



International Institute for
Applied Systems Analysis
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science for global insight



SDGs and The World in 2050 Collaborative Initiative

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IIASA, International Institute for Applied Systems Analysis

2015: Transformational Change – Main Events

Event	Time	Location	Link
SE4ALL Forum	May 17 th – 21 st , 2015	NYC, USA	http://www.se4allforum.org/
Vienna Energy Forum 2015	June 18 th -20 th , 2015	Vienna, Austria	http://www.viennaenergyforum.org/
Our Common Future Under Climate Change – International Scientific Conference	July 7 th -10 th , 2015	Paris, France	http://www.commonfuture-paris2015.org/
Third International Conference on Financing for Development	July 13 th -16 th , 2015	Addis Ababa, Ethiopia	http://www.un.org/esa/ffd/overview/third-conference-ffd.html
The United Nations summit for the adoption of the post-2015 development agenda	Sept. 25 th – 27 th , 2015	NYC, USA	https://sustainabledevelopment.un.org/post2015/summit
UNFCCC COP 21	Nov. 30 th -Dec. 11 th , 2015	Paris, France	http://www.cop21.gouv.fr/en

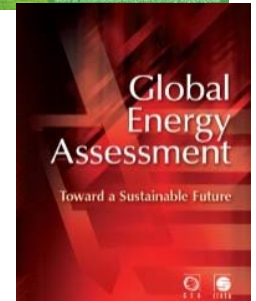
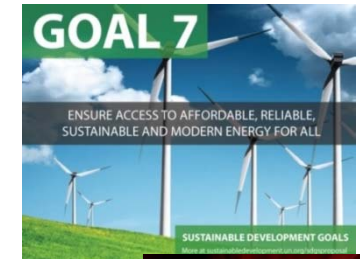
Sustainable Development Goals (SDGs)

Goal #	Description	Goal #	Description
Goal 1	End poverty in all its forms everywhere	Goal 10	Reduce inequality within and among countries
Goal 2	End hunger, achieve food security and improved nutrition and promote sustainable agriculture	Goal 11	Make cities and human settlements inclusive, safe, resilient and sustainable
Goal 3	Ensure healthy lives and promote well-being for all at all ages	Goal 12	Ensure sustainable consumption and production patterns
Goal 4	Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	Goal 13	Take urgent action to combat climate change and its impacts
Goal 5	Achieve gender equality and empower all women and girls	Goal 14	Conserve and sustainably use the oceans, seas and marine resources for sustainable development
Goal 6	Ensure availability and sustainable management of water and sanitation for all	Goal 15	Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
Goal 7	Ensure access to affordable, reliable, sustainable and modern energy for all	Goal 16	Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels
Goal 8	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	Goal 17	Strengthen the means of implementation and revitalize the global partnership for sustainable development
Goal 9	Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation		

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SDG 7: Ensure access to affordable, reliable, sustainable and modern energy for all



- 7.1 by 2030 ensure universal access to affordable, reliable, and modern energy services
- 7.2 increase substantially the share of renewable energy in the global energy mix by 2030
- 7.3 double the global rate of improvement in energy efficiency by 2030
- 7.a by 2030 enhance international cooperation to facilitate access to clean energy **research and technologies**, including renewable energy, energy efficiency, and advanced and cleaner fossil fuel technologies, and promote **investment** in energy infrastructure and clean energy technologies
- 7.b by 2030 expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in **developing countries**, particularly LDCs and SIDS

