Nuclear Power and Technology Transfer for the Arab Region

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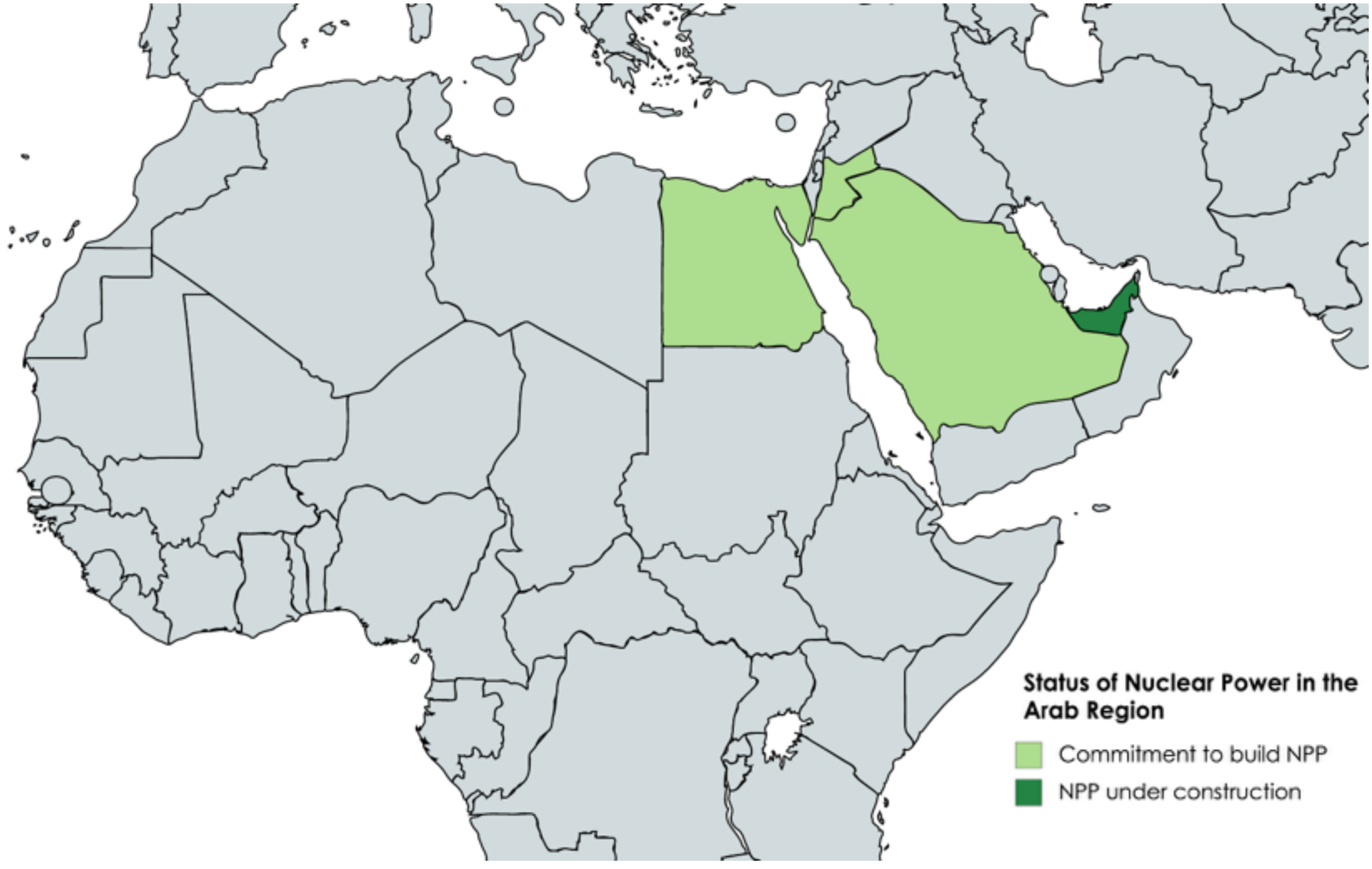
Regional capacity building workshop on "Water - Energy Nexus Operational Toolkit: Technology Transfer", on 30 – 31 October 2017, Amman, Jordan.

