

# Building infrastructure for new nuclear power programmes: IAEA assistance

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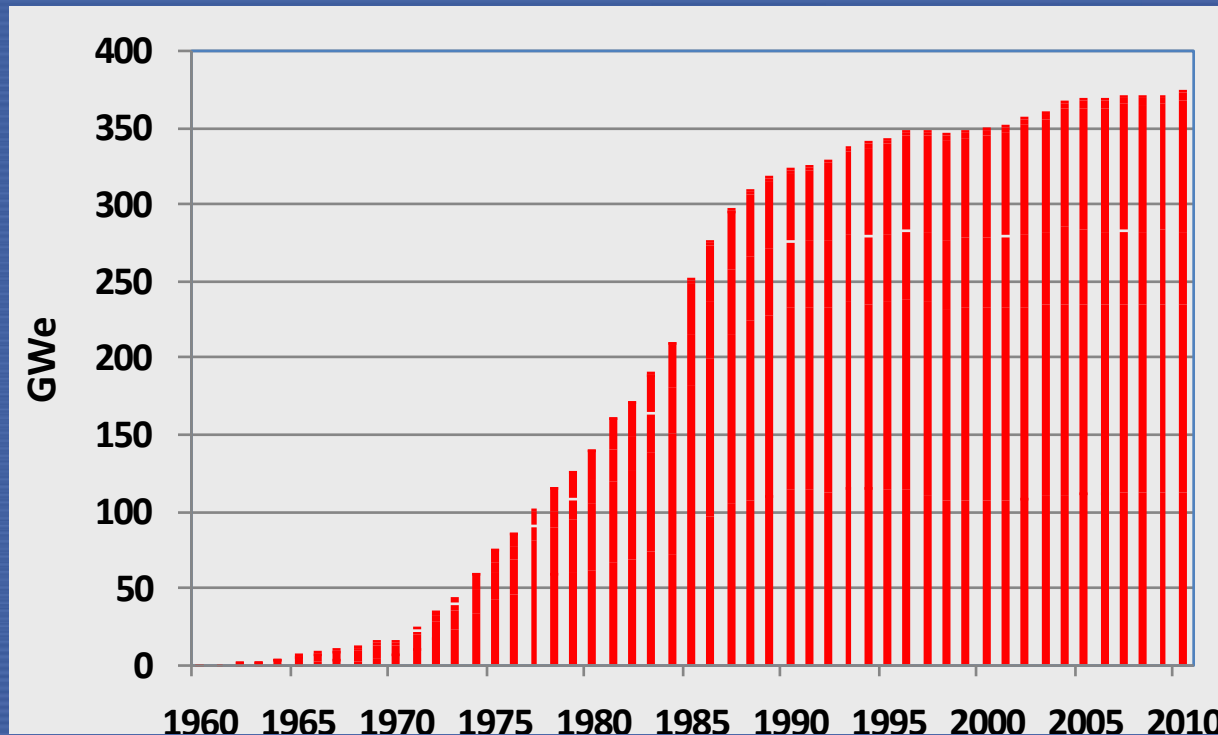


