Energy Issues in Northeast Asia and Regional Cooperation: A Korean Perspectives

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Korea at a Glance (2002)

- Land Area: 99,392 km^2
- Population:47.6 million
- GDP: US$ 477.0 billion
  - US$ 10,013 per capita
- Energy demand: 209 MMTOE
- Import dependence: 97.1 %
  - Energy import : US$ 32.0 bill.
- Korea ranks in the world
  - No. 10 in energy demand,
  - No. 4 in oil imports,
  - No. 2 in coal and LNG imports.

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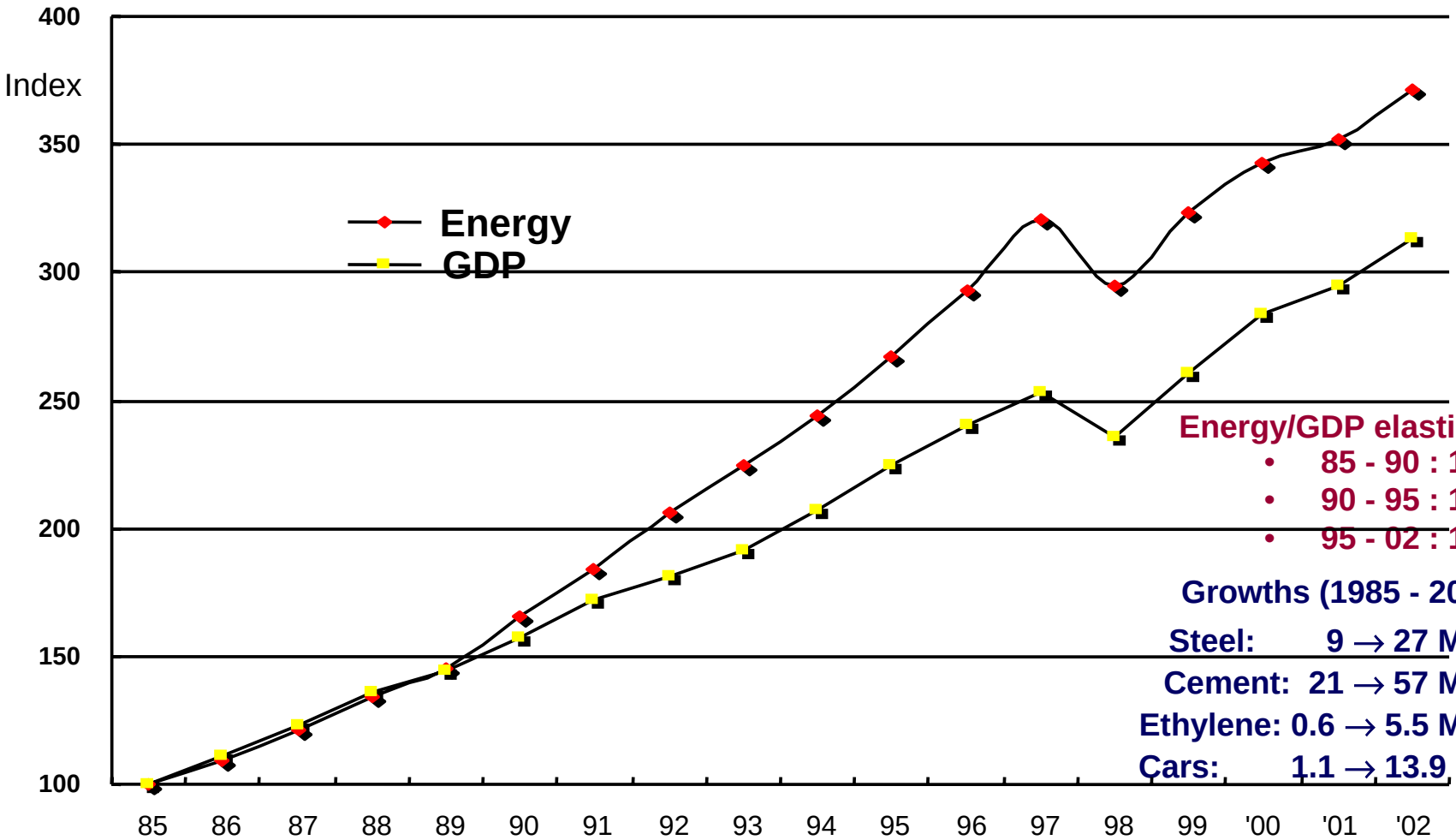
Energy Consumption & Economic Growth