SDG 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation



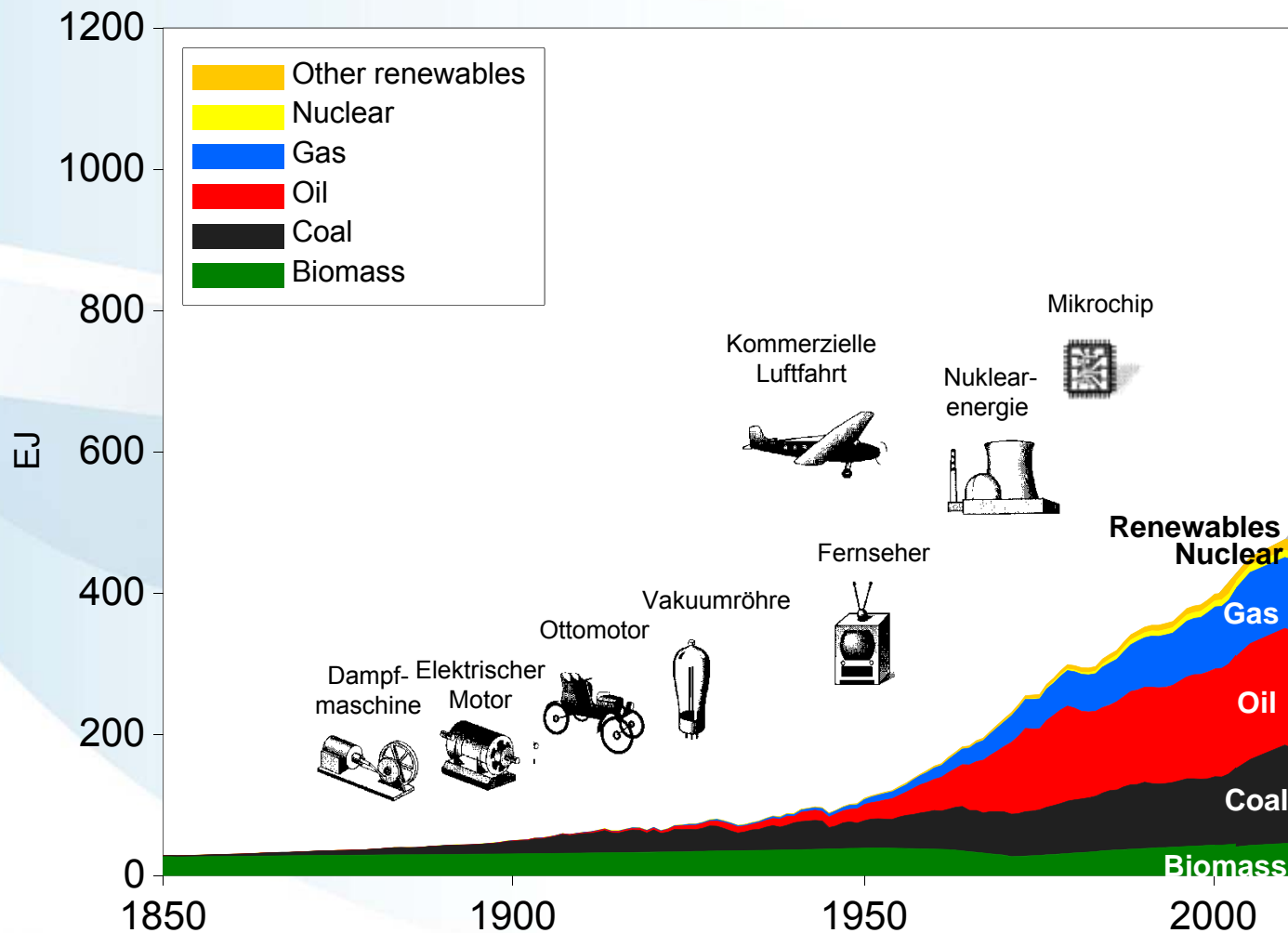
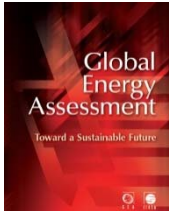
- 9.1 develop quality, reliable, **sustainable and resilient infrastructure**, including regional and trans-border infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all
- 9.2 promote **inclusive and sustainable industrialization**, and by 2030 raise significantly industry's share of employment and GDP in line with national circumstances, and double its share in LDCs
- 9.3 increase the access of small-scale industrial and other enterprises, particularly in developing countries, to financial services including affordable credit and their integration into value chains and markets
- 9.4 by 2030 upgrade infrastructure and retrofit industries to make them sustainable, with increased resource use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, all countries taking action in accordance with their respective capabilities