**IAEA**

International Atomic Energy Agency

# Nuclear power early 2011

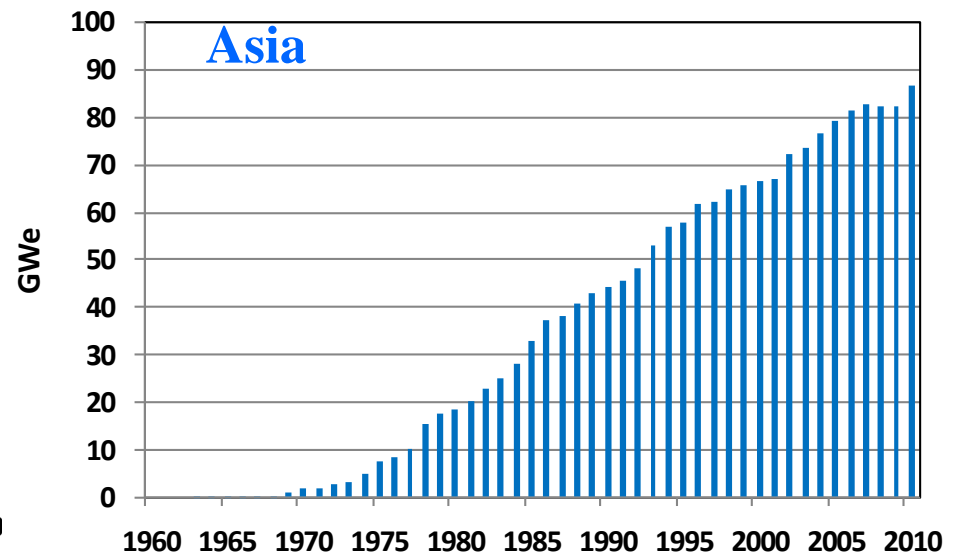
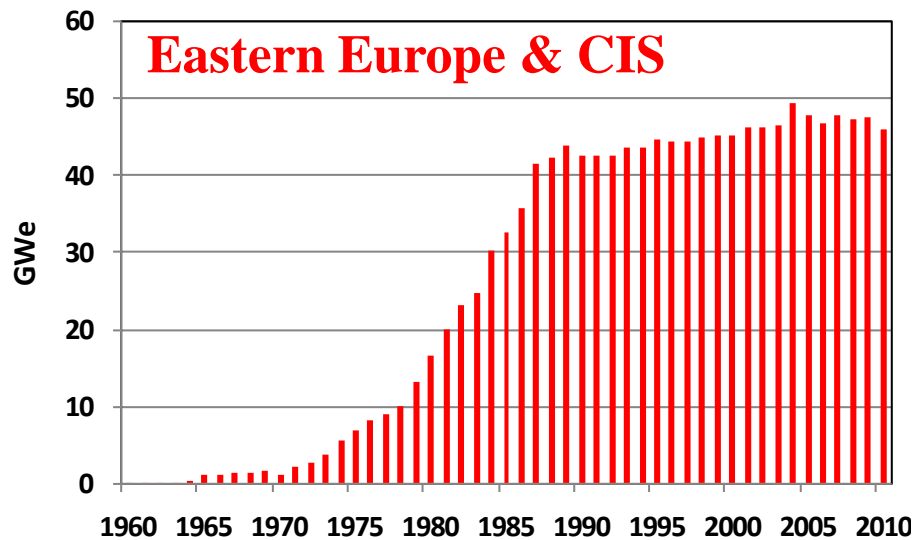
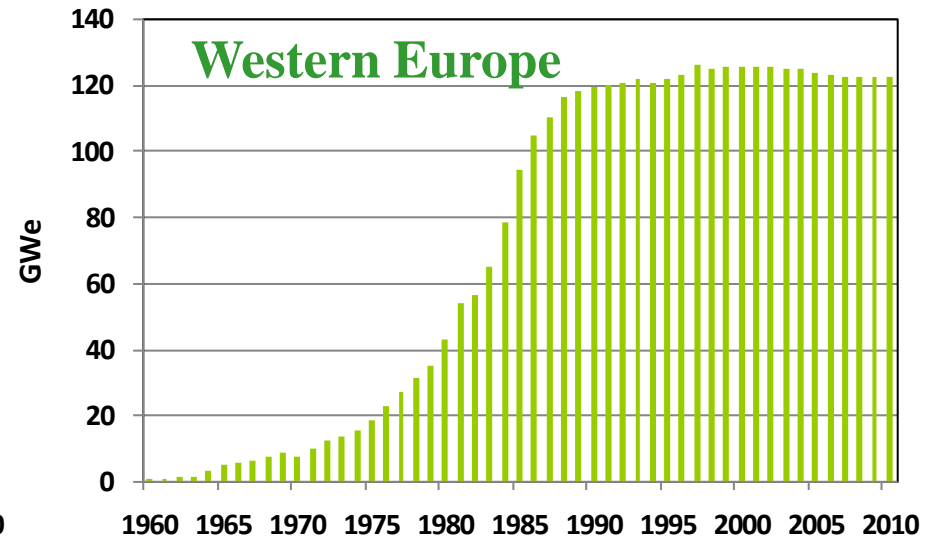
