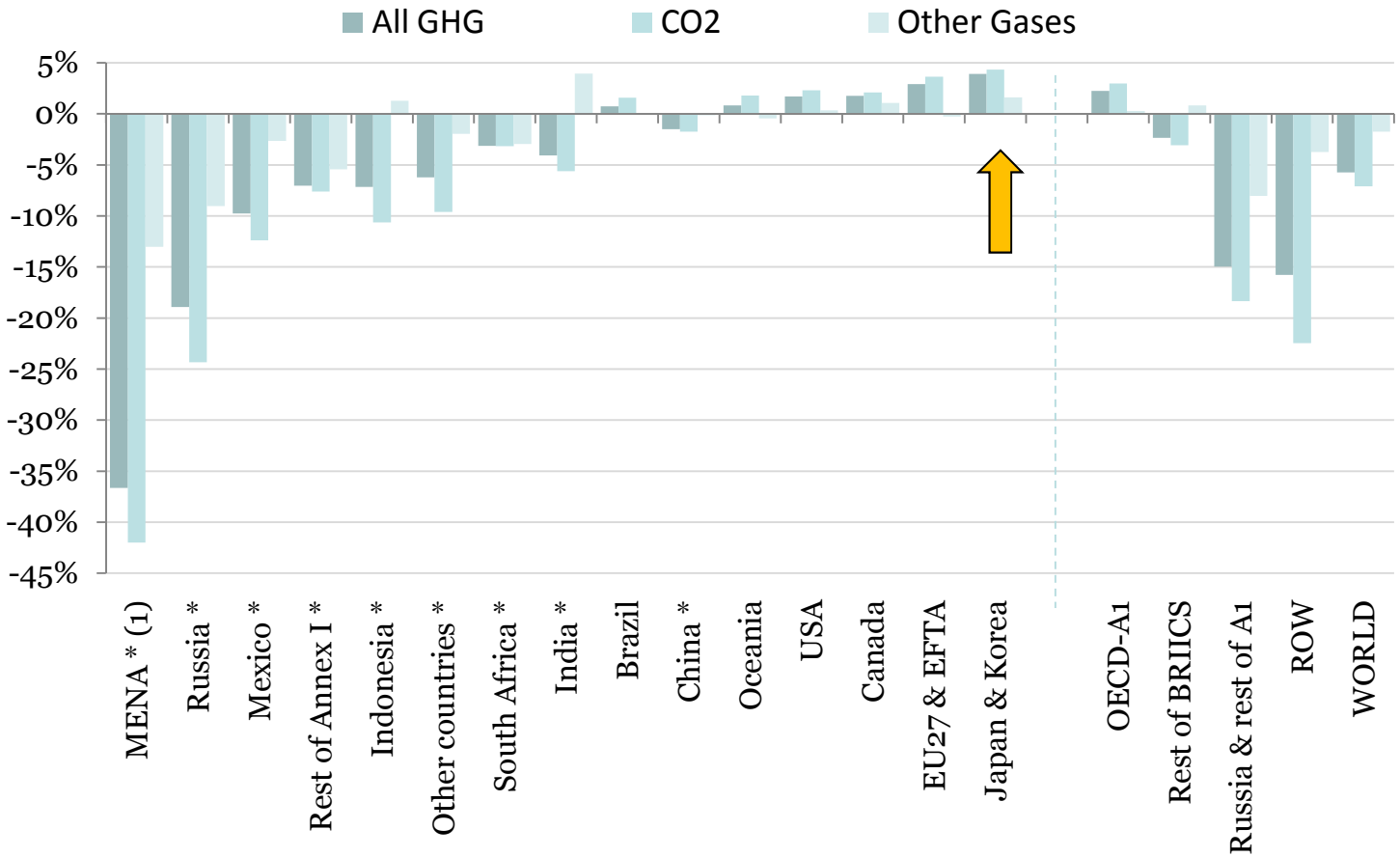


450ppm Core - Emissions and cost of mitigation



Note: Emission projections are before permit trading, i.e. reflect emission allowances.
Source: OECD Environmental Outlook to 2050 projection, based on the ENV-Linkages model.

