

2372-19

**Joint ICTP-IAEA Workshop on Sustainable Energy Development: Pathways
and Strategies after Rio+20**

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Global Nuclear Energy Futures: The IAEA 2012 Projections

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IAEA-ICTP Workshop on

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IAEA

International Atomic Energy Agency

Overview

- 1. Context and assumptions**
- 2. IAEA projections**
- 3. Conclusions**

1. Context and assumptions

Projections of future role of nuclear power are presented as LOW and HIGH estimates

The RDS-1 estimates: general growth trends
relative importance of drivers keeps changing

- Economic growth and structural economic change
- Energy intensity
- Technology performance and costs
- Energy resource availability and future fuel prices
- Energy policy and physical, environmental and economic constraints

1. Context and assumptions

LOW: current trends continued + policy changes affecting NE other than those already in the pipeline

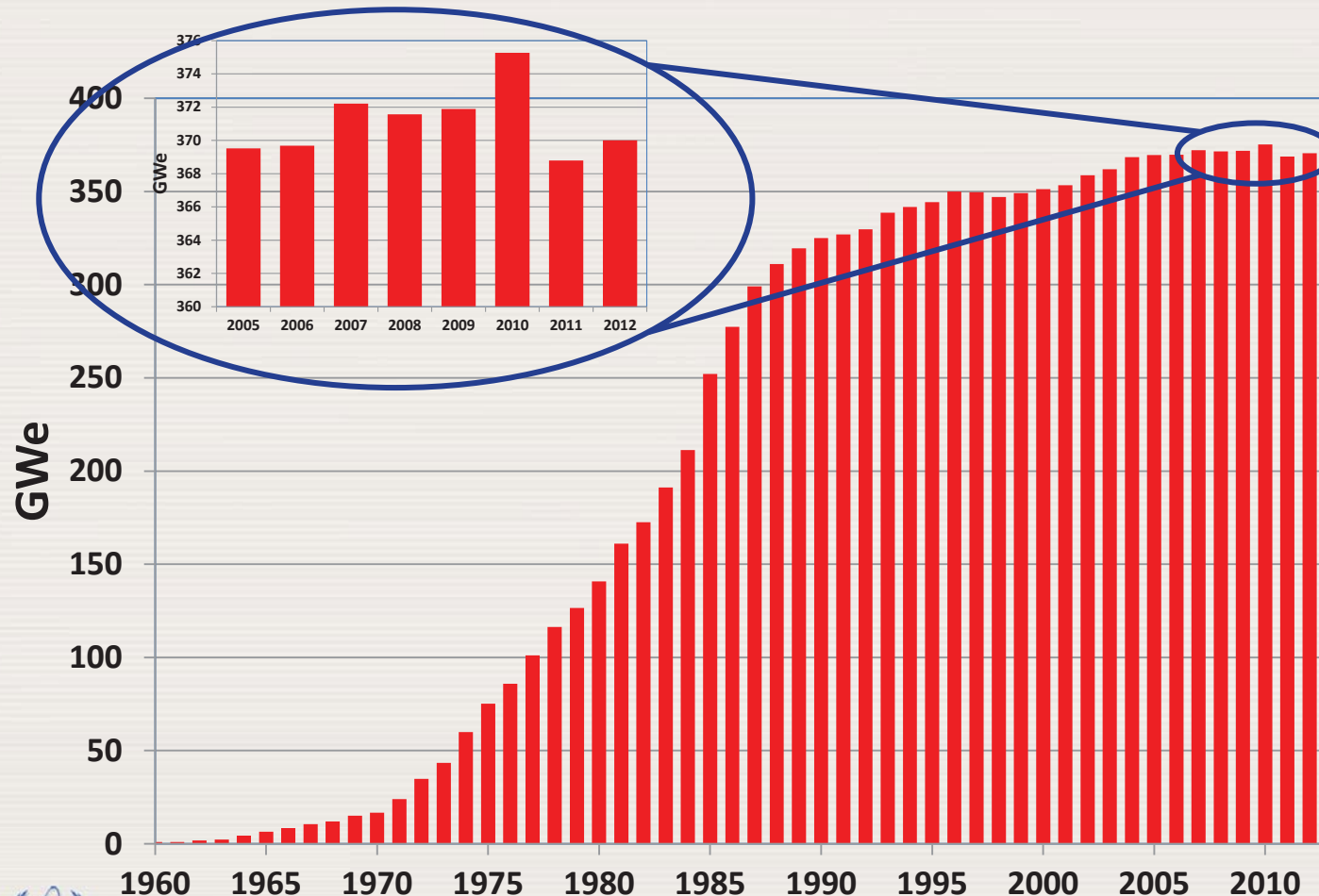
HIGH: much more optimistic, but still plausible and technically feasible and assumes that

- no *long-term global* retreat from NE after Fukushima
- prevailing financial and economic crises end soon
- past rates of economic growth and electricity demand, especially in the Far East, resume
- progress in agreement and implementation of stringent global policies to mitigate climate change (UNFCCC, Durban Platform)

Nuclear power generating capacity

(as of September 2012)

435 nuclear power plants (NPPs) in 30 countries worldwide, with a total installed capacity of 370.0 GWe.