SDG 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation



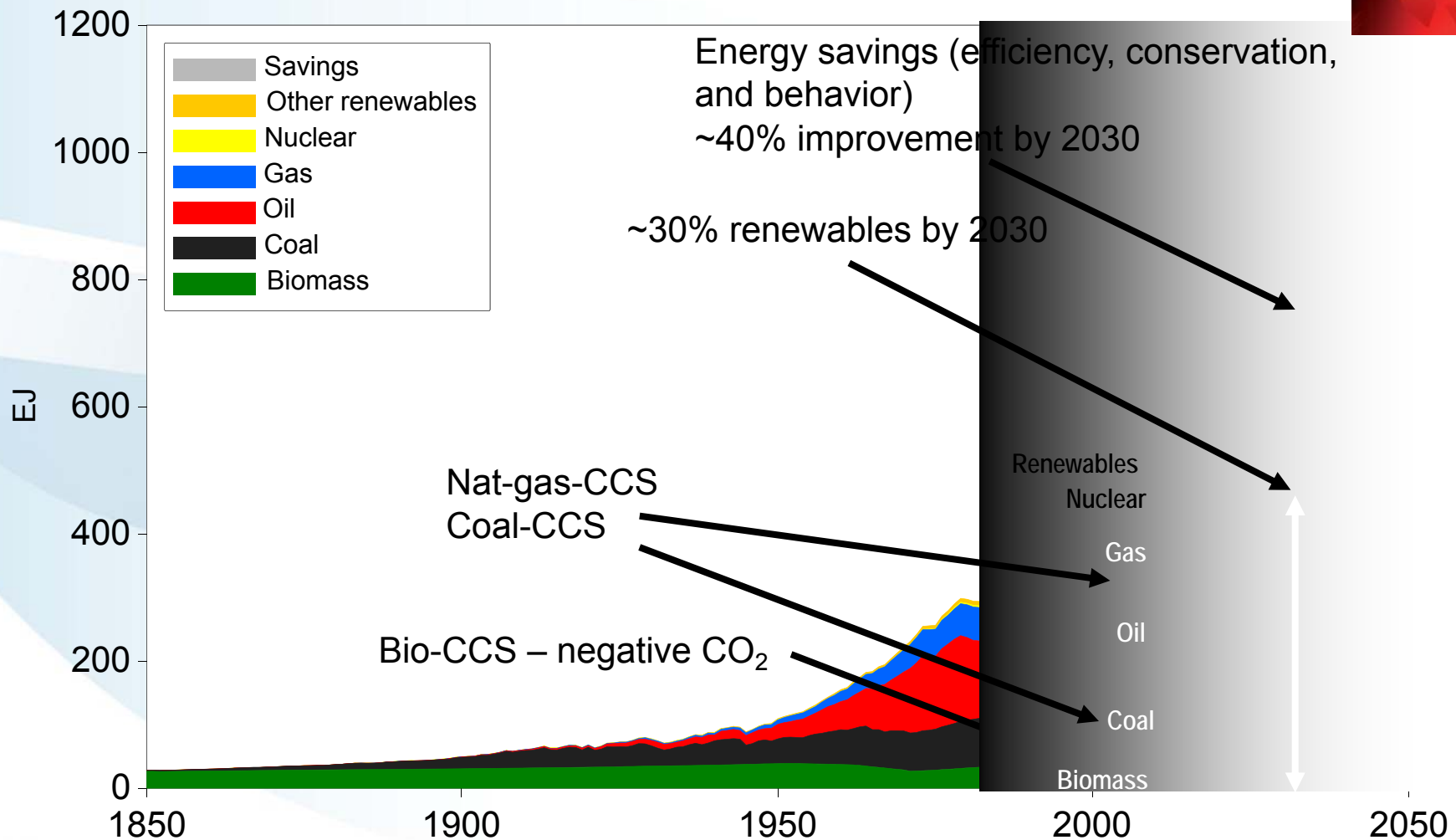
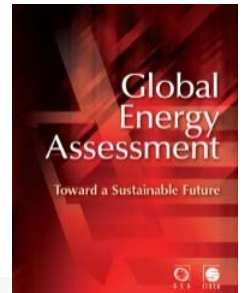
- 9.5 enhance **scientific research**, upgrade the **technological capabilities** of industrial sectors in all countries, particularly developing countries, including by 2030 encouraging innovation and increasing the number of R&D workers per one million people by x% and public and private R&D spending
- 9.a facilitate sustainable and resilient infrastructure development in developing countries through enhanced financial, technological and technical support to African countries, LDCs, LLDCs and SIDS
- 9.b support **domestic technology development**, research and innovation in developing countries including by ensuring a conducive policy environment for inter alia industrial diversification and value addition to commodities
- 9.c significantly increase **access to ICT** and strive to provide universal and affordable access to internet in LDCs by 2020

