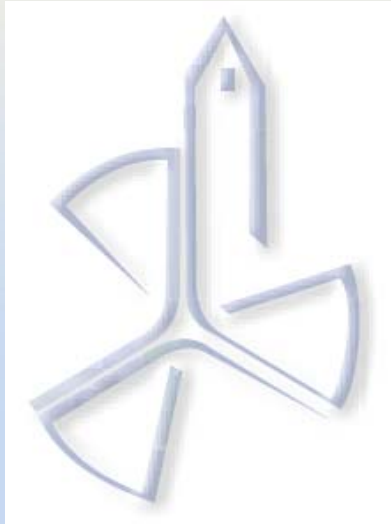


**International Radiation Protection Association
12th International Congress
Buenos Aires, Argentina – October 19-24, 2008**



IRPA 12

**Concluding Plenary Session III
24th October 2008**

**Luis Echávarri
Director-General
OECD Nuclear Energy Agency**



Trends in Radiation Safety

- Radiation safety has always been a key focus of industry and regulatory authorities
- Particularly over the past 20 years, the application of optimisation, with the objective that all exposures should be As Low As Reasonably Achievable (ALARA), has successfully reduced exposures in many areas

UNSCEAR 2008 – Overall Summary

<i>Source</i>	<i>Collective Dose (man sievert)</i>	<i>Worldwide average dose (mSv)</i>	<i>Typical range of individual doses (mSv)</i>	<i>Comments</i>
Total natural	15,000,000	2.4	1–10	Sizeable populations at 10–20 mSv
Medical diagnosis	4,200,000	0.6	0–several tens	Average is 1.9mSv in countries with high level health care
Atmospheric nuclear testing	32,000	0.005	Mainly from residual activity in soils	Peak 0.11 mSv in 1963
Occupational exposure	29,000	0.005	~0–20	Highest collective doses to exposures from natural radiation (e.g. radon in mines)
Nuclear power Public Exposure	1,300	0.0002	Up to 0.3 near nuclear Installations	
Total man-made	4,260,000	0.6	From essentially zero up to several tens	Individual doses depend primarily on medical treatment and occupational exposure