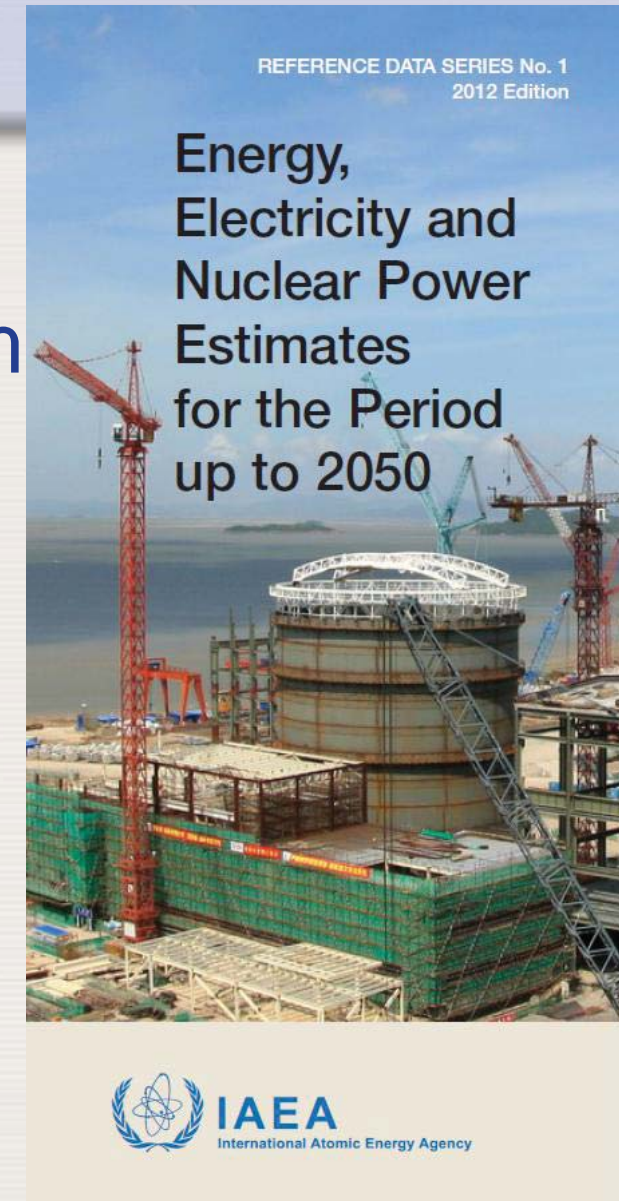
“Where does nuclear power go from here?”