Impact of phasing out fossil fuels subsidies as a stand-alone policy on GHG emissions in 2050



Note: Emissions exclude LULUCF.
* Regions in which fossil fuel subsidies have been removed
(1) Middle-East and Northern Africa
Source: OECD ENV-Linkages model using IEA fossil-fuel subsidies data (IEA,2010)

Phasing-out fossil fuel subsidies could reduce global GHG emissions by almost 6% globally by 2050

Impact of phasing out fossil fuels subsidies as a stand-alone policy on GHG emissions in 2050

Real income impacts (in % deviation from baseline)

Region	2020			2050		
	Only FFS reform	450 Core no reform	450 Core with FFS reform	Only FFS reform	450 Core no reform	450 Core with FFS reform
WORLD	0.1	-0.1	-0.1	0.3	-6.3	-6.0
OECD A1	0.2	0.0	0.2	0.2	-4.8	-4.5
Rest of BRIICS	0.6	-0.3	0.3	1.1	-11.4	-10.7
Russia & rest of A1	-0.6	-0.4	-1.0	0.2	-14.6	-13.8
Rest of World	-1.2	-0.4	-1.4	-0.3	-2.8	-2.6

Source: OECD ENV-Linkages model using IEA fossil-fuel subsidies data (IEA, 2010)

Removing fossil fuel subsidies lower the global cost of stabilising GHG concentrations but income gains are lower than stand-alone policy

Low emission pathways: The case of South Korea

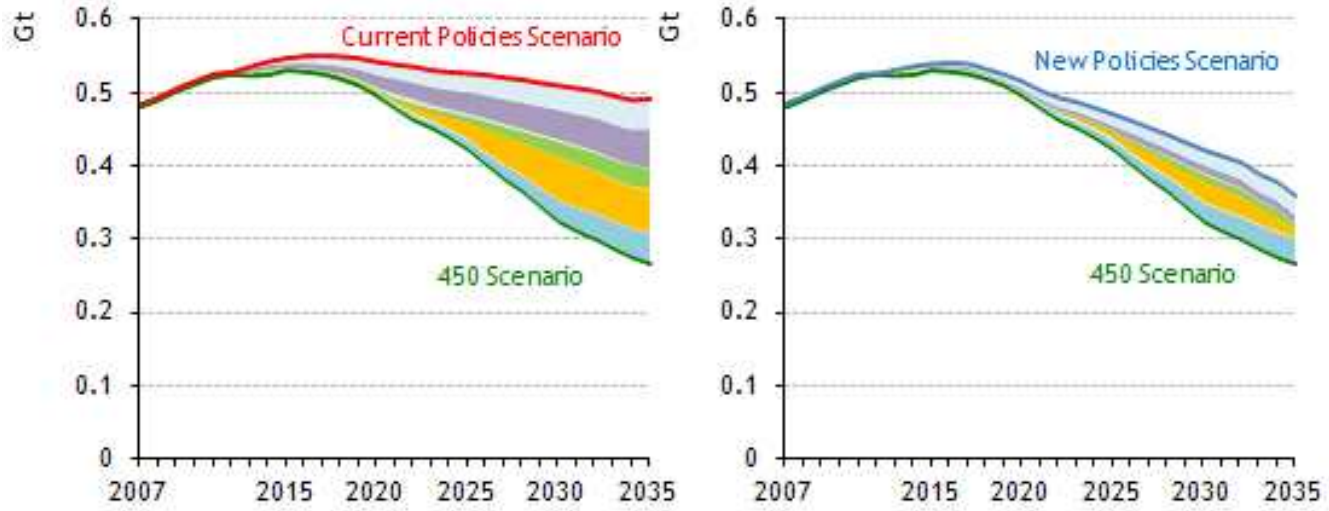
Insights from OECD Environmental Outlook to 2050

Economy-wide indicators for South Korea and Japan in the OECD Baseline simulation

	2010	2020	2050	2010-2050 annual growth rate
GDP PPP (Million US$2010)	5600	6900	9800	1.4%
Population (Million)	175	173	146	-0.5%
GHG Emission ($MtCO_2eq$)	1904	1849	2116	0.3%
Share of CO_2	90%	88%	84%	-0.2%

Relative decoupling between economic growth and GHG emissions. By 2050, CO_2 emissions still represent the bulk of GHGs emissions.

The importance of energy policies in South Korea
Insights from IEA World Energy Outlook 2010