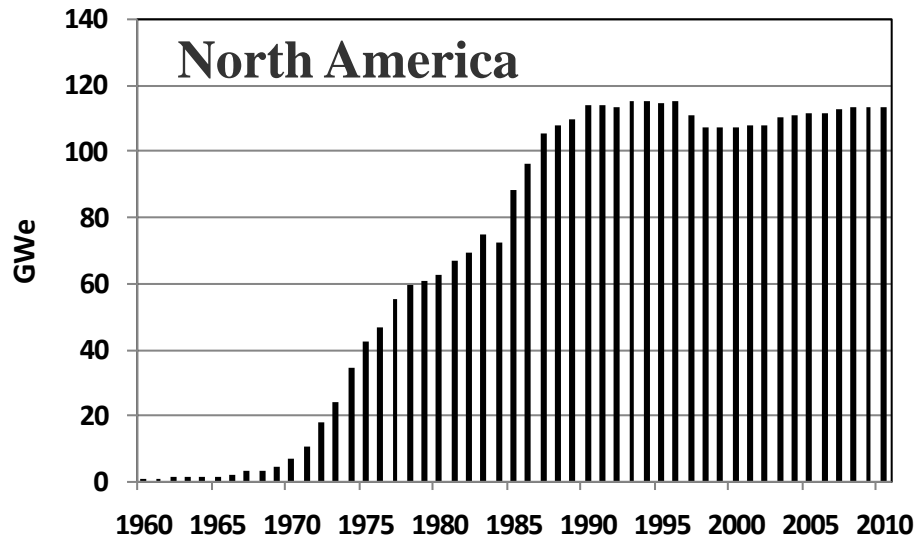
442 nuclear power plants (NPPs) operated in 29 countries worldwide, with a total installed capacity of 375 000 MWe.