Energy/GDP elasticity

- 85 - 90 : 1.12
- 90 - 95 : 1.35
- 95 - 02 : 1.02

Growths (1985 - 2003)

Steel: 9 → 27 MMT

Cement: 21 → 57 MMT

Ethylene: 0.6 → 5.5 MMT

Cars: 1.1 → 13.9 mill

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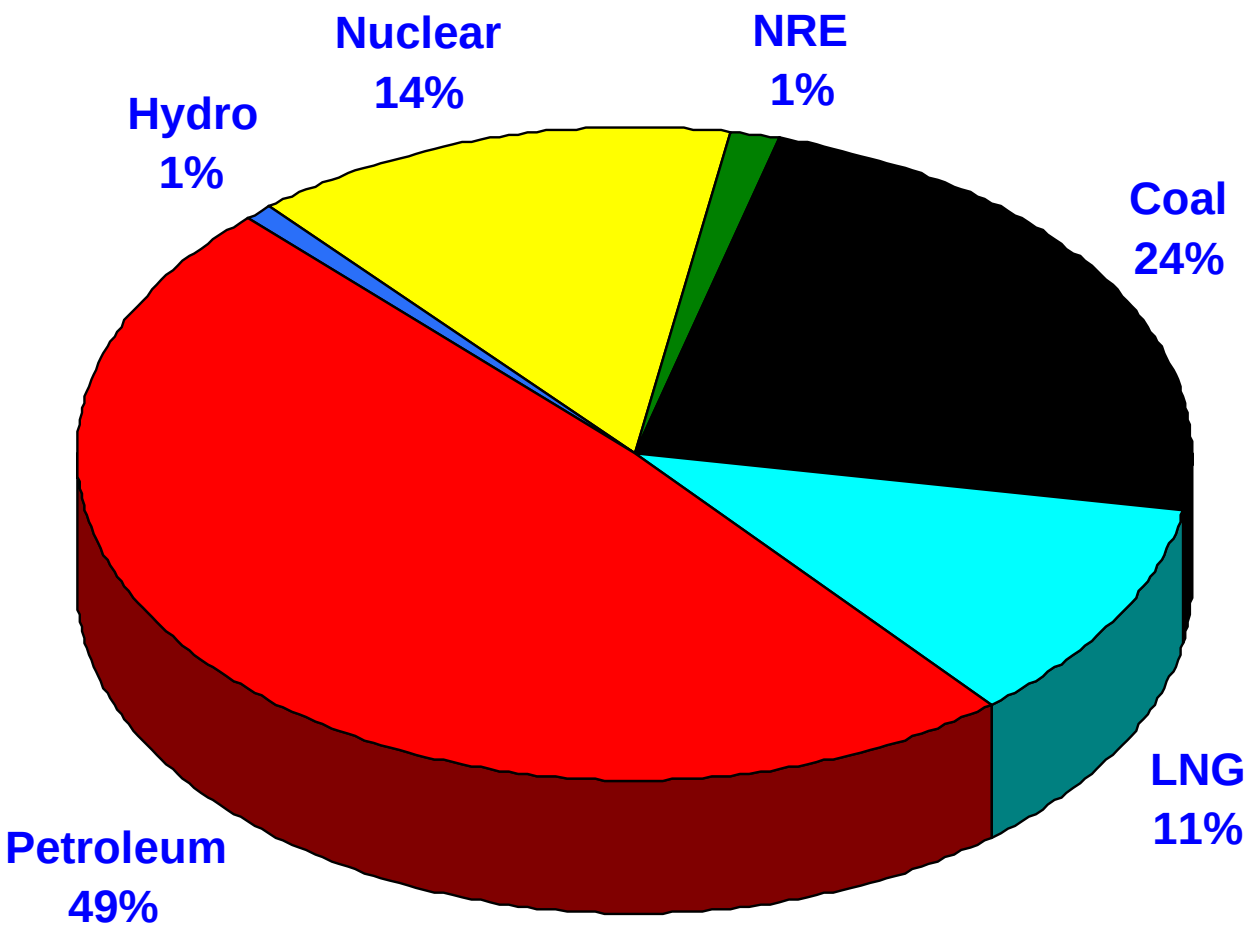
Energy Consumption by Source (2002)