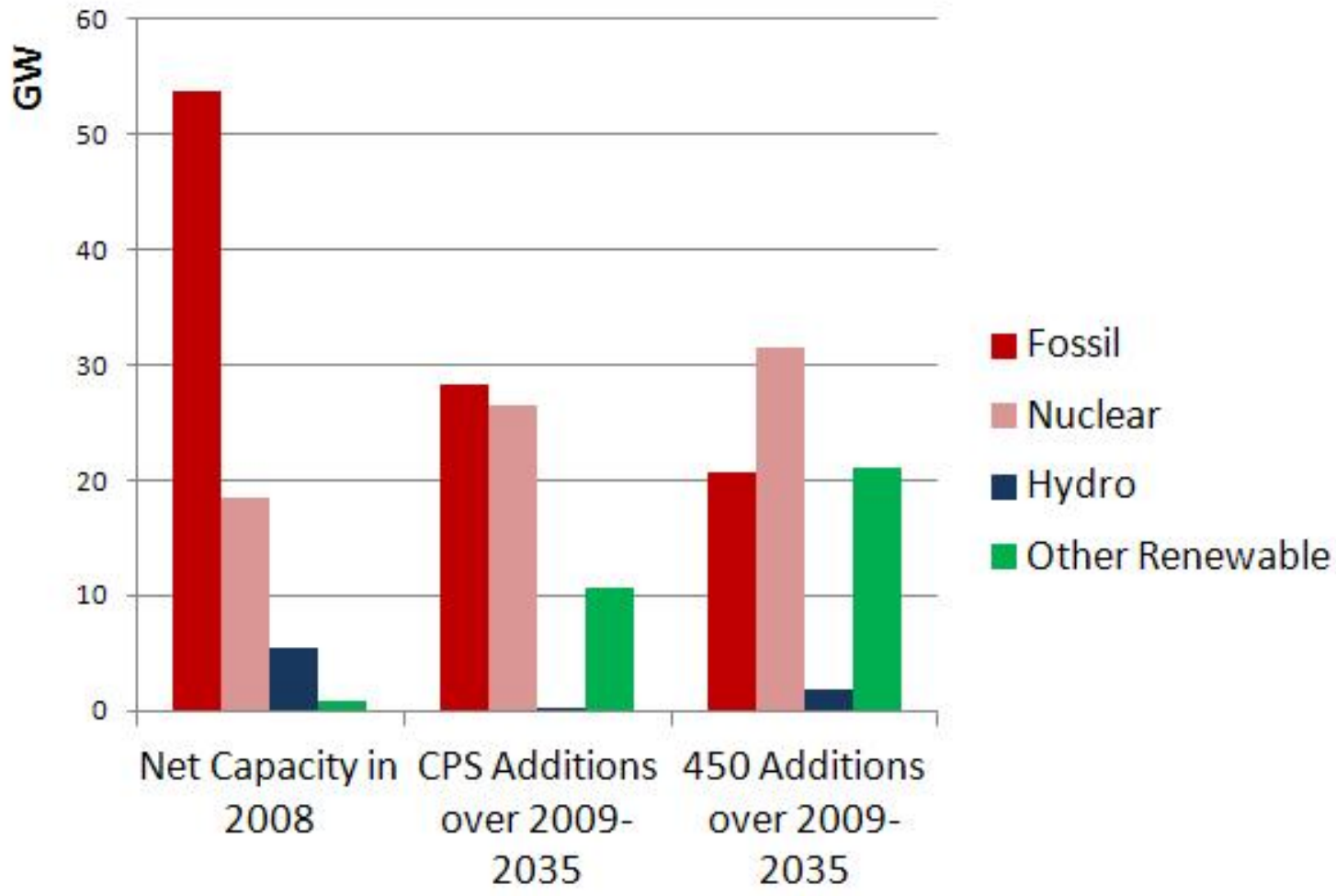


	450 vs CPS		450 vs NPS	
	2020	2035	2020	2035
Efficiency	91%	44%	98%	43%
End-use (Direct)	*43%*	*20%*	*64%*	*31%*
End-use (Indirect)	*39%*	*23%*	*25%*	*11%*
Power plants	*9%*	*0%*	*9%*	*1%*
Renewables	5%	13%	4%	10%
Biofuels	0%	0%	0%	1%
Nuclear	7%	26%	3%	11%
CCS	0%	17%	0%	35%

Upcoming policies will make a dent.
Energy savings and power sector decarbonization are key.