64 NPPs under construction

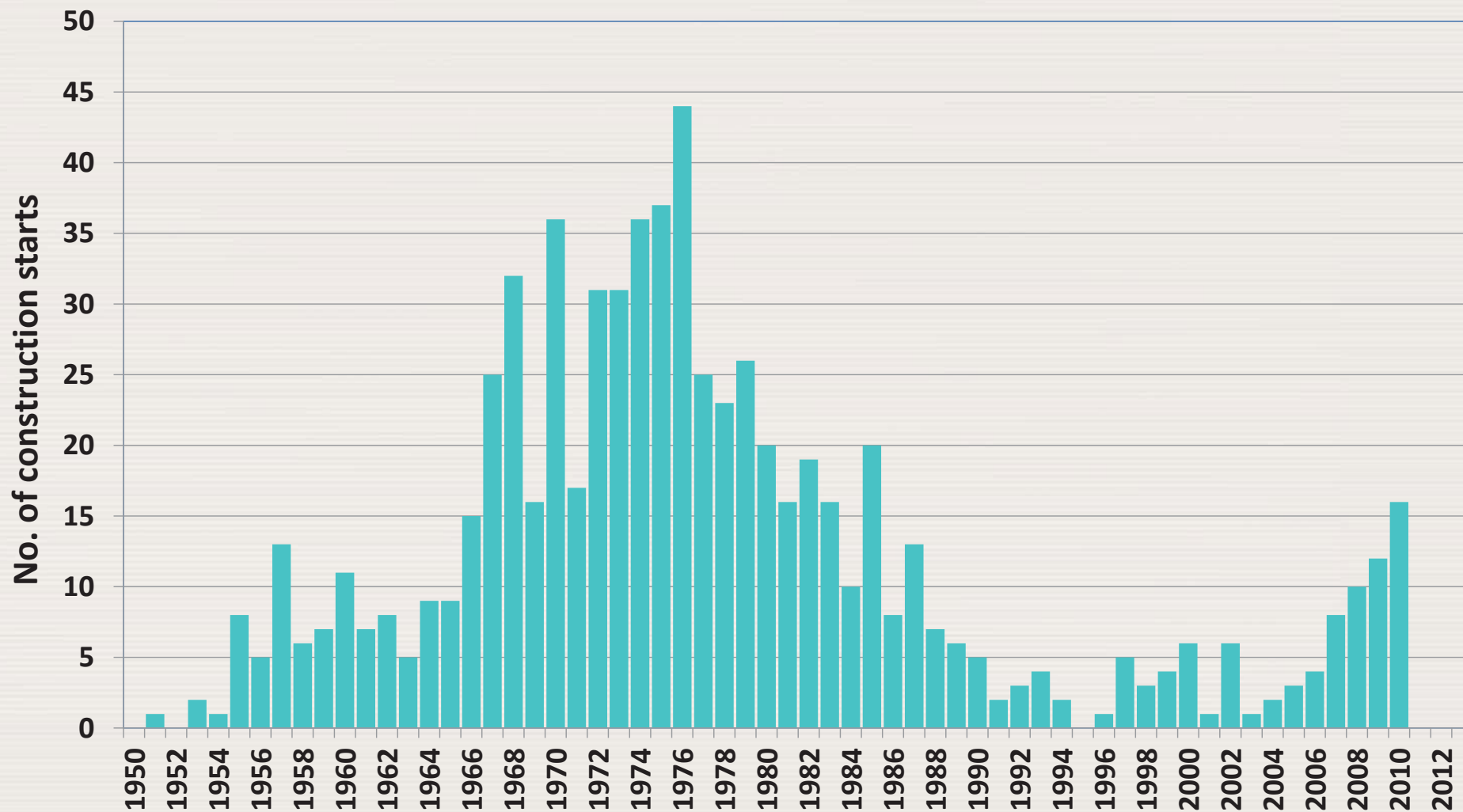
2. IAEA projections

Preparations:

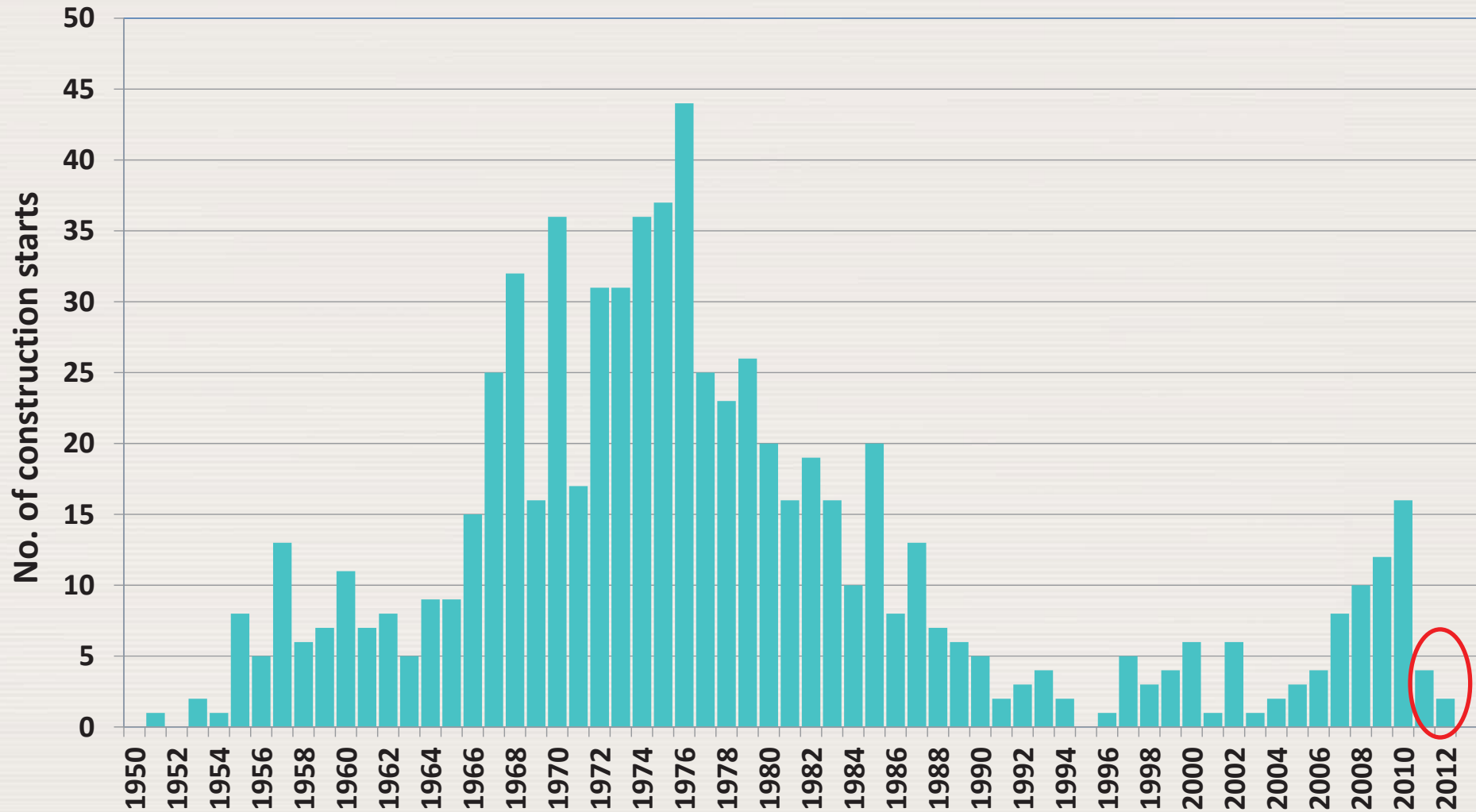
- Small international expert team
- Regional knowledge
- Action on the ground
- Plans
- Delphi method – sort of ...



