Studies on Nuclear Emergency Preparedness and Responses in the East Asia Summit Region

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GRIPS

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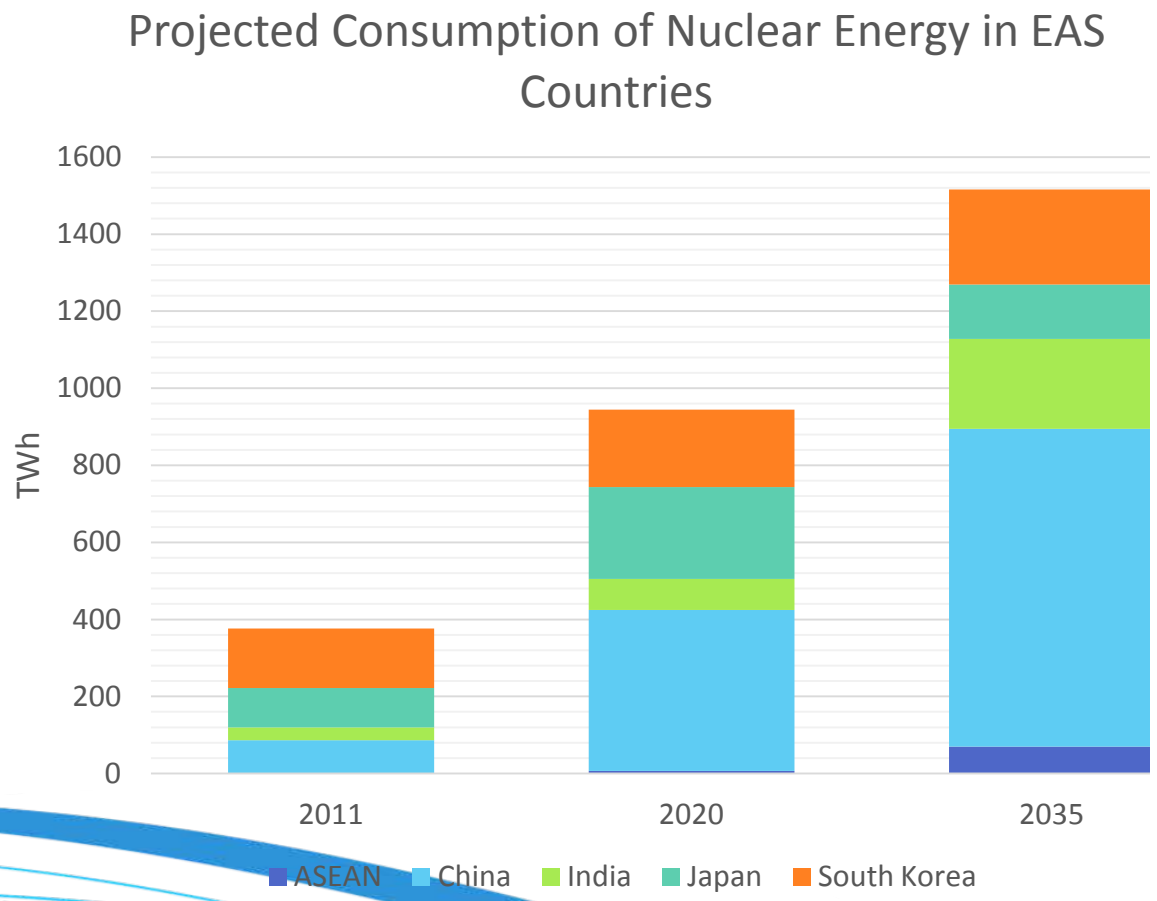
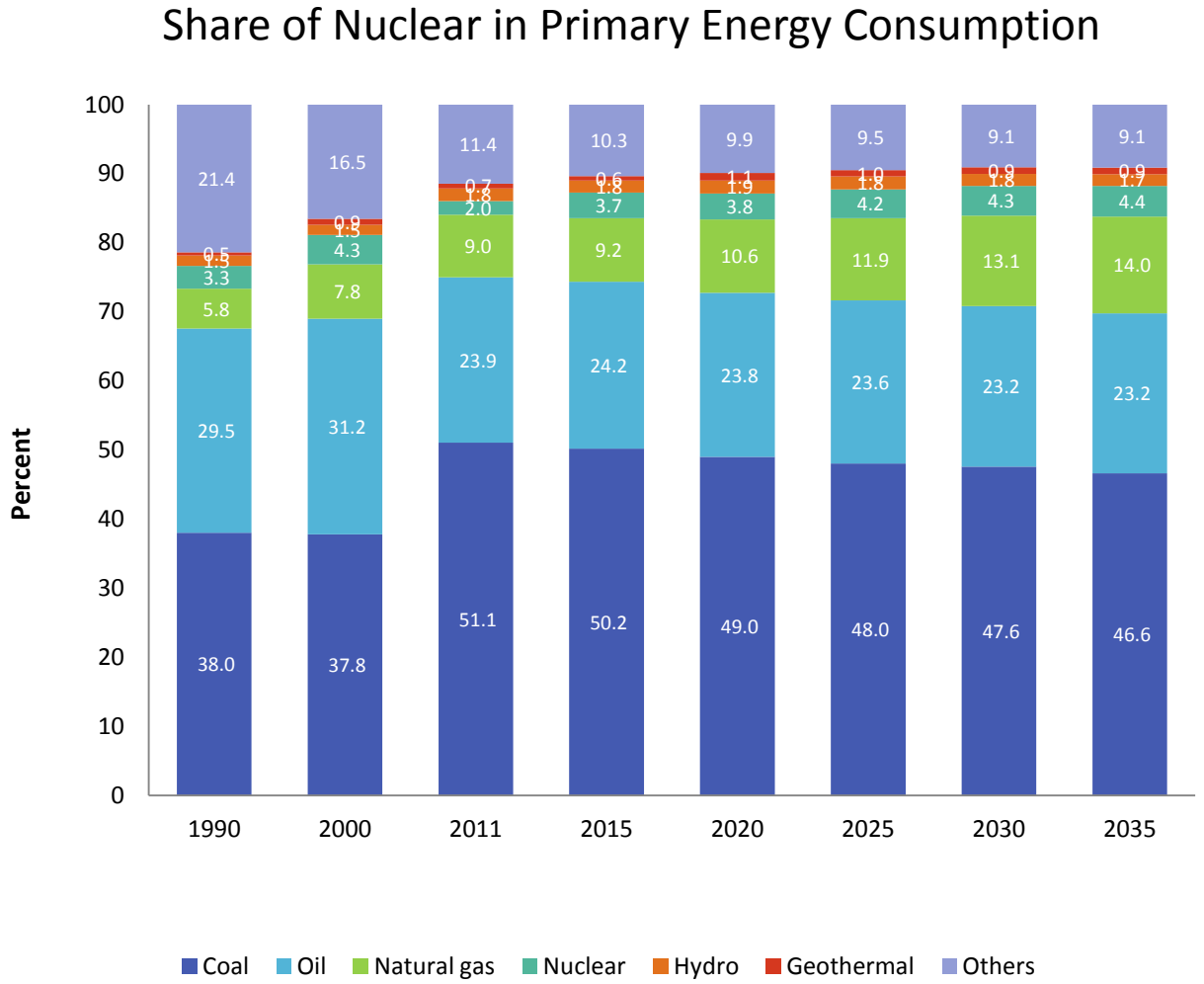
EAS Energy Outlook and the Trend for Nuclear Energy