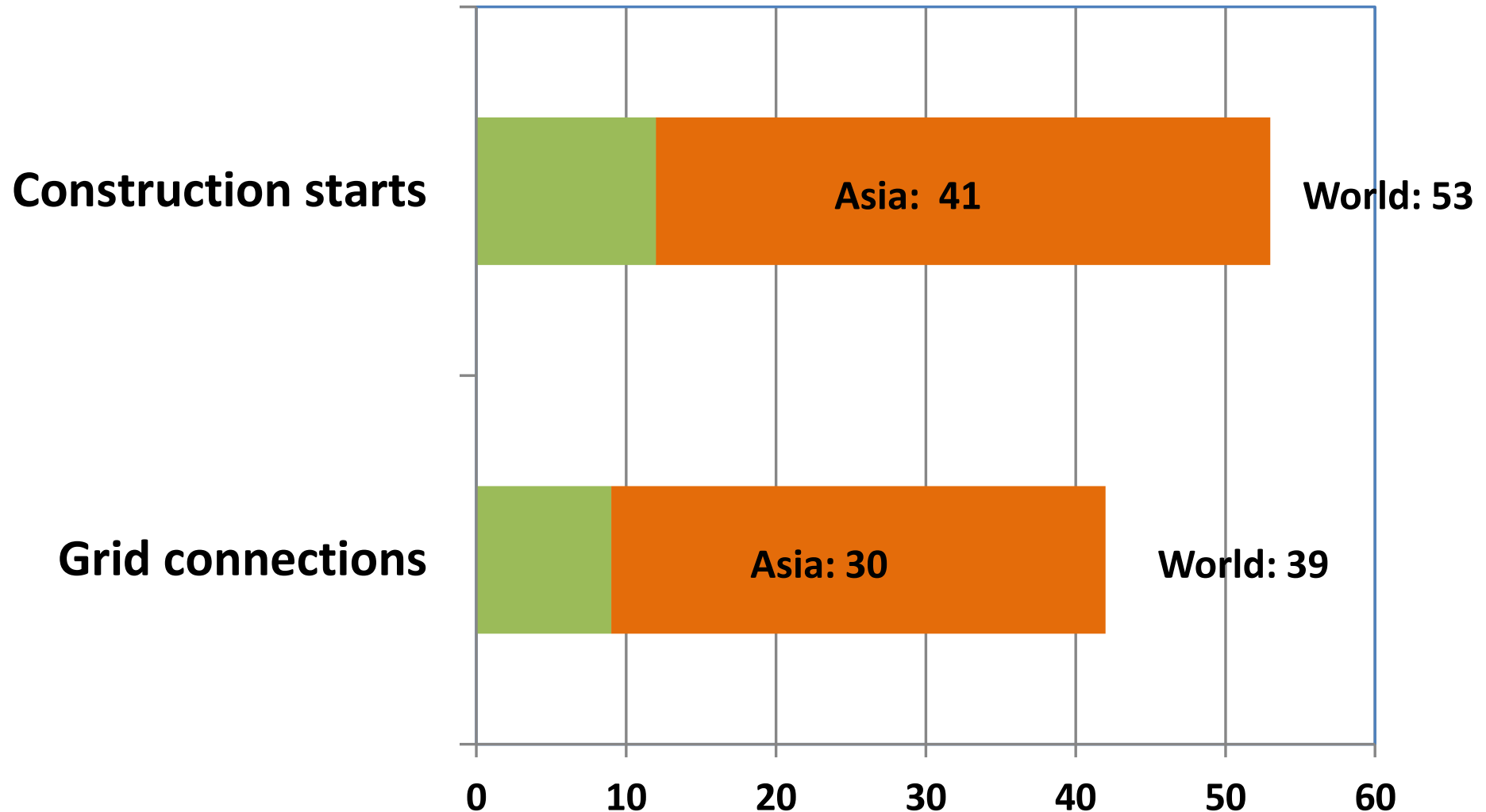
“Where does nuclear power go from here?”