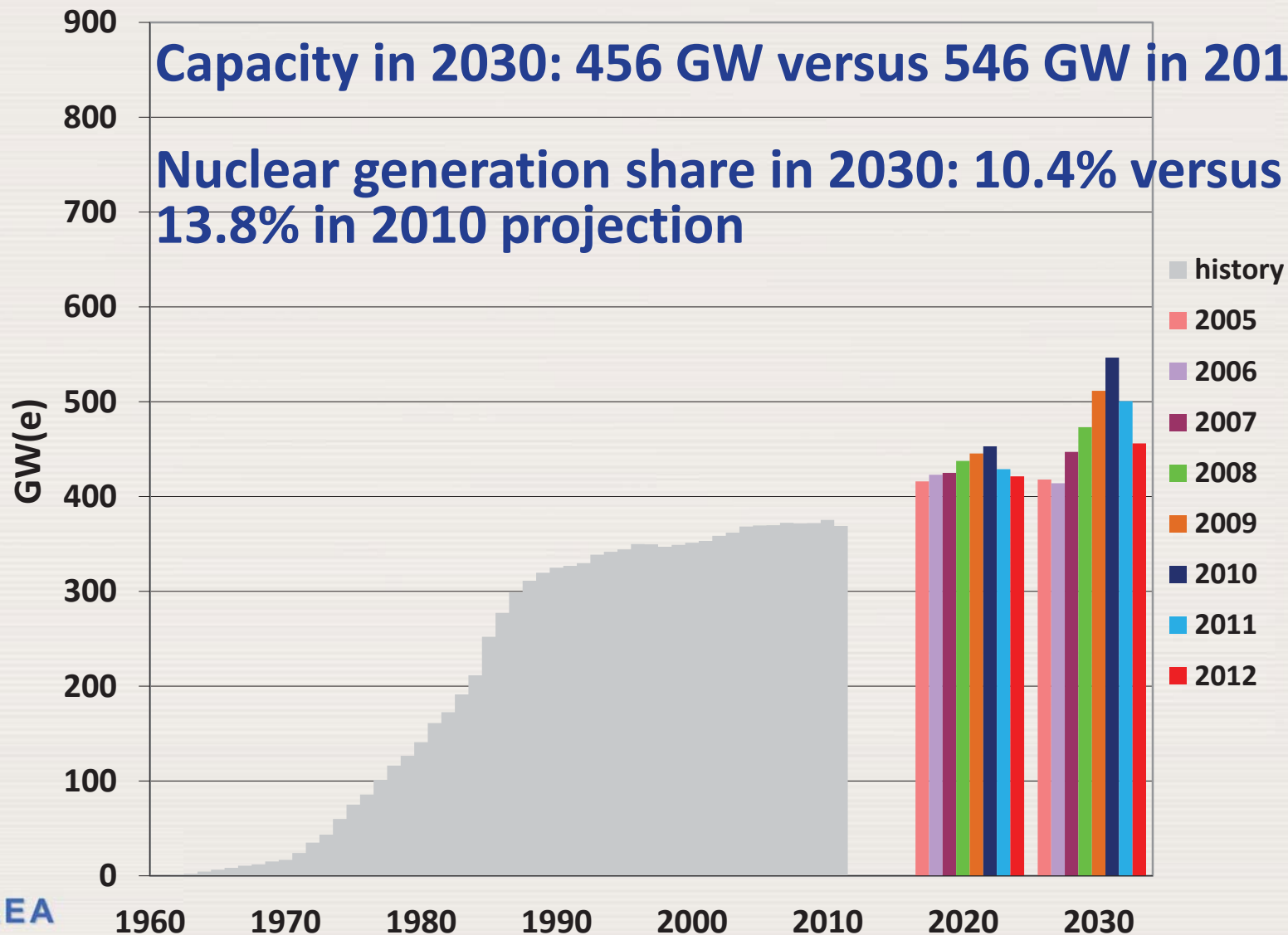
Construction starts 1950 to 2010



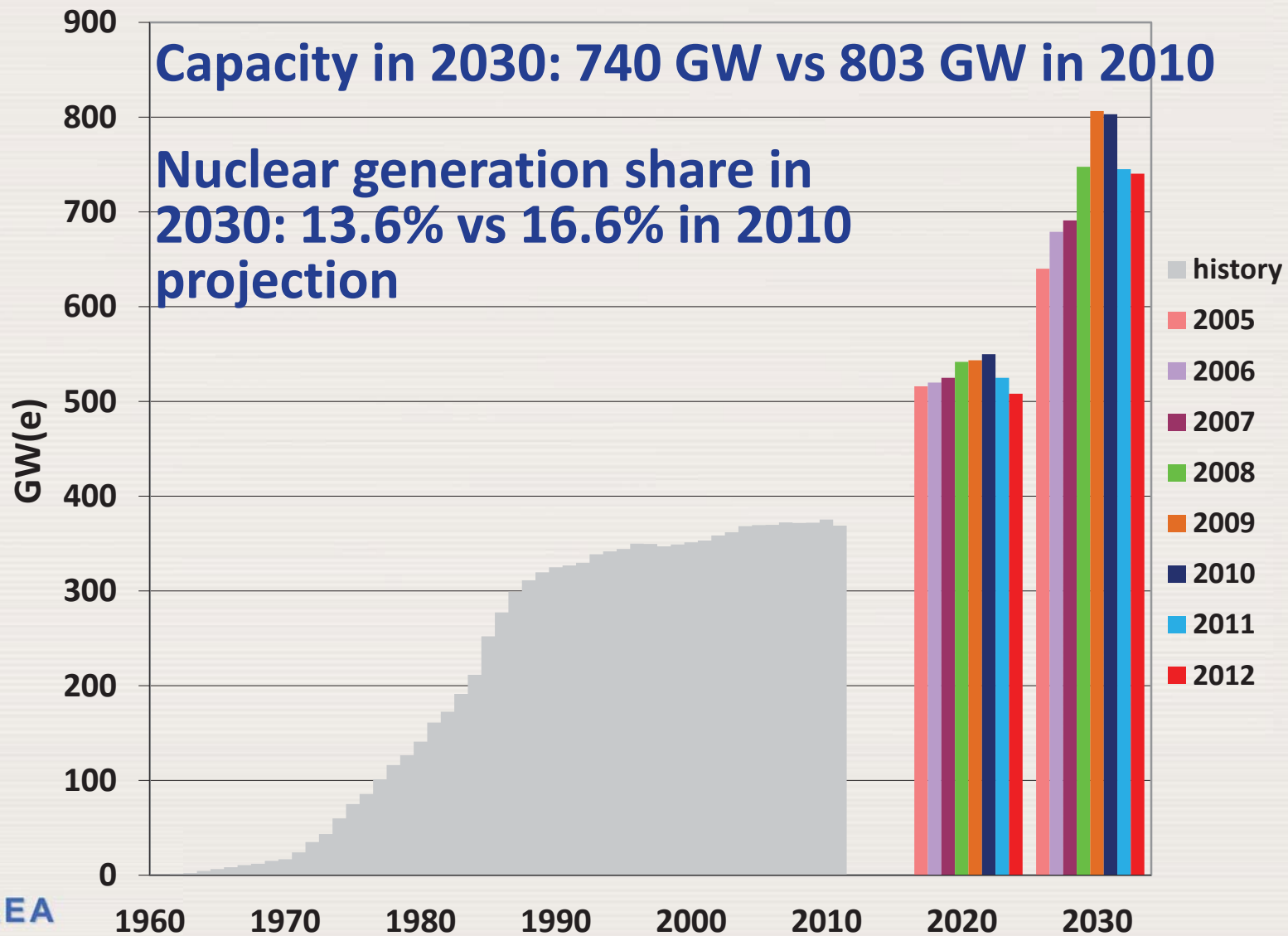