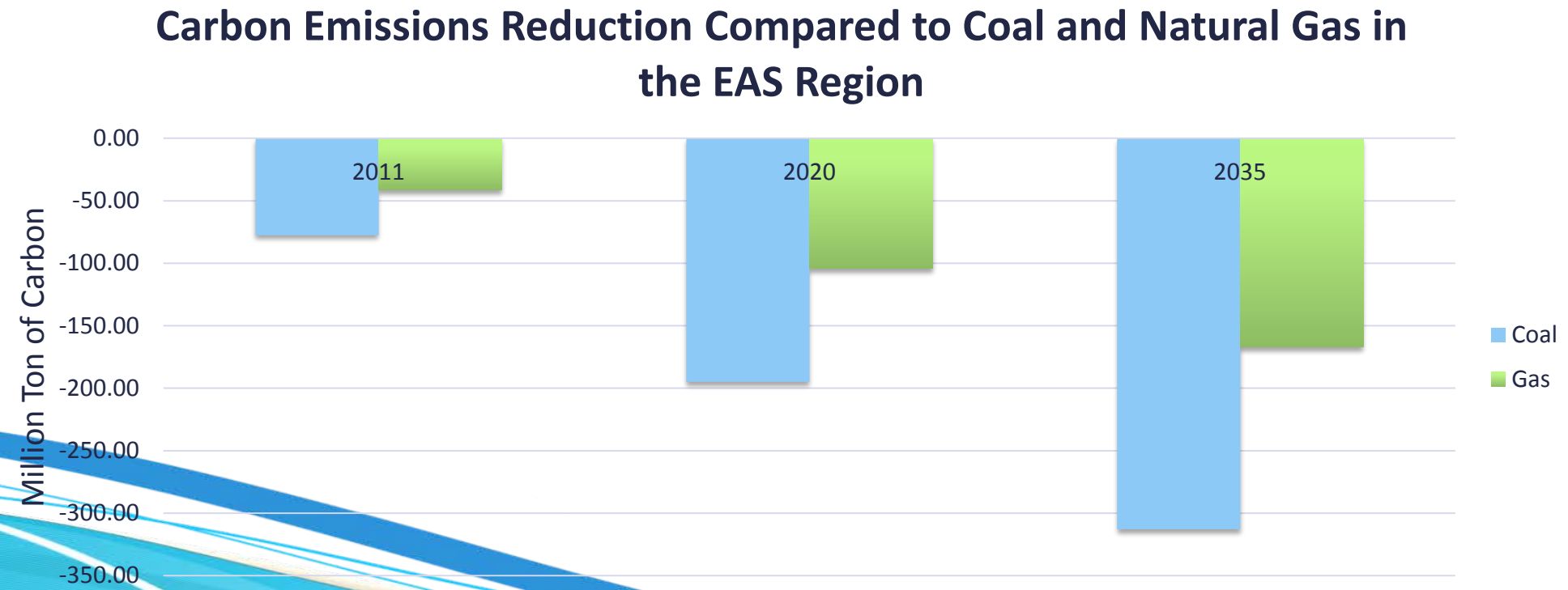




Source: ERIA

Benefits of Nuclear Energy

- Energy cost savings: as competitive as coal in terms of Levelized Cost of Electricity (LCOE)
- Energy security: fuel diversification, operational reliability in power supply, can serve as base load
- Carbon emissions reduction



Source: ERIA

Nuclear Power Plants: Existing and Planned Commercial Reactors in the EAS Region by Apr 2015

Country/Area	No. of Existing	No. of under Construction	No. of Planned
China	26	23	45
Chinese Taipei	6	2	0
India	21	6	22
Japan	43	3	9
South Korea	24	4	8
Indonesia	0	0	1*
Malaysia	0	0	0*
Thailand	0	0	0*
Viet Nam	0	0	4*

* Indonesia has 4 more proposed, Malaysia has 2 proposed, Thailand has 5 proposed, and Viet Nam has 6 more proposed.
Source: World Nuclear Association

ERIA Projects on Regional Collaborations in Nuclear Safety Management

- 2012-2013: Study on International Cooperation on Nuclear Safety Management in East Asian Countries I
- 2013-2014: Study on International Cooperation on Nuclear Safety Management in East Asian Countries II
- 2014-2015 (ongoing): Study on Building a Guideline and a Cooperative Framework in East Asian Countries in case of Radioactive Emergency

Study on International Cooperation Concerning Nuclear Safety Management in East Asian Countries (2013)

Background

- Key issues about nuclear energy;
  - ✓ Meeting growing electricity demand
  - ✓ Shared awareness on security & safety
  - ✓ Cross-border cooperation on nuclear

Objectives

- Sharing information on nuclear power safety management, standards and security status

Establishment of 3"S"
- Security, Safety and Safeguards

By sharing information on;
- Fukushima accident.
- Regulatory schemes in member countries.

1. Information collection/sharing
- Sharing information by introduction of Fukushima accident
- Restructuring safety regulations

2. Review on nuclear power policies in ASEAN countries, Korea and Japan
- Safety standards and regulatory schemes in ASEAN countries, Korea and Japan
- Nuclear development plans and regulatory systems
- International collaborations for nuclear safety in emergency preparedness and human resources

Working Group Discussions

What can we do for the secured safety on nuclear power in East Asia?