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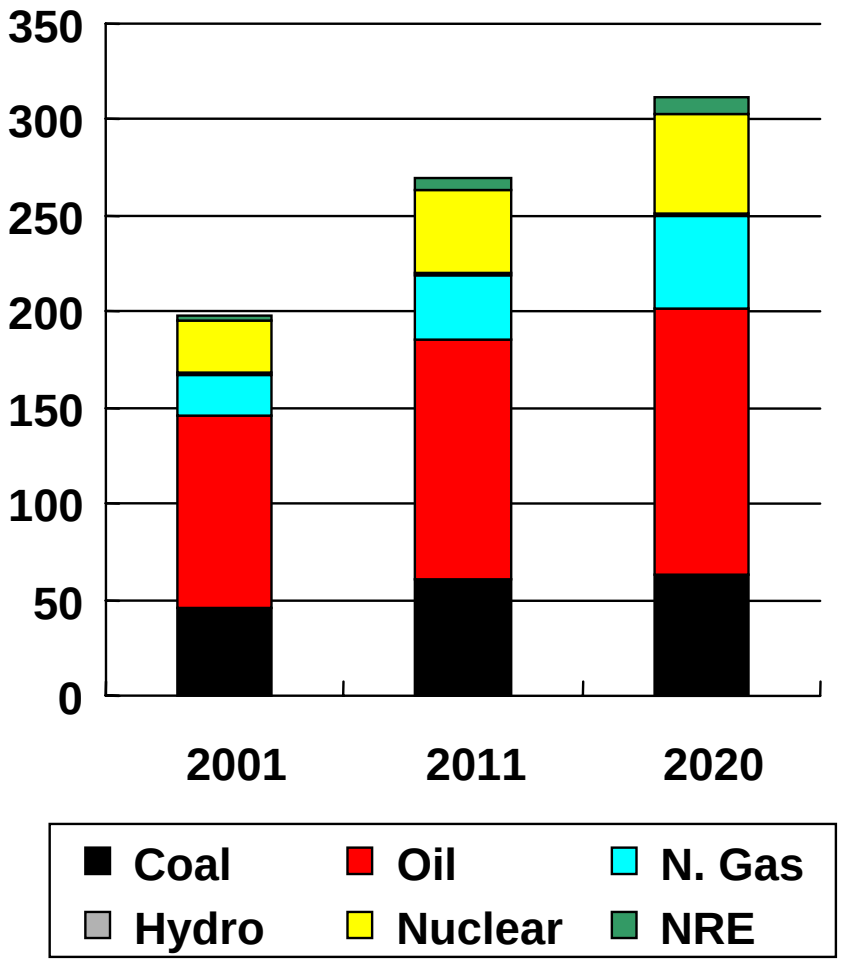
Energy Demand Outlook in Korea (by source)



	2001	2011	2020
Coal	46	60	63
Oil	100	125	140
LNG	21	33	48
Hydro	1	1	1
Nuclear	28	44	52
N&R E	2	6	9
Total	198	269	312