Construction starts since Fukushima



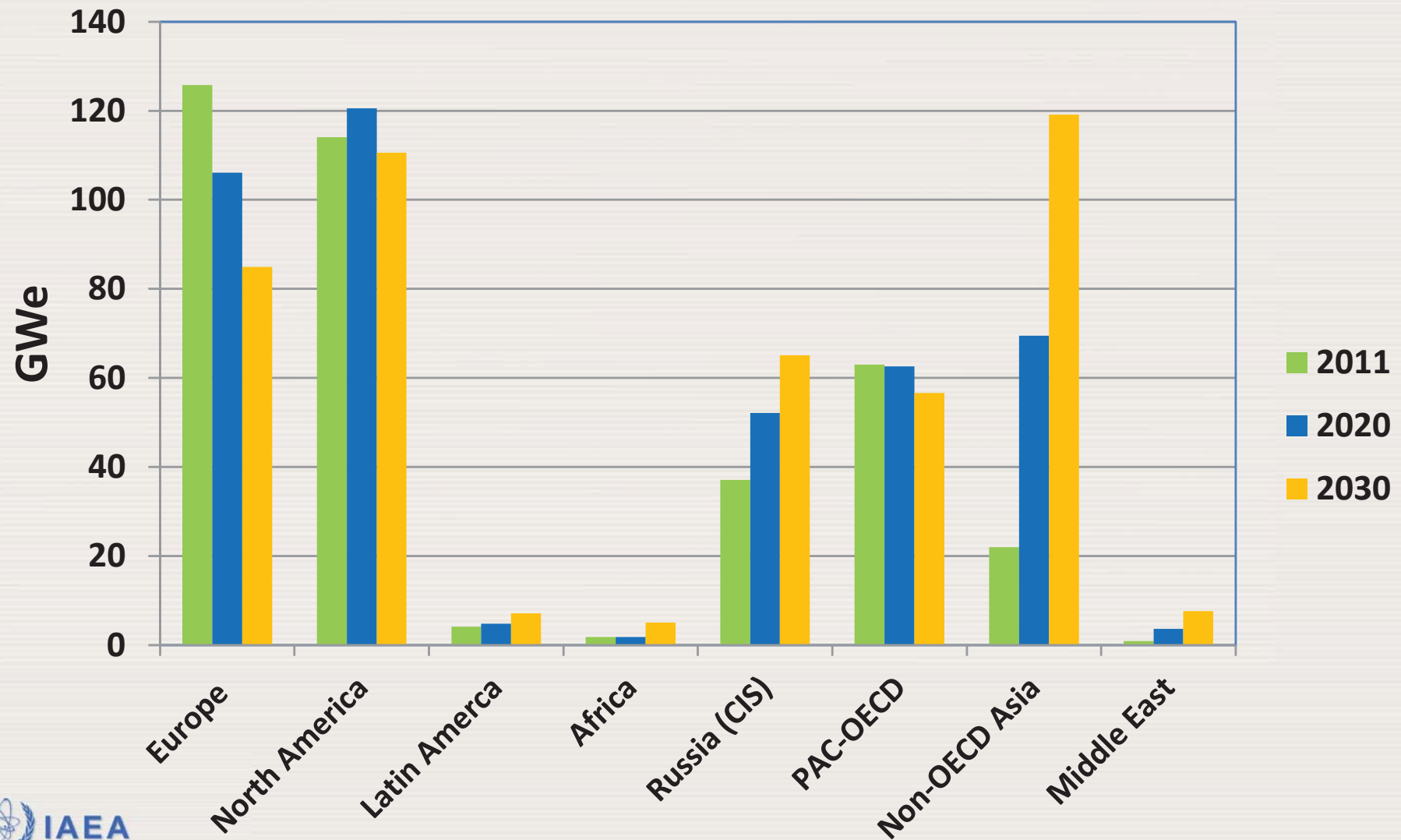