Draw a consensus on the necessity to strengthen nuclear power security and safety

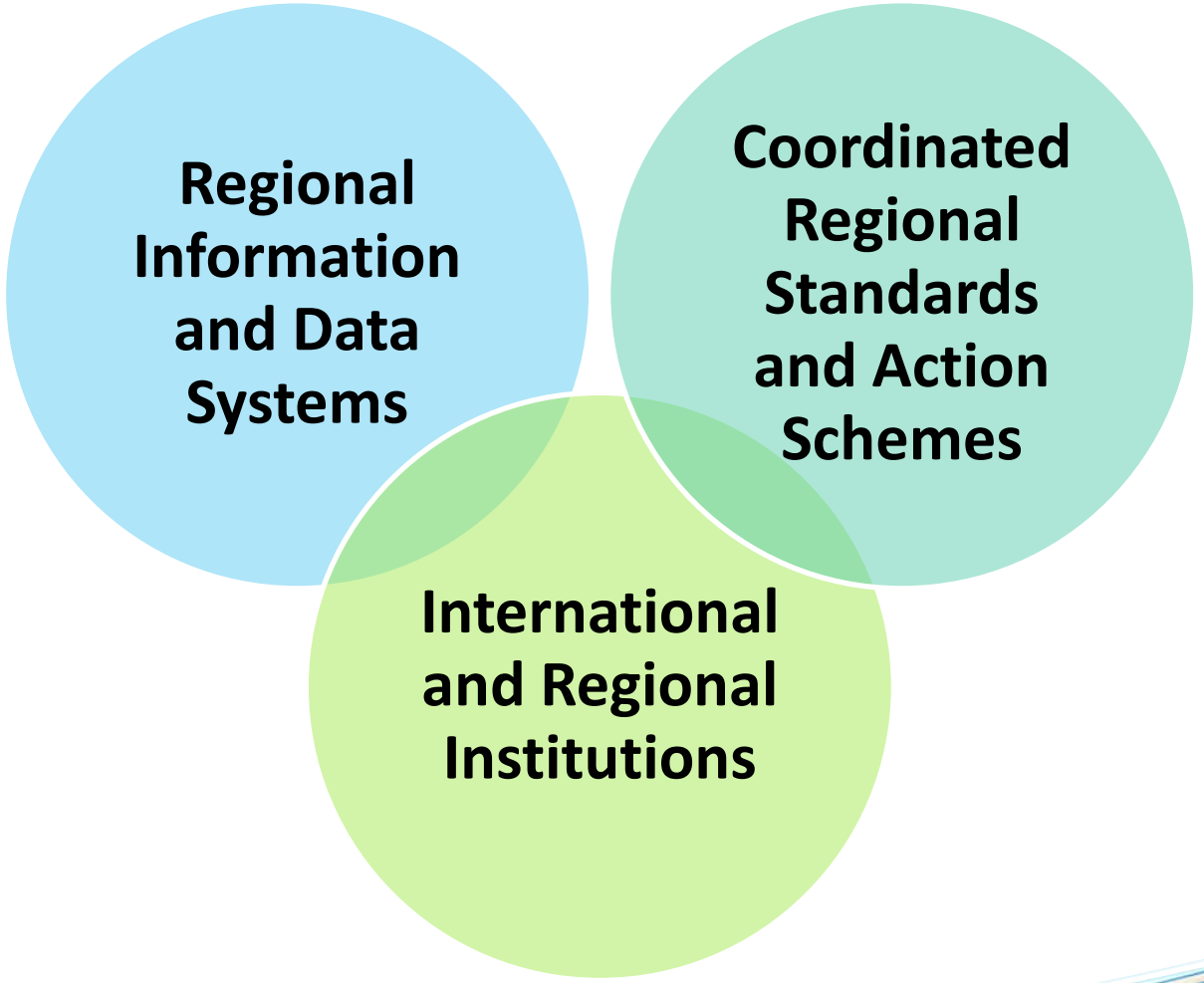
Study on International Cooperation Concerning Nuclear Safety Management in East Asian Countries (2014)

ERIA Working Group:
Member Country Proposals

Regional Collaboration Framework for Emergency Preparedness and Responses (EPR)