Global Primary Energy Historical Evolution



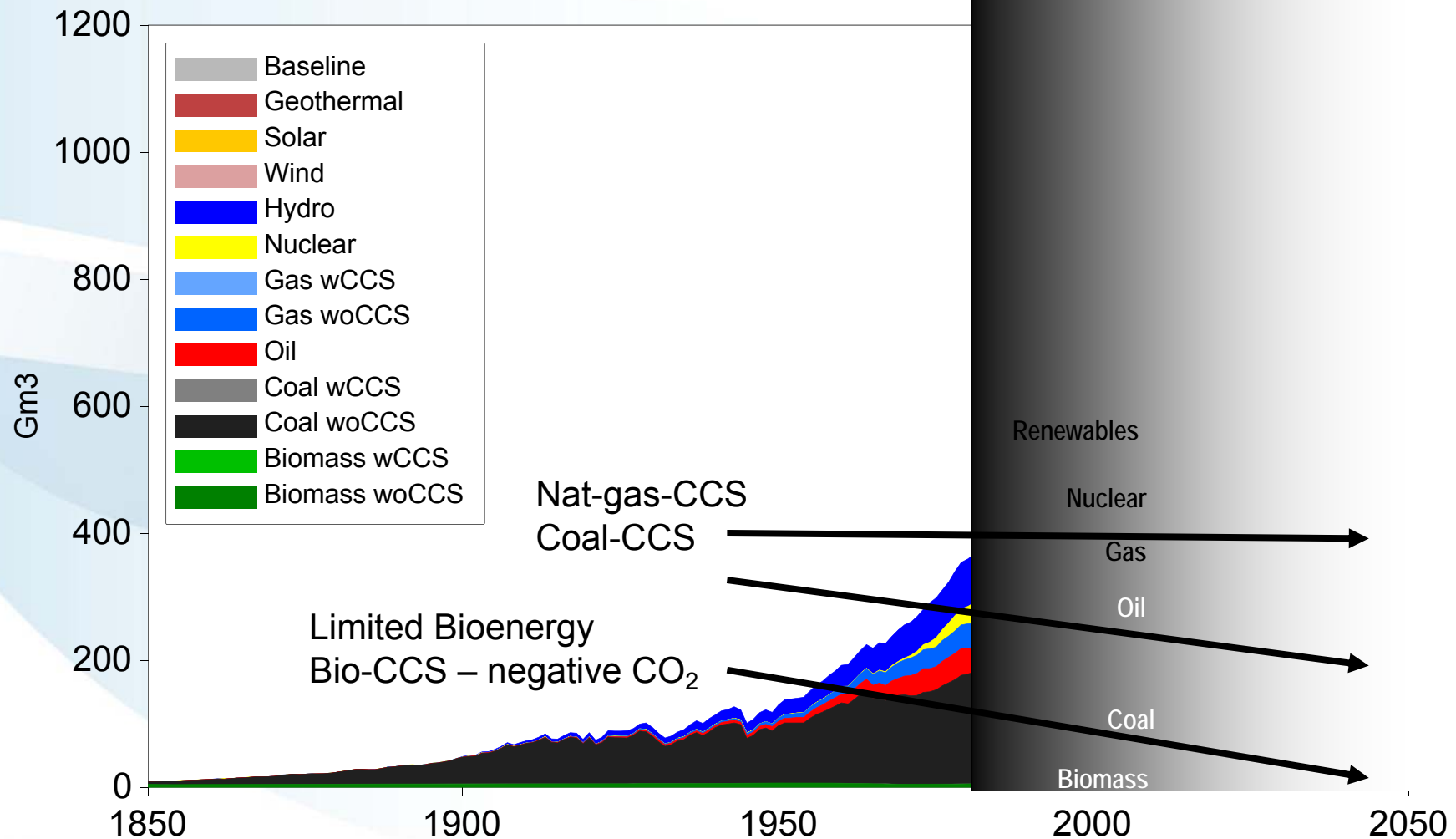
Global Primary Energy

A Transformational Pathway

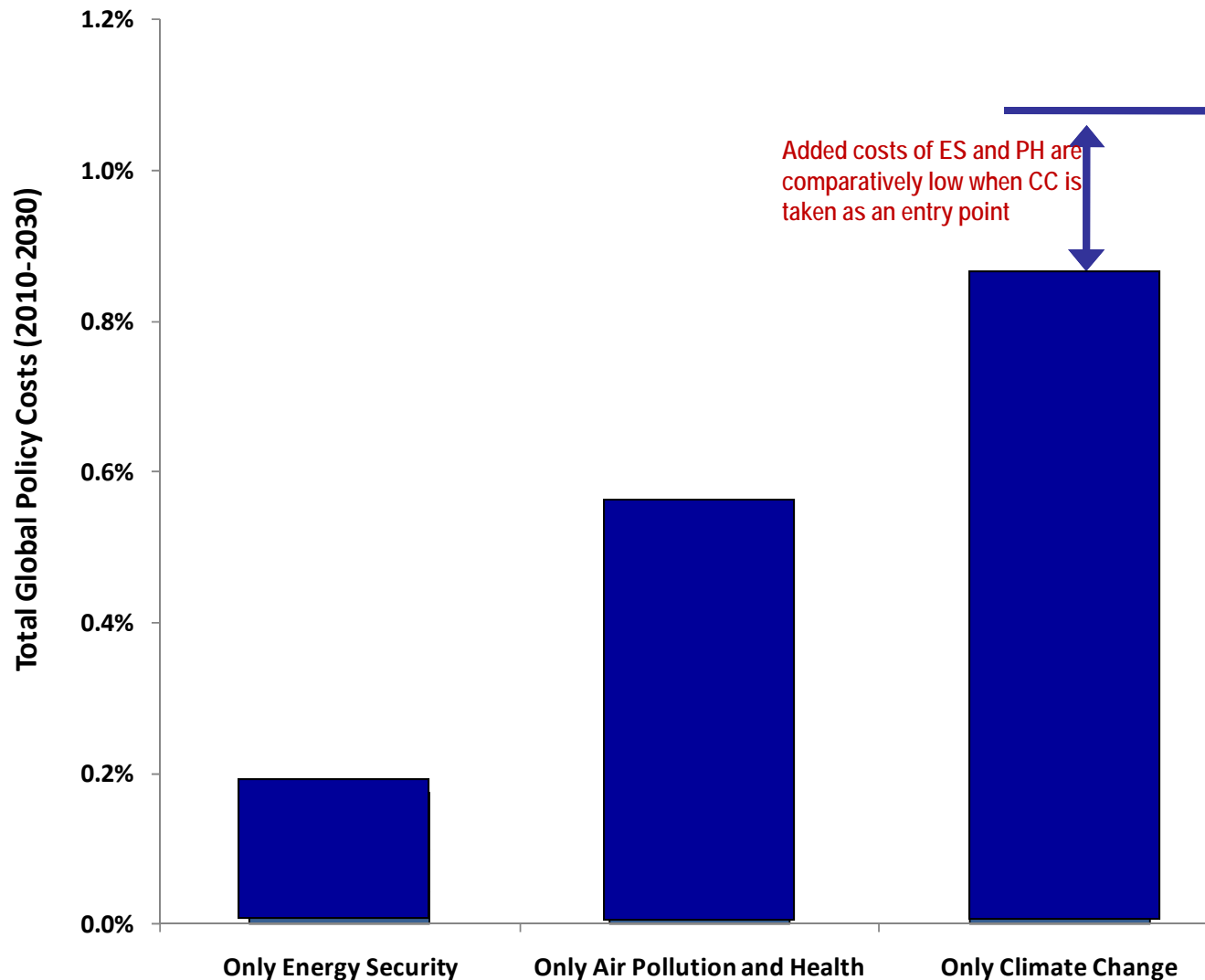


Global Water Withdrawals

A Transformational Pathway



Multiple Benefits of Integrated Policies



KNOWLEDGE CAPITAL: GROWTH VERSUS TEST SCORES

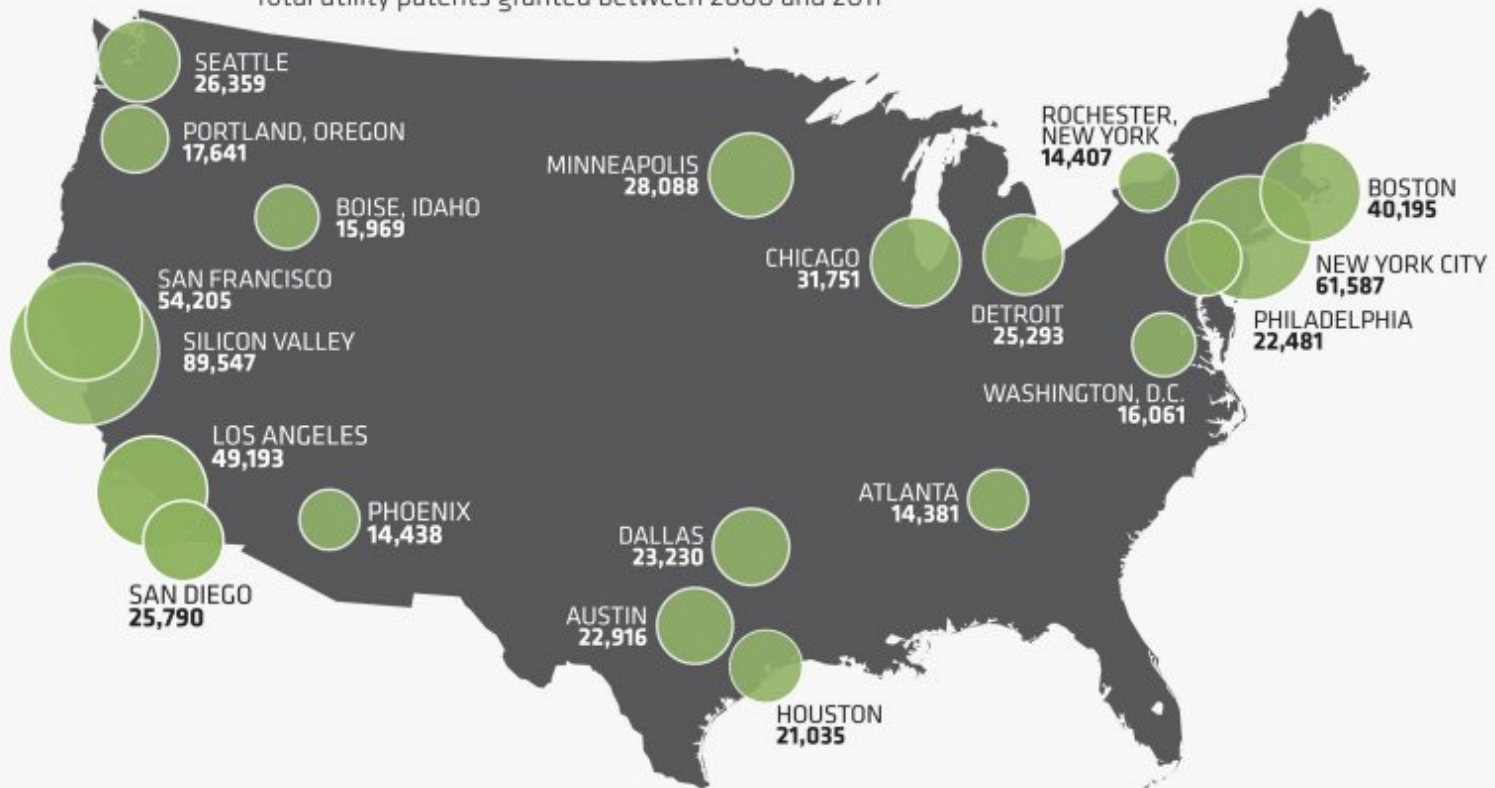
FIGURE 2.1 KNOWLEDGE CAPITAL AND ECONOMIC GROWTH RATES ACROSS COUNTRIES

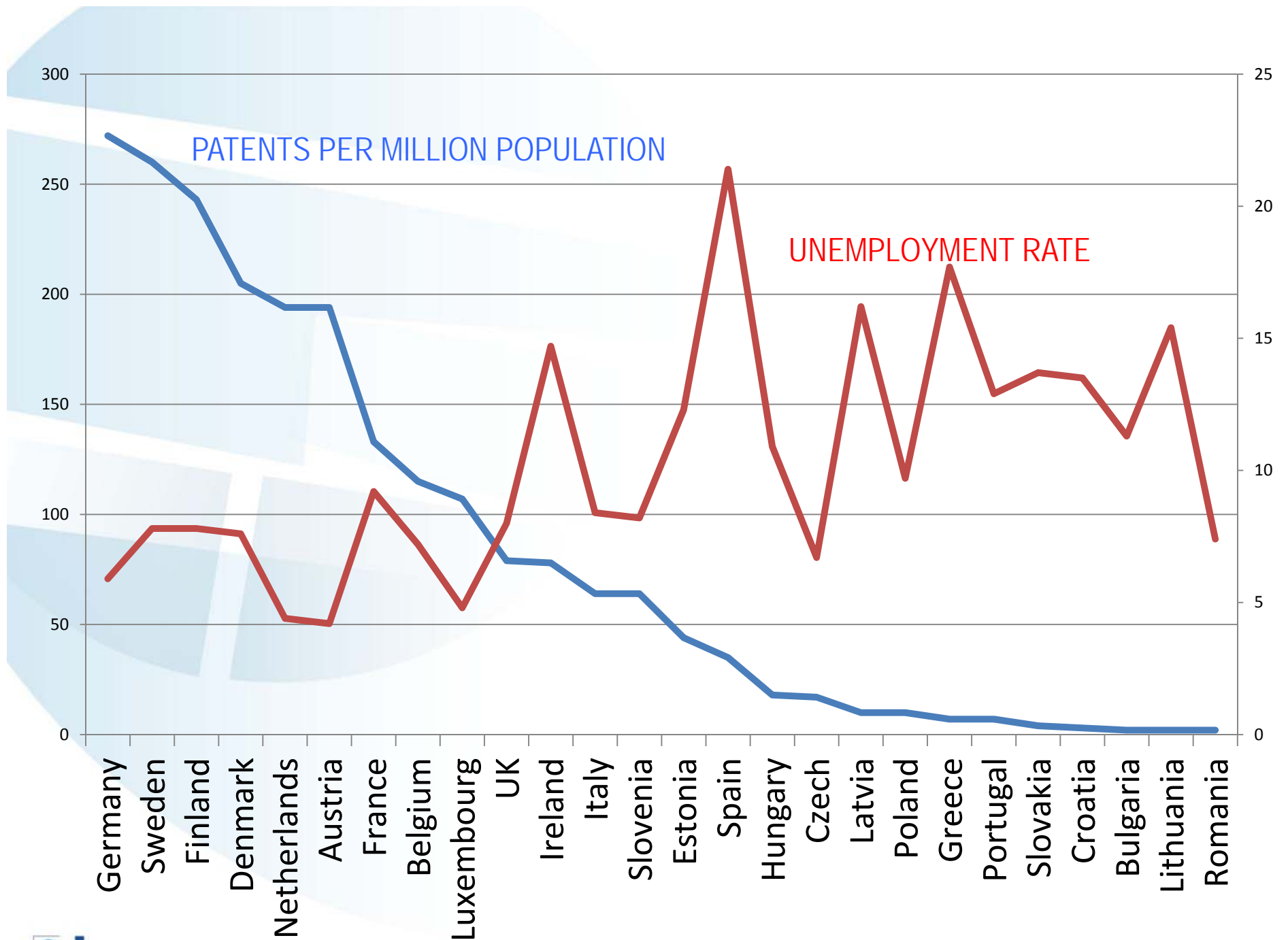


UNIVERSITY-BASED INNOVATION HUBS IN THE US

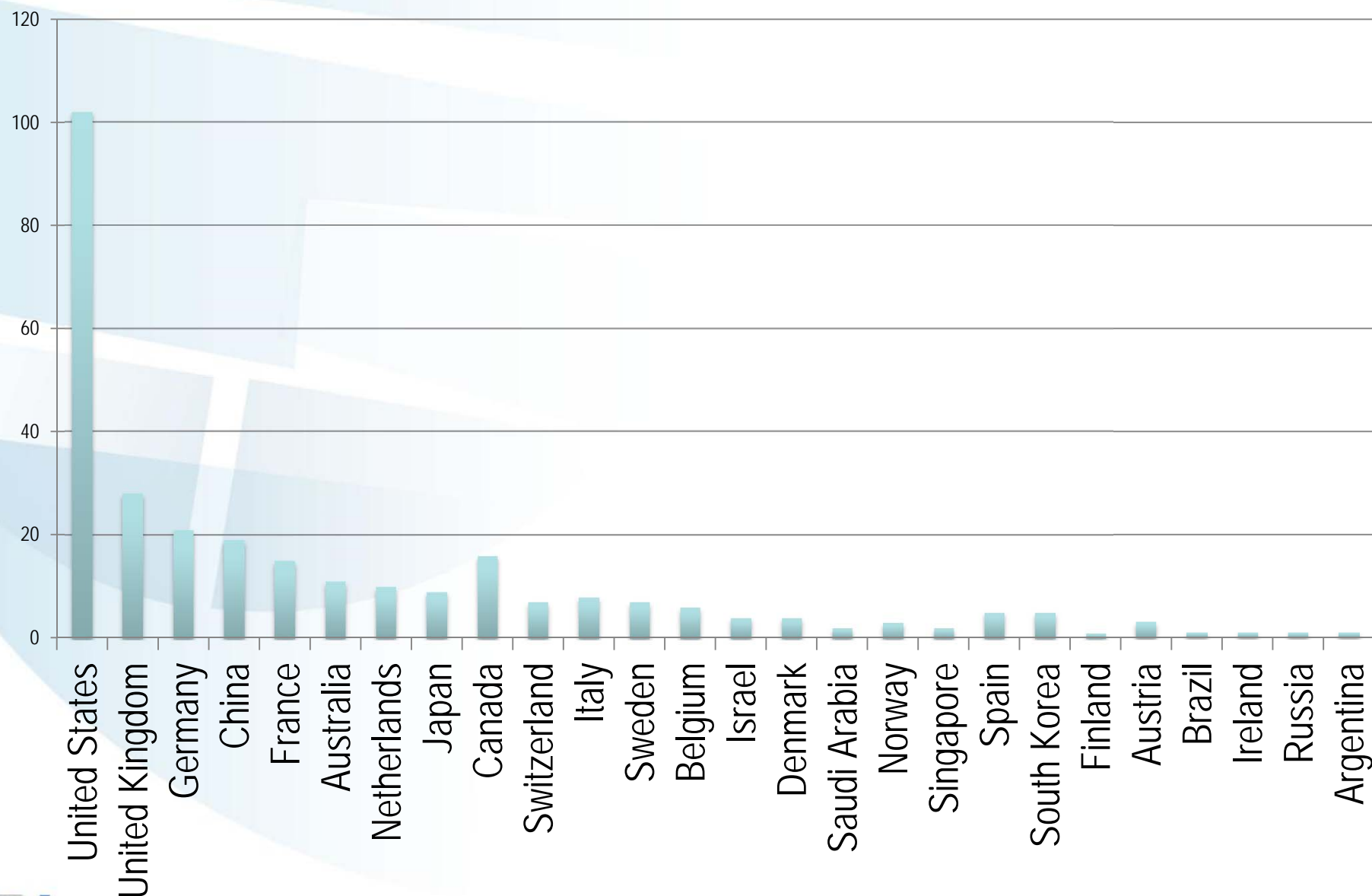
