

IAEA  
Assurances of Supply and Nonproliferation

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Reflections on Perspectives of a Peaceful Nuclear Power

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**Graham Allison**

**Director, Belfer Center for Science and International Affairs**

**Douglas Dillon Professor of Government**

**Harvard University**

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# Dilemma of a Responsible Peaceful Nuclear Power

How to:

Assure access to “benefits of nuclear technology”  
including fuel for reactors

While:

Preventing proliferation of nuclear weapons or  
infrastructure for production of nuclear fuel.

# Challenge to Global Nuclear Order

## International systems

- Architecture
- Design
- Construction management
- Operation

# NPT

- Preamble: “...the benefits of peaceful applications of nuclear technology ...should be available for peaceful purposes to all Parties of the Treaty.”
- Article IV: “All the parties to the Treaty...have the right to participate in, the fullest possible exchange of equipment, materials and scientific and technological information for the peaceful uses of nuclear energy.”

# “ENERGY INDEPENDENCE”

a politically attractive aspiration

BUT

an illusion in an interdependent, global economy

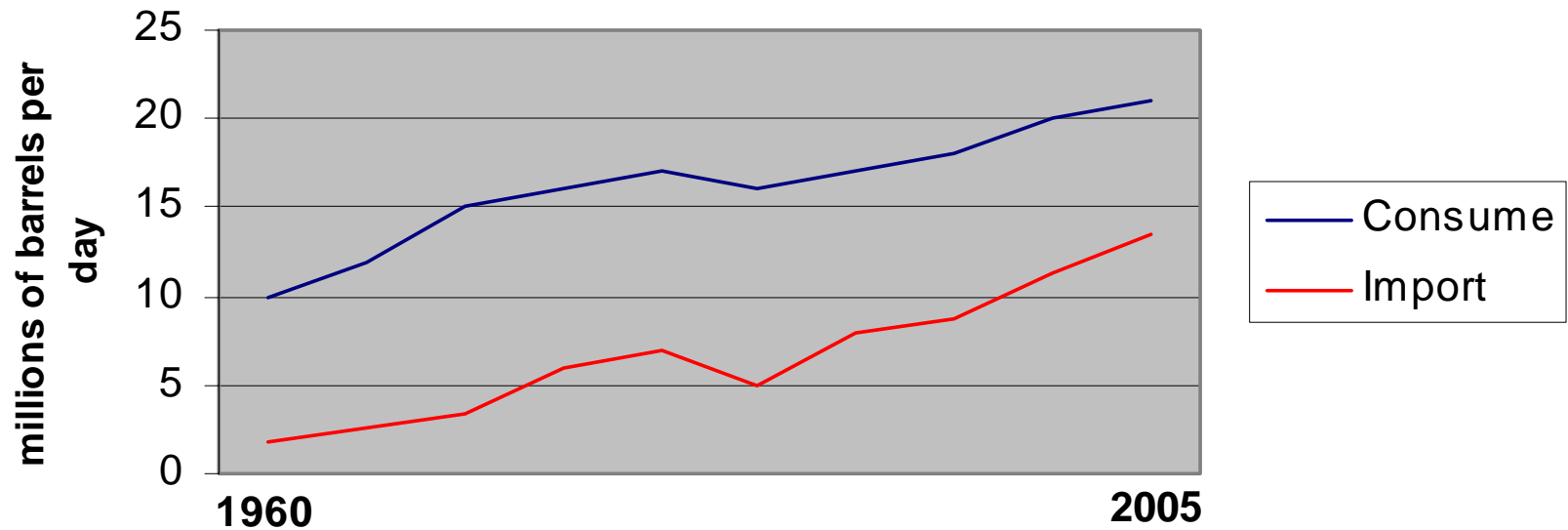
# U.S. “ENERGY Independence”

## American Presidents:

- Bush State of the Union Jan. 2006: “Make our dependence on Middle Eastern oil a thing of the past by replacing more than 75% of our oil imports from the Middle East by 2025.”
- Nixon State of the Union 1974: “In the year 1980, the U.S. will not be dependent on any other country for the energy we need.”
- Ford 1975: “My goal is make America independent of foreign energy sources by 1985.”
- Carter 1979: “The generation-long growth in our dependence on foreign oil will be stopped dead in its tracks right now and then reversed as we move through the 1980’s.”

# U.S. "ENERGY Independence"

## U.S. Oil Consumption and Imports 1960-2005



# Nuclear Energy “Independence”

Independence in:

- Nuclear reactors and advances
- Nuclear reactors’ operation and control technologies and advances
- Nuclear enrichment technologies and advances
- Nuclear spent fuel disposal, reprocessing, storage
- Nuclear fuel
  - uranium ore and mining
  - conversion to UF<sup>6</sup>
  - enrichment
  - fuel fabrication assemblies
  - disposal of spent fuel



# MAKE or BUY

## Calculus for a Peaceful Nuclear Power

- Price (life cycle)
- Reliability of supply
- Other objectives

# MAKE or BUY WHAT

- Reactors
- Ore
- UF<sup>6</sup>
- LEU
- Fabricated fuel
- Spent fuel disposal, reprocessing, storage

## Assured Supply:

How can a peaceful nuclear power buyer assure supply?

- of fuel?
- of all the other technologies and know-how required for successful, long-term reliance on nuclear power?
  
- Contracts
- Cross-guarantees from multilateral consortium
- Penalties for breach of contract
- Insurance
- Joint ownership of fuel production
- International reserves as supply of last resort
- National reserves

# How

- How can the world community encourage peaceful nuclear power while preventing proliferation of nuclear weapons or the infrastructure for nuclear weapons?
- How can the world community assure that expanded reliance upon peaceful nuclear power—including reactors, fuel, “cradle to grave” manufacturing capacity—will not result in proliferation?

Can we construct a multilateral framework that is equitable and accessible to all users of nuclear energy acting in compliance with agreed nuclear nonproliferation rules; combining multiple, overlapping insurance arrangements; analogous to trends in other global markets?