64 NPPs under construction

# Development of regional nuclear generating capacities



# Construction starts and grid connections after 1. January 2000



# What will the renaissance look like?

- Take place mostly in countries that already have nuclear power
- 2010 IAEA projections: between 10-20 new countries by 2030
- Just keeps pace with overall electricity growth
- Most of the growth expected in Asia

# Drivers for interest in nuclear power haven't changed

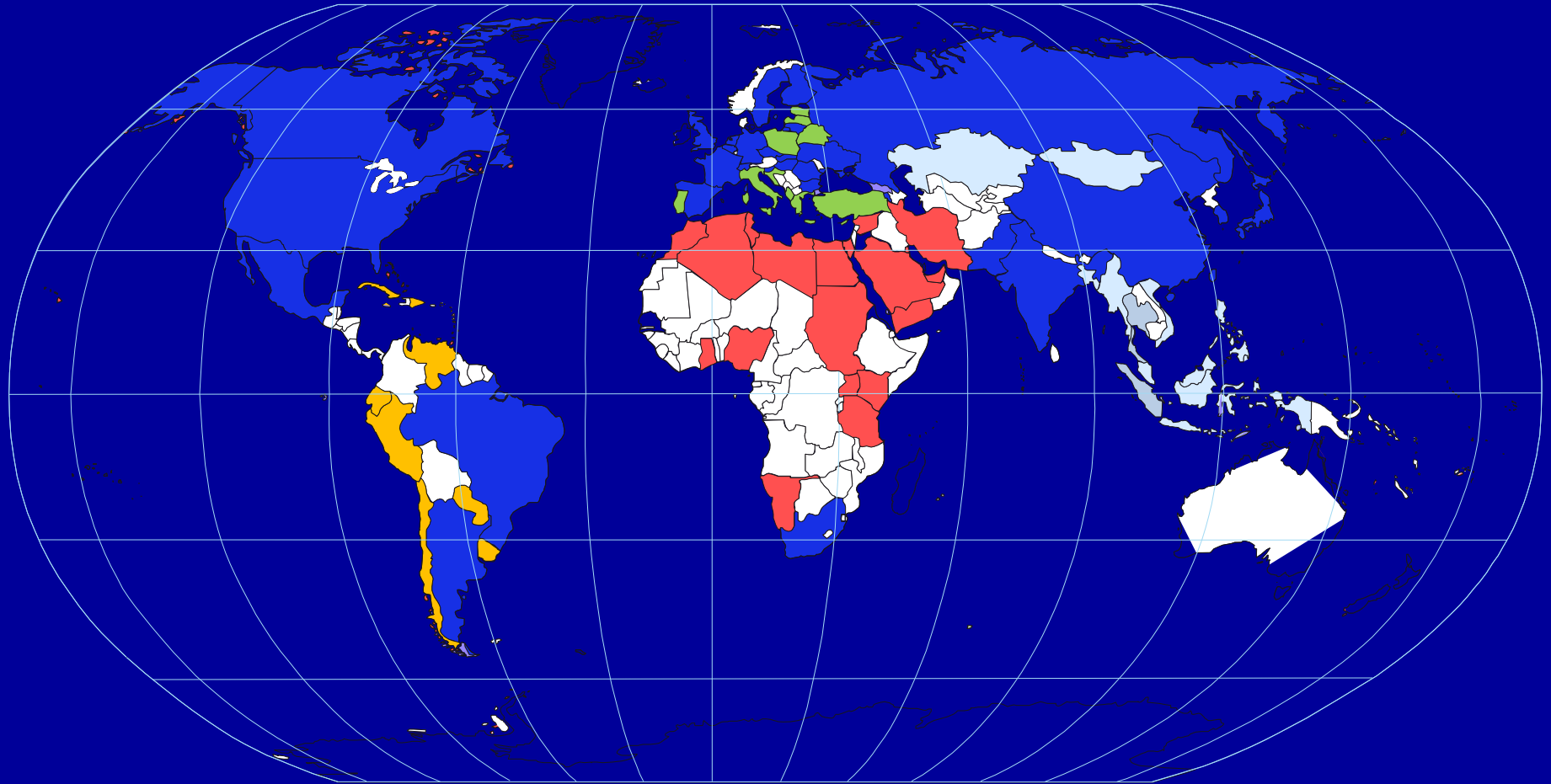
- Energy demand growth
- Energy security
- Fossil fuel
- Climate change
- Improved safety and operations record over the last 2 decades



In spite of economic crisis:

➤ Prospects better than ever since the mid 1990s

# More than 60 countries considering nuclear power programme



# No. of Countries by Stage of Infrastructure Development

Description	2008	2010
Interested	16	31
Considering	14	14
Active preparation with no final decision	7	7
Decided and started preparing infrastructure	4	10
Invitation to bid prepared	1	
1 <sup>st</sup> NPP ordered		2
1 <sup>st</sup> NPP under construction	1	1
<b>Total</b>	<b>43</b>	<b>65</b>



# IAEA and Nuclear Power



*“The Agency has a key role to play in ensuring that this expansion in nuclear power takes place in an efficient, responsible and sustainable manner.*”

*“...countries should be able to introduce nuclear power knowledgeably, profitably, safely and securely. .”*

**Yukiya Amano**

**Director General**

# IAEA's role

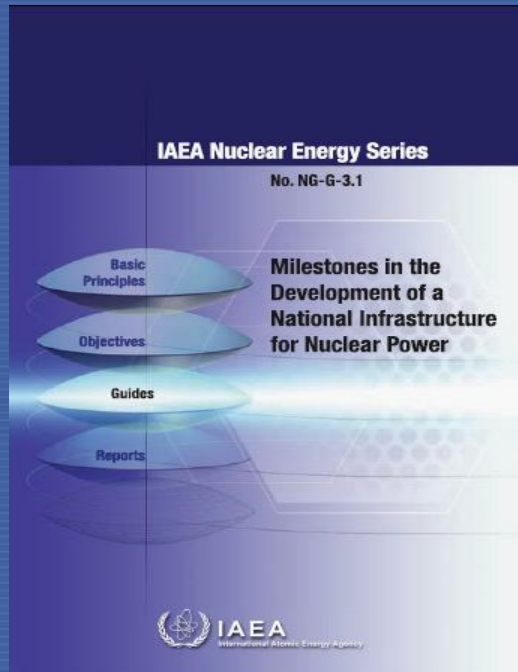
## Standards and Guidance

- Reviews and Services
- Capacity Building
- Knowledge Networks
- Forum for communicating, increasing transparency, sharing lessons learned