INNOVATION MARKS THE SPOT

Total utility patents granted between 2000 and 2011





TOP 300 UNIVERSITIES: SHANGHAI RANKING, 2015





**SUSTAINABLE DEVELOPMENT
SOLUTIONS NETWORK**
A GLOBAL INITIATIVE FOR THE UNITED NATIONS



Stockholm Resilience Centre
Sustainability Science for Biosphere Stewardship

THE EARTH INSTITUTE
COLUMBIA UNIVERSITY

The World in 2050

Integrating knowledge on SDSN pathways to global sustainable development

Inaugural Meeting – 10-12 March 2015

The World in 2050

- ➡ Global development within a safe and just operating space and planetary boundaries
- ➡ “Safe Space” of interaction among SDGs: integrated models to sustainability narratives
- ➡ Transformational pathways based on existing literature e.g. SSPs, GEA, SDSN’s DDPP
- ➡ Co-benefits of transformation toward the “safe space” and how to achieve sustainable futures

The World in 2050 “Consortium”

- AIMES
- Future Earth
- Centre for Integrated Studies on
- Earth League, whole Earth system modelling initiative
- Earth Institute, Columbia University
- Global Ocean Ecosystem Dynamics (GLOBEC)
- Indian Institute International Futures
- Indian Institute of Technology (IIT)
- International Energy Agency (IEA)
- International Food Policy Research Institute (IFPRI)
- International Monetary Fund (IMF)
- International Institute for Applied System Analysis (IIASA)
- Joint Global Change Research Institute at Pacific Northwest National Laboratory (JGCR)
- National Center for Atmospheric Research (NCAR)
- National Institute for Environmental Studies (NIES)
- UN Population Division
- UNEP- World Conservation Monitoring Centre (UNEP-WCMC)
- World Bank
- Organisation for Economic Co-operation and Development (OECD)
- Potsdam Institute for Climate Impact Change (PIK)
- PBL - Netherlands Environmental Assessment Agency
- Stanford University
- Stockholm Resilience Centre
- The City University of New York (CUNY)
- Tsinghua University



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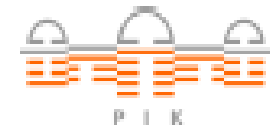
NATIONAL INSTITUTE FOR
ENVIRONMENTAL STUDIES



United Nations Environment Programme
World Conservation Monitoring Centre



PBL Netherlands Environmental
Assessment Agency



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