- A Monitoring Network
- Convention of Information Structure
- A network of Contact Points and Competent Authorities
-Information Exchange System

The Building Blocks of Regional Collaboration for EAS



Building a Guideline and a Cooperative Framework in East Asian Countries in case of Radioactive Emergency (2015)

The Building Blocks of Regional Collaboration for EAS

International and Regional Institutions

IAEA International Atomic Energy Agency

ANSN Asian Nuclear Safety Network

FNCA Forum for Nuclear Cooperation in Asia

Capacity Building Coordination Group

Topical Groups (TGs)

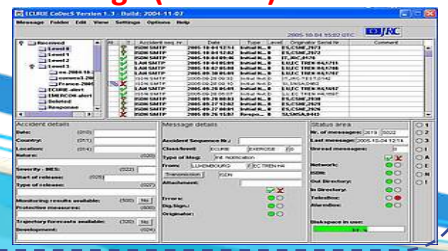
- *Education and Training (ETTG)*
- *Emergency Preparedness and Response (EPRTG)*
- *Governmental and Regulatory Infrastructure (GRITG)*
- *Operational Safety of Nuclear Power Plants (OSTG)*
- *Radioactive Waste Management (RWMTG)*
- *Safety Analysis (SATG)*
- *Safety Management of Research Reactors (SMRRTG)*
- *Siting (STG)*
- *Public Communication (new PCTG)*
- *Management System of Regulatory Bodies (new MSRBTG)*

Regional Information and Data Systems

RADLOT Radiation Source Location Tracking System

CARE system Computerized technical Advisory system for a Radiological Emergency

European Community Urgent Radiological Information Exchange (ECURIE)



Coordinated Regional Standards and Action Schemes

The Nordic guidelines for nuclear and radiological emergencies

Protective Measures in Early and Intermediate Phases of a Nuclear or Radiological Emergency

Nordic Guidelines and Recommendations

BERDSKABS STYRELSEN

Sundhedsstyrelsen National Institute of Radiation Protection

GEISLAVARNIR RÍKISINS

STUK

Statens strålevern Norwegian Radiation Protection Authority

Strål säkerhets myndigheten Swedish Radiation Safety Authority

2014

Regional Competent Agency Groups

ENSREG European Nuclear Safety Regulators Group

HERCA Heads of the European Radiological protection Competent Authorities

nks Nordic nuclear safety research

The Guideline and Cooperative Framework

- Membership
- Language
- Information and communication tool in emergency
- Timing to inform
- Maintenance of 24-hour contact system
- What kind of information to be shared in usual situation
  - Information exchange by using data server or email
- Frequency of training and drills
- Resources
- Revision of the “guideline”
- Ad hoc groups and etc.

Sample Structure from the Nordic Manual

1. Scope
2. Co-operation in emergency preparedness
2.1 Nordic Working Group of Emergency Preparedness (NEP)
2.2 Exercises and drills
2.3 Nordic contribution to international work
2.4 Exchange of background information regarding emergency arrangements
2.5 Public information
3. Response arrangements
3.1 Communication policy between the Nordic authorities during emergencies
3.2 Notification and exchange of information
3.2.1 Threshold of dissemination of information
3.2.2 Communication means
3.2.3 Public information issues
3.3 Co-operation and co-ordination during response phase
3.3.1 Co-operation regarding safety assessments and protective measures
3.3.2 Additional exchange of information of urgent nature between the Nordic authorities and Russian or Lithuanian nuclear installations
3.4 Assistance
4. Revision of this document

Conclusions and Policy Implications

- Nuclear remains an important energy option for EAS countries, not only because it is cheaper and cleaner, but also because it enhances energy security. The development of nuclear energy in the EAS region has accelerated recently.

- Regional collaborations to enhance nuclear safety management, especially preparedness and responses to nuclear emergencies are called for.

- ERIA studies confirmed such necessity and achieved consensus through consultation with experts from member countries and laid down the foundation of a guideline to formulate an EAS regional framework for collaborations in nuclear safety.

- ASEANTOM: a network body of nuclear energy and safety regulators in the ASEAN countries has been established and endorsed by ASEAN. One of its main functions is to develop regional collaborative framework in nuclear emergency preparedness and responses.

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