IAEA – LOW projection – 2030



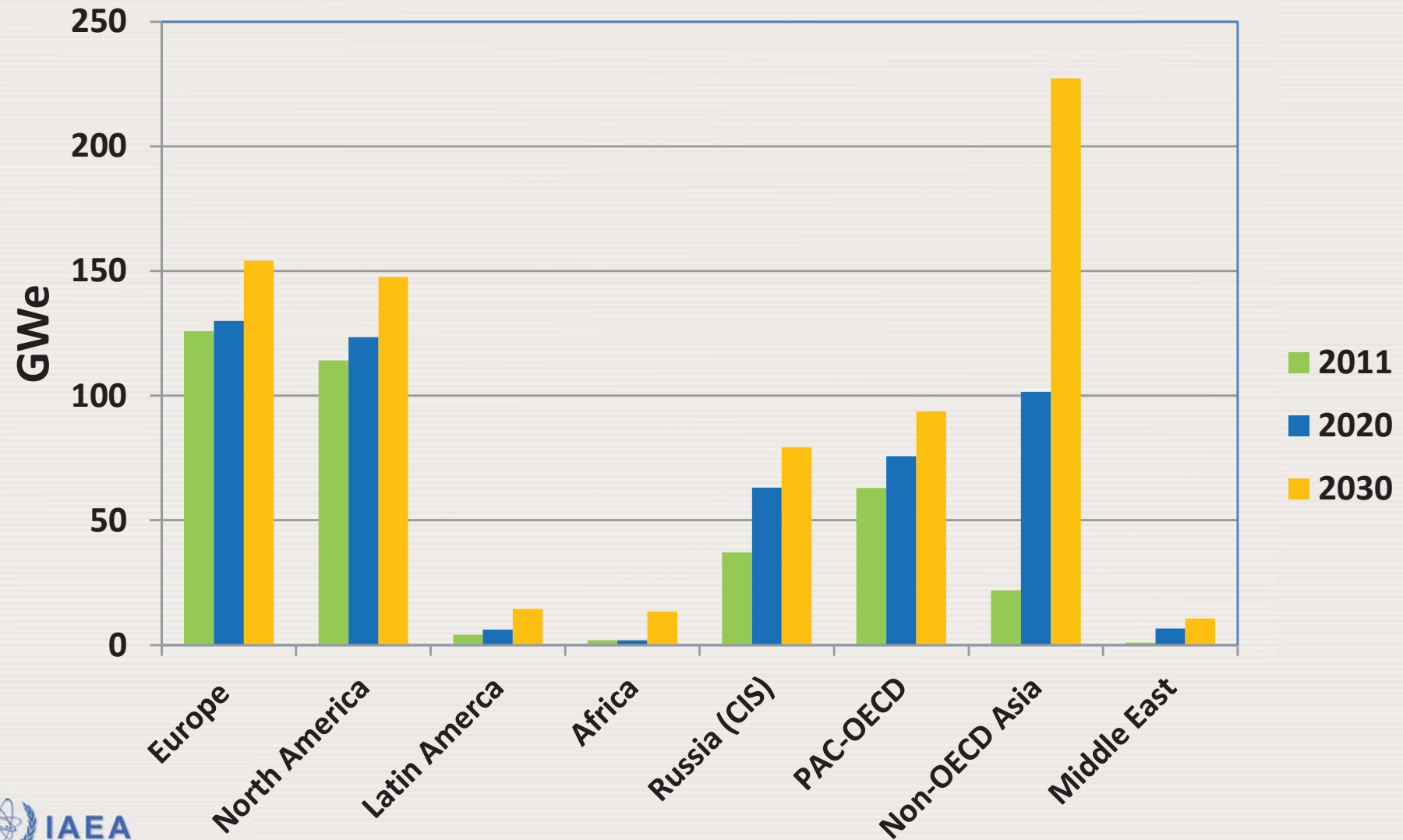
IAEA – HIGH projection – 2030