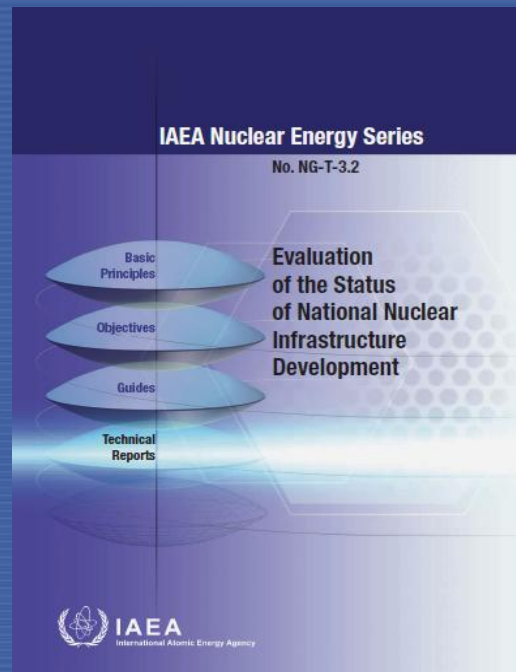
# Phased Approach to Nuclear Power



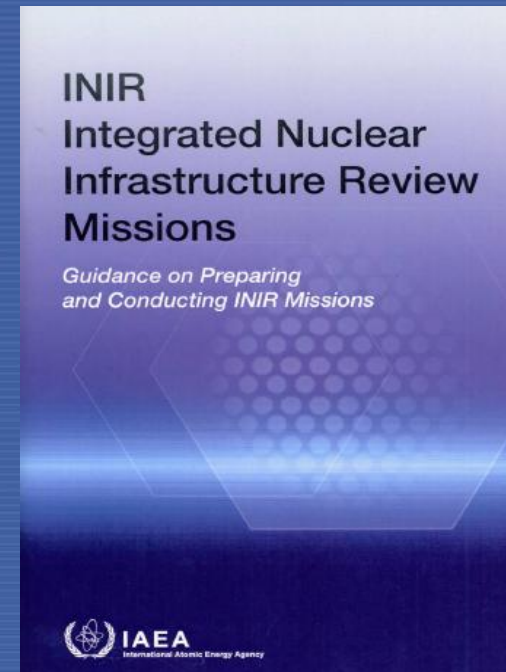
# IAEA Milestones Approach



2007

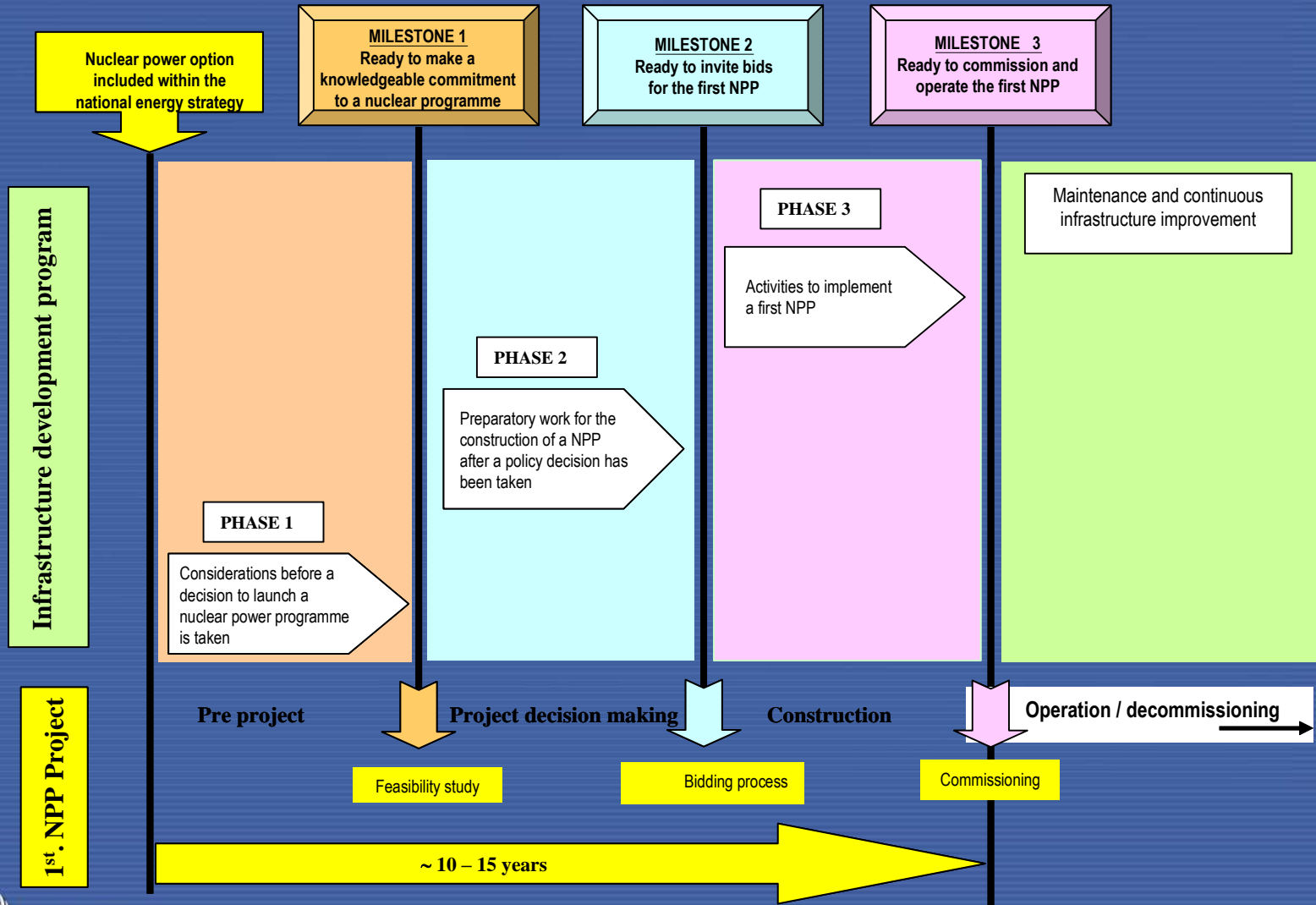


2008



2009

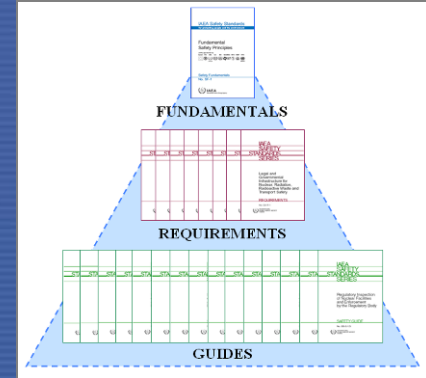
# Milestones in the Development of a National Infrastructure for Nuclear Power (NG-G-3.1)



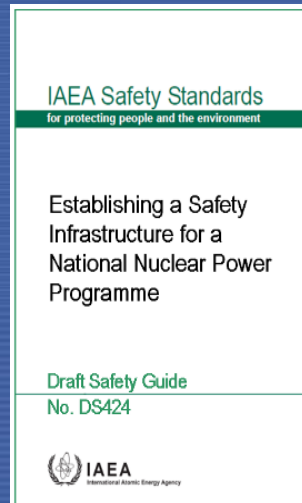
# Safety Infrastructure Guide SSG16



Increasing number of countries considering the introduction of nuclear power.