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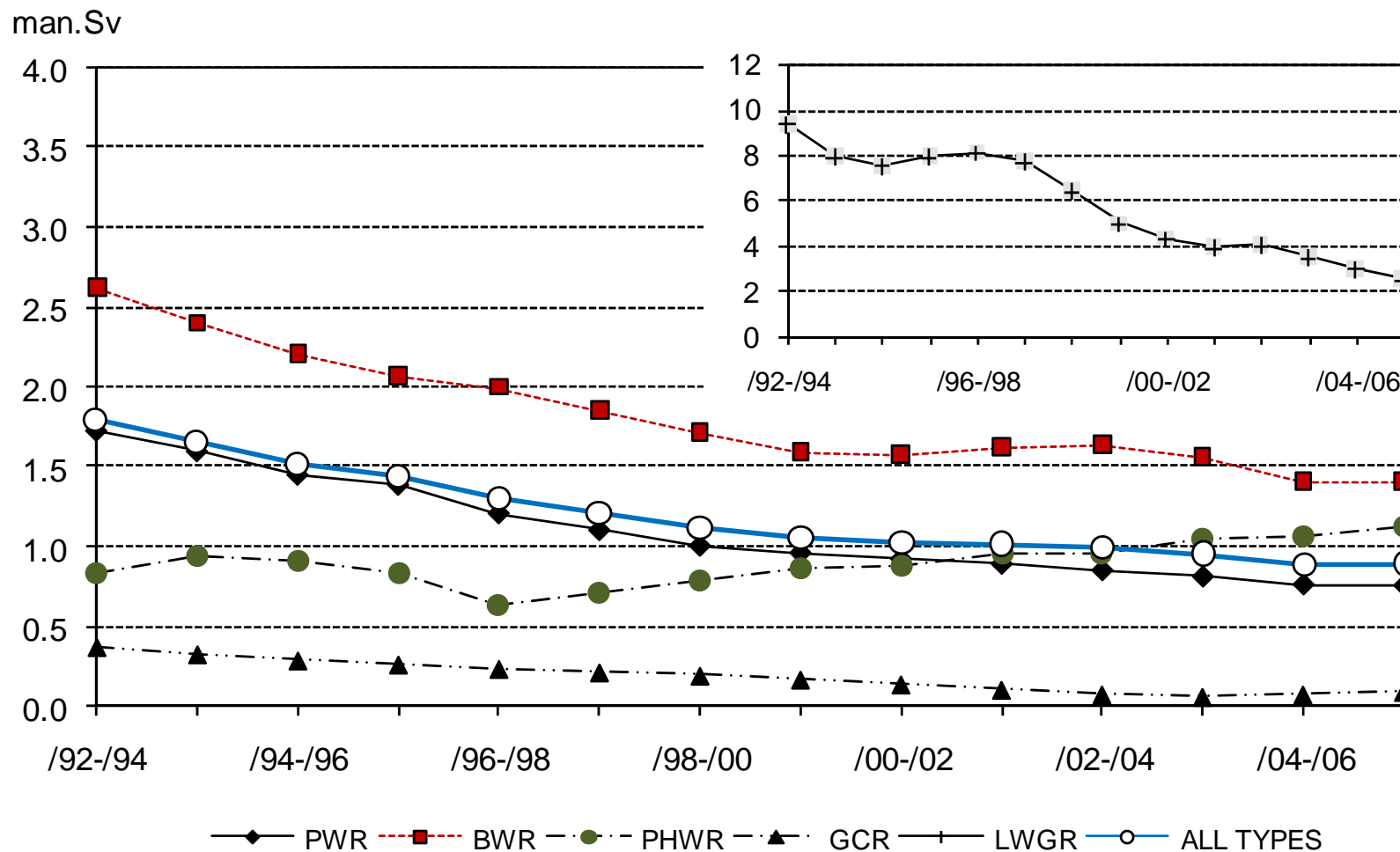
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UNSCEAR 2008 – Occupational Exposure

Occupation	No. of workers	Collective annual dose (manSv)	Average annual dose (mSv)
Coal mining	6,900,000	16,560	2.4
Other mining (Excluding U mining)	4,600,000	13,800	3.0
Airline Flight Crew	300,000	900	3.0
Nuclear Fuel Cycle (Including U mining)	800,000	800	1.0
Medical Uses	7,400,000	2,500	0.3
Industrial Uses	900,000	289	0.3

Occupational Exposure Trends in NPPs



*3-year rolling average/reactor by reactor type, 1992-2007 (man.Sv)
(source: ISOE database)*

Business as usual 2050

Population up by 50%...

Energy demand up by 100%...