Unit: Million TOE

Source: KEEI, 2003

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Shadows of the Success

- **Overseas dependence increased**
  - **74 per cent in 1980 ⟶ 97 per cent in 2002**
- **Energy intensity increased**
  - **0.35 TOE/million Won in 1990 ⟶ 0.40 in 2002**
- **Environmental backwardness**
  - **CO_2 emission: 65 million tC in 1990 ⟶ 127 million tC in 2002**
  - **Siting problems, in particular, for nuclear power plants**
- **Weak market mechanisms**
  - **Reform of energy pricing and restructuring large state-owned enterprises to improve market efficiency**

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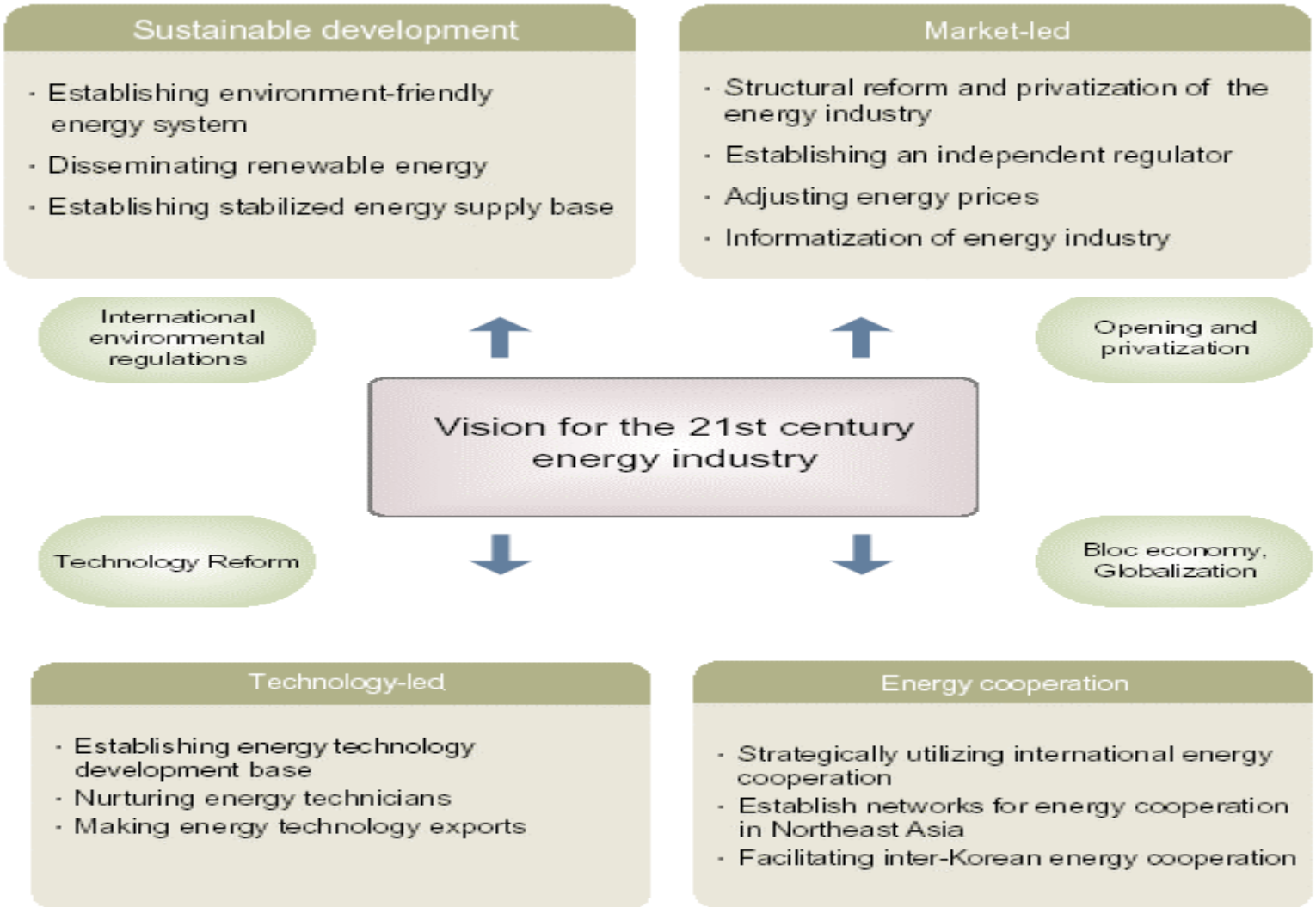
Vision for Energy Policy in Korea:

Sustainable Korea, Hub of Northeast Asia

- **Establish an energy system for sustainable development**
- **Foster an energy industry with competitiveness and active market functions**
- **Promote energy technology development/exports**
- **Become an energy hub of Asia with an open energy system**

Source: MOCIE Homepage

Energy Policy Strategies in Korea



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Energy Challenges Facing Northeast Asia

Two paths are ahead: Conflict or Cooperative

Cooperative future ensures mutual benefits

Countries in market economy

- Ensure stable energy supply
- Enhance energy efficiency
- Global environment protection

Countries in transition

- Needs for energy infrastructure investment
- Development of energy resources
- Technology cooperation

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Needs for Energy Cooperation in Northeast Asia

- **Enhancing regional energy security capability**
  - **Developing indigenous energy resources, i.e. oil and natural gas**
  - **Reducing dependency on the Middle East**
- **Mutual benefits from cooperative resource allocation/trades**
  - **Joint development of resources and infrastructures**
  - **Natural gas pipelines and power interconnection grids**
- **Improvement in environmental quality**
  - **Joint efforts for energy efficiency improvements and conservation**
  - **Implementation of the Clean Development Mechanism (CDM)**
- **Spreading effects on the other sectors**
  - **Lessening political tensions**
  - **Promotion of the related industries: Iron-Steel, transportation, communications, etc.**

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Outstanding issues for energy regional cooperation in NE Asia

- **Project/Program Development: Business opportunities**
  - **Oil and natural gas pipeline projects**
  - **Power interconnections**
  - **Joint oil stockpiling**
  - **Information/data sharing mechanisms**
- **Creation of Institutionalized Multilateral Cooperative Framework**
  - **Examples: OLADE in Latin America, Energy Charter Treaty**
  - **Bilateral *versus* Multilateral cooperation between the countries**
- **Energy Poverty Problems**
  - **Energy accessibility problem in developing economies in the region**
  - **Nuclear issues in the DPR Korea**

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Feasible Energy Projects in NE Asia

- Petroleum -

- **Projects**
  - Joint strategic oil stockpiling
  - FTA for oil products
    - Japan is believed to have more advantage than Korea due to more upgrading facility and lower capital costs in Japan.
  - Sharing refinery/upgrading facilities
  - Sea-lane transportation security for crude oil
- **Benefits**
  - Enhancing energy security capability
  - Reducing investment requirements
  - Improving regional oil market efficiency

⇒ **NE Asian common oil market in the long run**

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Feasible Energy Projects in NE Asia

- Natural Gas -

- **Projects**
  - Development of natural gas field in Russian Far East and China: Irkutsk, Yakut, Sakhalin
  - Construction of cross-border pipeline networks
- **Benefits**
  - Diversification of energy sources (from coal and nuclear)
  - Improvement of environmentally friendly energy system

⇒ **Integrated regional energy system in NE Asia**

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Feasible Energy Projects in NE Asia
- Electricity -

- **Projects**
  - **Development of power plants: Hydro in Russian Far East**
  - **Cross-border power interconnection grids:**
    - **Project under study: < Russia - DPR Korea - Korea >**
  - **Joint storage of spent fuels: Nuclear**
- **Benefits**
  - **Resolving plant siting problem: Korea, Japan**
  - **Efficient power production/supply system**

⇒ Integrated regional power grid system in NE Asia

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Implementation of Energy Cooperation in NE Asia