Need to comply with the IAEA Safety Standards for ensuring safety and enhancing international confidence.



Development of the Safety Infrastructure Guide DS424

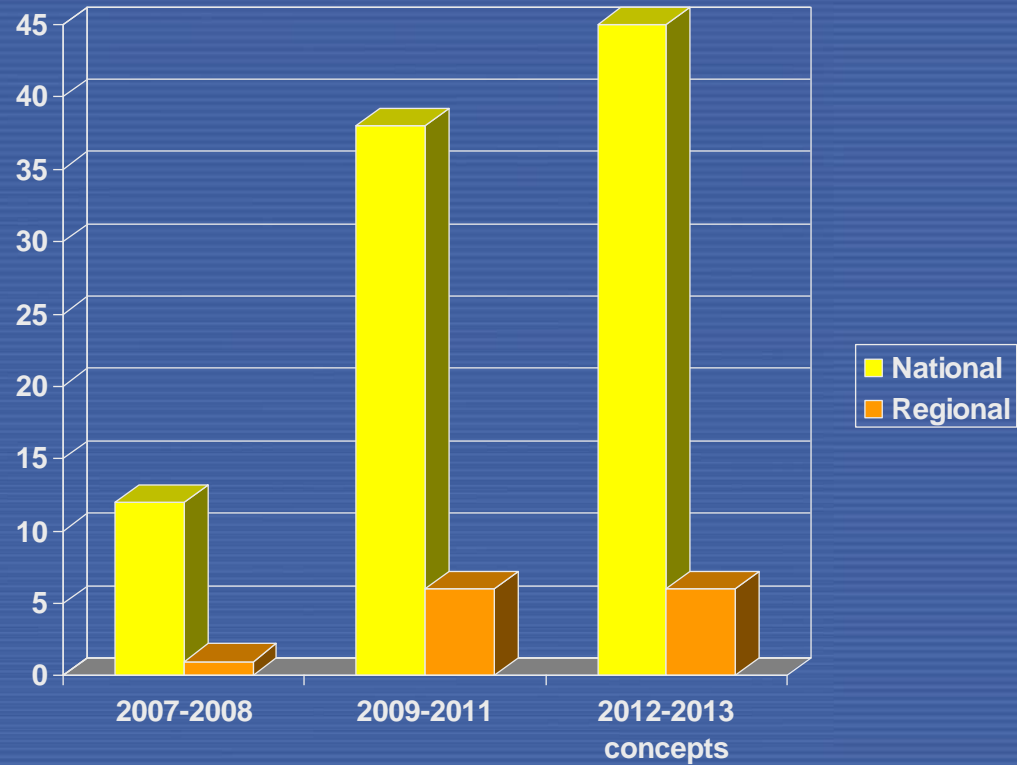
Roadmap to apply the entire set of IAEA Safety Standards in countries embarking on nuclear power



# Integrated Nuclear Infrastructure Reviews



# IAEA Technical Cooperation





# International cooperation and bilateral assistance

- Various international initiatives: IFNEC, EC, G8, WANO, WNA
- Bilateral Government – Government arrangements
- Consultants
- IAEA support

# Countries can use self evaluation and INIR to prioritize areas to receive assistance

*Identify gaps in the infrastructure*



Self-Evaluation  
Exercise

International  
Expert Reviews

Integrated National Plan



*Prioritize use of  
resources*

IAEA Assistance

Bilateral  
Assistance



*Measure  
progress  
toward next  
Milestones*

# Looking ahead

- **Some countries will continue to move forward toward nuclear power**
- **Lessons from Fukushima will be taken into account—it can't be “business as usual”**
- **IAEA assistance expected to increase for countries that have decided to start and are actively preparing (in Phase 2)**
- **Emphasis on self-evaluations and international reviews**
- **Increased bilateral Government-to-Government and other multinational activities**
- **Coordination of bilateral and multilateral assistance**

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# IAEA



*...atoms for peace.*