Power generation capacity in South Korea

Insights from IEA World Energy Outlook 2010

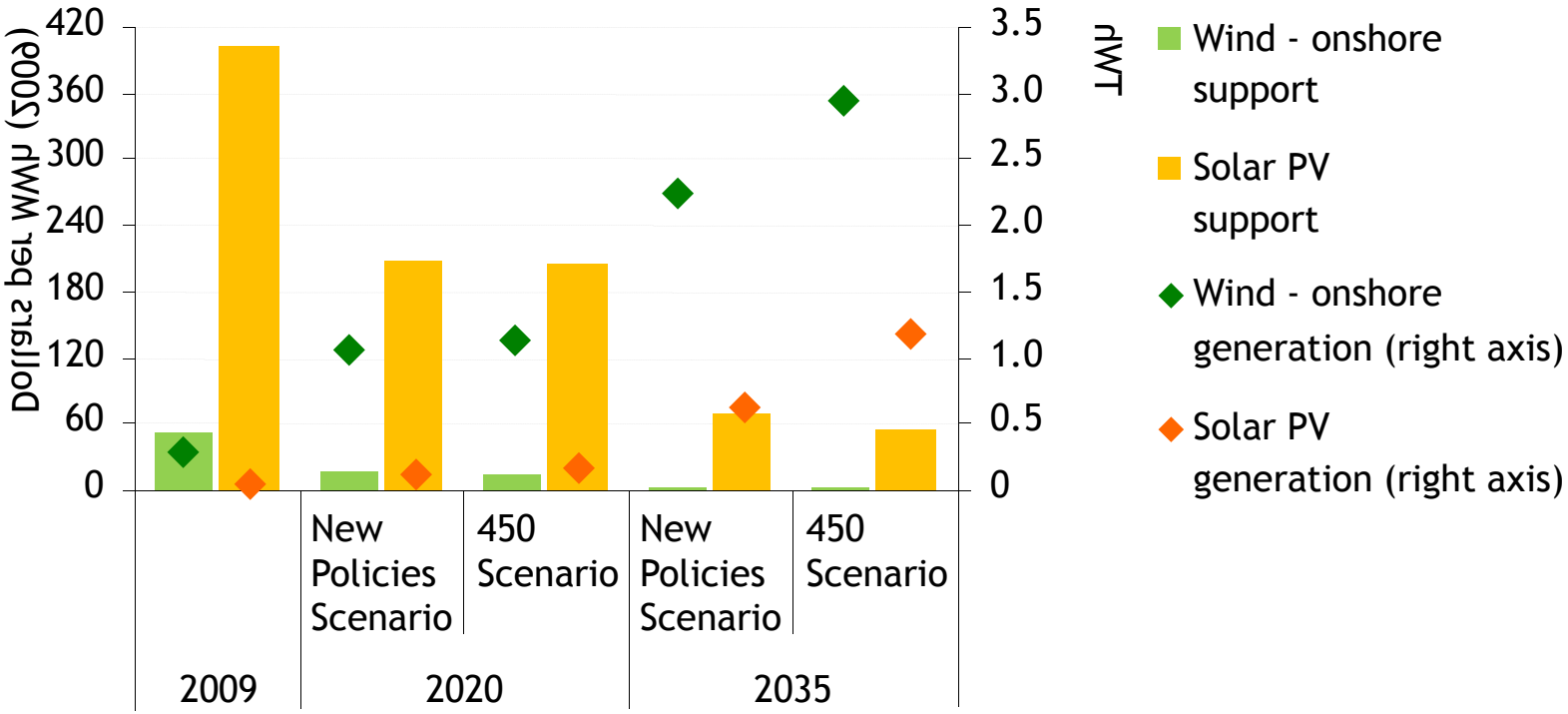


Low carbon technologies need to increase by 50% in the next 25 years. Wind and solar additions more than double.

Support for renewables pays off

IEA World Energy Outlook 2010

Global government support for and generation from PV and onshore wind in the New Policies Scenario



In several countries, onshore wind power becomes fully competitive with non-renewable generation by the end of the Outlook period in the New Policies Scenario

Low emission pathways in Korea and Japan

Insights from OECD Environmental Outlook to 2050

Macro-economic impacts of climate policies in 2050

	Real GDP in PPP terms	Real income variation
450 core	-1.5%	-3.5%
450 accelerated	-1.8%	-4.0%
450 No CCS	-2.0%	-4.5%
550 core	-0.2%	-0.6%
550 Annex I (*)	-1.7%	-1.8%
550 No linking	-2.3%	-1.9%

⇒ Early action and CCS remain affordable

⇒ Carbon market linking is beneficial

(*) Note: Annex I includes Korea.

The role of policy making

- Policies can support the development low-carbon technologies
- There are reasons for optimism in pursuing a greener energy sector
  - Policy-makers and businesses are making commitments
  - National targets for renewable energy are spreading
  - More than 70 governments around the world, including all IEA member countries, have put in place targets and policies to support development of renewable energy technologies
- There is still an urgent need to accelerate change
  - Put a price on carbon
  - Mainstreaming low-carbon energy technologies
  - Fostering innovation
  - Creating the right conditions for markets to work establishing sound regulatory frameworks, eliminating harmful subsidies, investing in education and strengthening environmental governance
  - Plan and react: sector- and location-specific adaptation policies

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