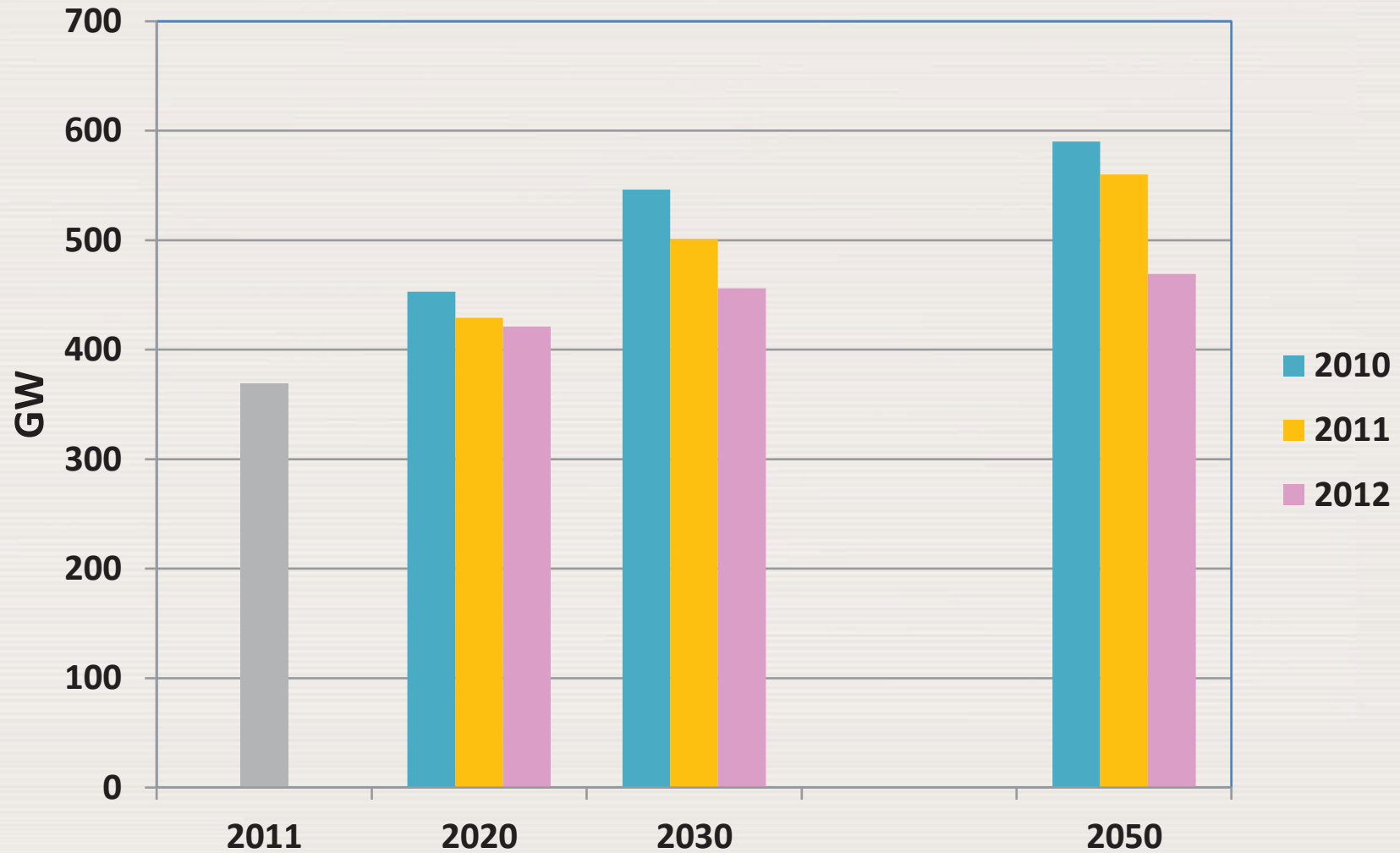
Nuclear capacity projections by region: LOW