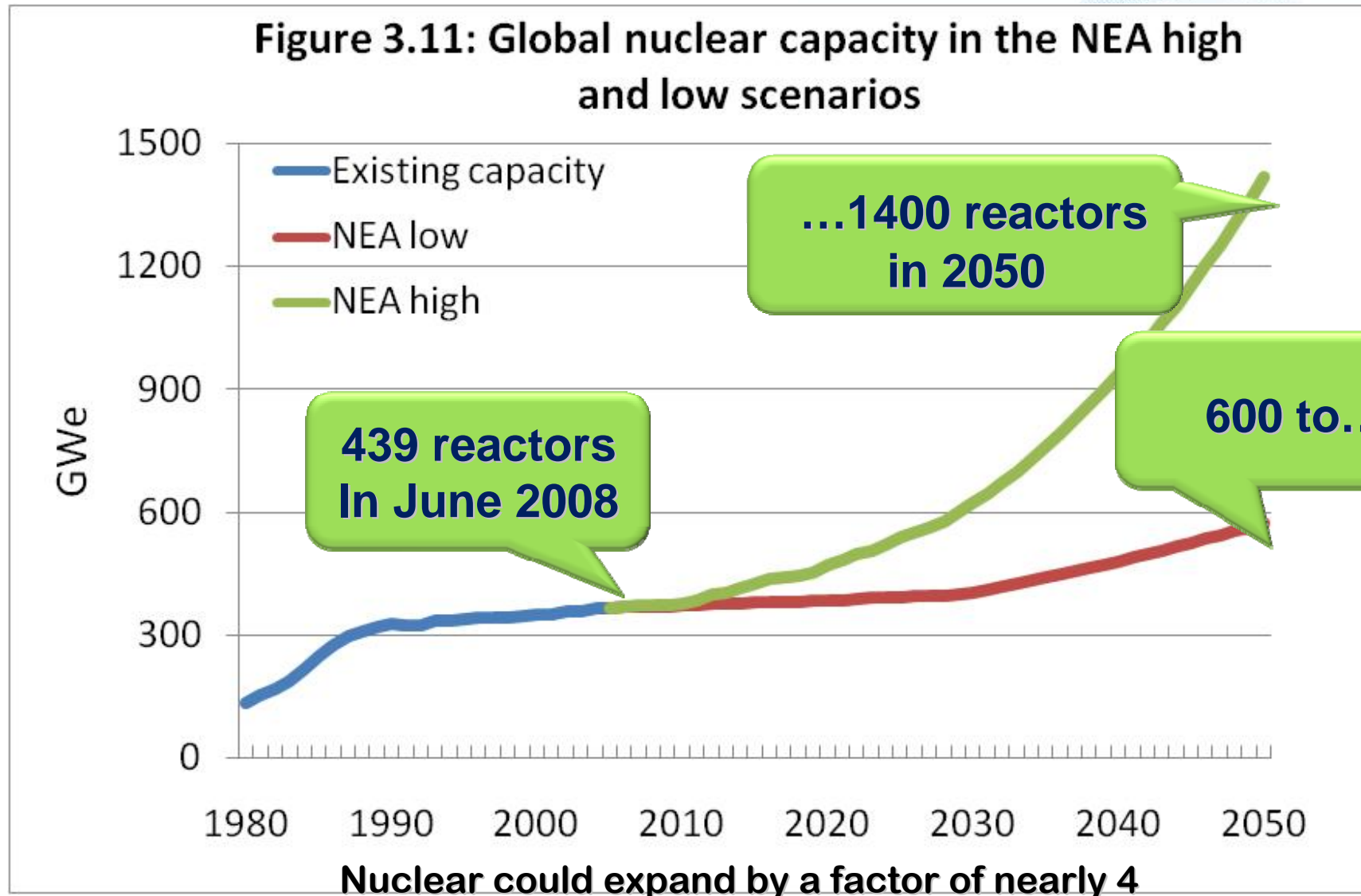
Electricity demand up by 150%...



CO₂ emissions per unit of energy consumption must be reduced by a factor of 4

Nuclear could make a significant contribution

Nuclear energy's potential role



But!...

Governments have clear responsibilities:

- ensure maintenance of the skill base
- maintain continued effective safety regulation
- foster progress facilities for waste disposal
- maintain and reinforce international non-proliferation arrangements
- provide the stability (policy, regulatory, fiscal) investors require

to enable nuclear energy's role in future sustainable energy mixes

The facts are all here...



- Chapter 1. Current Status
- Chapter 2. Programmes and Government Policies
- Chapter 3. Projections to 2050
- Chapter 4. Environmental Impacts of Energy Use and Power Production
- Chapter 5. Uranium Resources and Security of Supply
- Chapter 6. Providing Electricity at Stable and Affordable Costs
- Chapter 7. Nuclear Safety and Regulation
- Chapter 8. Radioactive Waste Management and Decommissioning
- Chapter 9. Non-proliferation and Security
- Chapter 10. Legal Frameworks
- Chapter 11. Infrastructure: Industrial, Manpower and R&D Capability
- Chapter 12. Stakeholder Engagement
- Chapter 13. Advanced Reactors
- Chapter 14. Advanced Fuel Cycles