- Principles -

- Joint efforts/Political consensus
  - De-coupling the energy issue from politics
- Removing/reducing impediments to the efficient development, production, supply and use of energy
- Non-discriminatory trade and investment
- Harmonization of energy with the other sector (e.g. environment)
- Task-sharing with common goal
- Open regionalism
  - Participation of countries outsides the region (USA, EU, ASEAN)

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Implementation of Energy Cooperation in NE Asia

- Policy Requirements -

- **The Short Term**
  - **Establishment of policy dialogues channel between governments: Senior official meeting**
    - **Confidence building**
  - **Encourage business dialogues & participation**
  - **Promotion of information/data exchange and sharing mechanisms**
  - **Joint research/study for possible energy projects: Natural gas, Interconnection, Oil stockpiling**
  - **Capacity building projects: Creation of regional research body**
- **The Long Term**
  - **Creation of institutionalized frameworks for multilateral regional energy cooperation: Charter, Regional Energy Community**
  - **Introduction of policy coordination functions: Institutional arrangement**
    - **Development of joint policy agenda for common goals/task sharing**
  - **Address on an intra-regional financing mechanisms**

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Creation of Multilateral Cooperation Body

- Roadmap 1: Top-down approach -

- **Approaches:**
  - Step 1: Political consensus
  - Step 2: Creation of institutional framework (eg, Charter, Treaty)
  - Step 3: Establishment of cooperative entity
  - Step 4: Development & Implementation of actual cooperative projects
  - Step 5: Evolution to regional common energy market
- **Examples:** ASEAN, APEC, TRADP, ECT
- **Prerequisites:**
  - Political/diplomatic approach/dialogues (eg, SOM)
  - Joint study for preparation
- **Expected obstacles:**
  - Political/economic conflicted interest of each country

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Creation of Multilateral Cooperation Body

- Roadmap 2: Bottom-up approach -

- **Approaches:**
  - **Step 1: Implementation of actual cooperative projects (eg, Power interconnection, Pipeline networks): Commercial project basis**
  - **Step 2: Creation of multilateral cooperative body by project (Business forum, Consortium)**
  - **Step 3: Institutional arrangement supporting the project**
  - **Step 4: Evolution to the multilateral energy cooperation frameworks**
  - **Step 5: Address to the regional energy common market**
- **Examples: EU, WEC, IEA**
- **Prerequisites:**
  - **Participants in the projects: Financing and operation**
  - **Joint feasibility study for the projects**
  - **Investment protection mechanism**
- **Expected obstacles:**
  - **Uncertainty related to investment risks**

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Creation of Multilateral Cooperation Body

- Roadmap 3: *Ad hoc* approach -

- **Approaches:**
  - **General direction: Revision/Expansion of existing multilateral energy cooperative body (KEDO, TRADP)**
- **Background:**
  - **KEDO is now subject to revision due to nuclear issue in the DPR Korea**
    - **Several types of projects are proposed to replace the KEDO LWR's. (eg: Sakhalin gas project, Russia-NK power interconnection)**
  - **TRADP intends to expand its regional scope to Northeast Asia**
- **Outlines:**
  - **Establish a multilateral energy cooperation framework when the KEDO projects are in negotiation for revision**
    - **Automatic involvement of the KEDO participating countries**
    - **Participation of countries to be beneficial from elimination of nuclear issue in the DPR Korea: China and Russia**

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Creation of Multilateral Cooperation Body

- Roadmap 3: *Ad hoc* approach -

- **Prerequisites:**
  - **Harmonization of foreign policies between Korea, Japan, the US and the DPR Korea**
  - **Creation of new international/financing framework for energy projects for the DPR Korea and also for participation of interested countries.**
- **Expected obstacles:**
  - **Acceptability for the DPR Korea, the US and the neighboring countries**
  - **Identification/development of new projects to replace the KEDO LWR's and financing problems (namely post-KEDO projects)**

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Thank you very much

Gamsa'hamnida

- End -

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