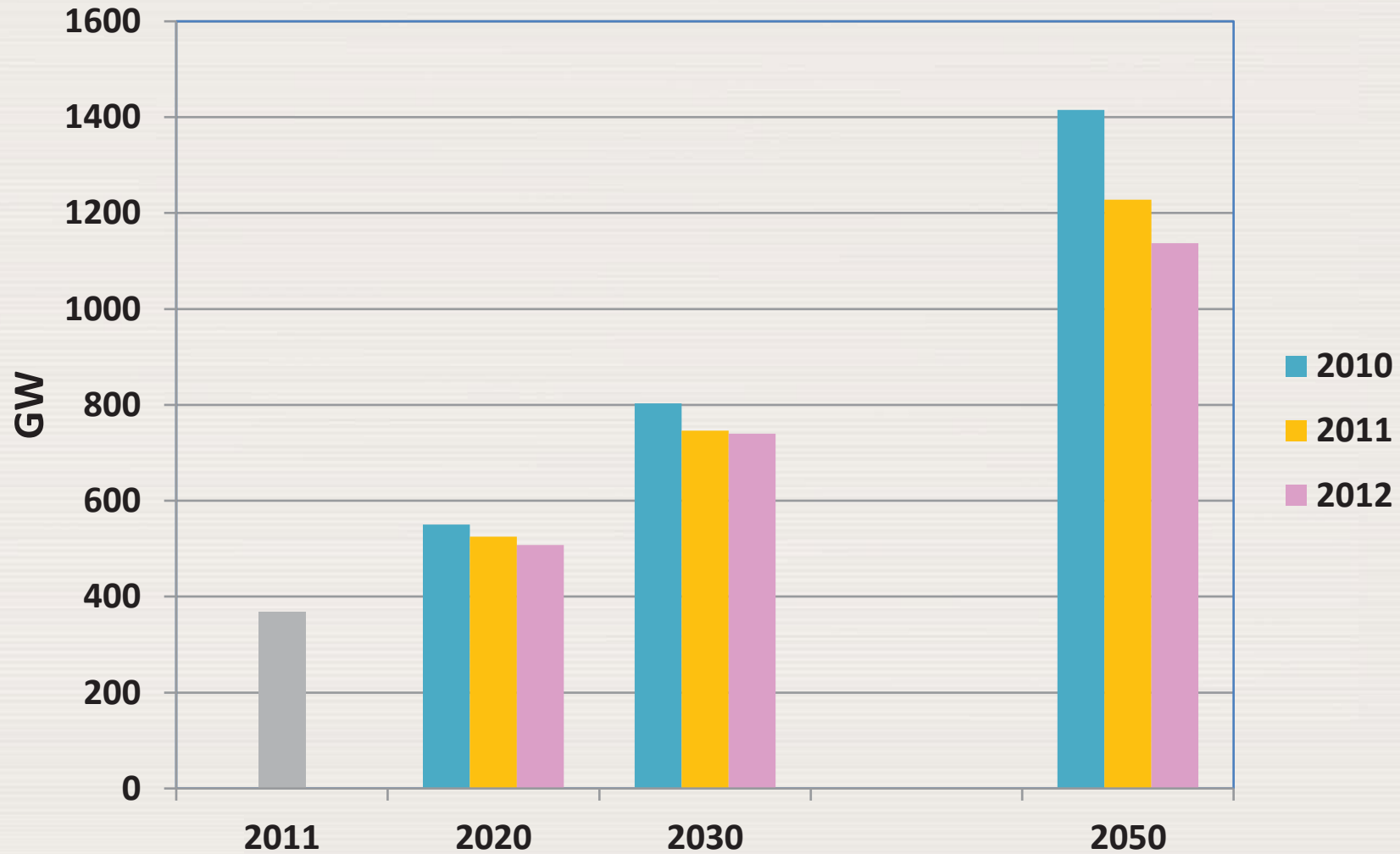
Nuclear capacity projections by region: HIGH



IAEA – LOW projection – 2050



IAEA – High projection – 2050



3. Conclusions

Not surprisingly:

- 'renaissance' enthusiasm dampened
- emotional and political decisions in some countries
- no retraction in key countries: China, Rep Korea, USA, UK
- reality will overtake emotions and romance

<http://www.iaea.org/OurWork/ST/NE/Pess/>



...atoms for peace.