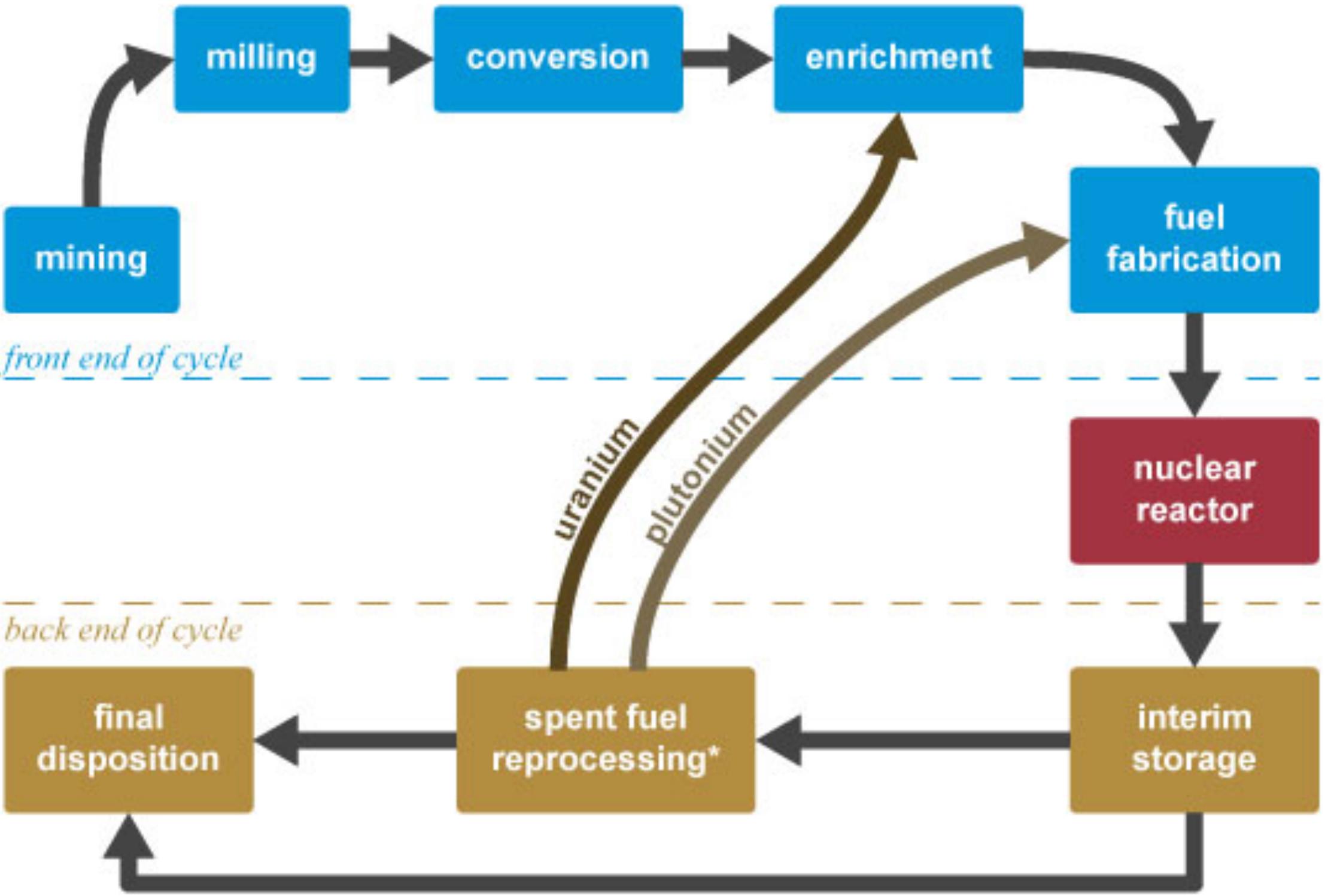
Status of Nuclear Power in the Arab Region



Why Are Countries in the Arab Region Interested in Nuclear Power?

- **Energy security / substitution**
- **Water desalination**
- **Technological advancement**
- **Other: Geopolitics/ Prestige / Institutional pressure**

Nuclear Fuel Cycle



Overview of Nuclear Power's Activity in the Arab Region

	Supplier	Technology	Front End	Reactor Manufacturing	Back End (Reprocessing)
Egypt	Rosatom (Russia)	VVER	No	No	No
Jordan	Rosatom (Russia) ?	VVER	YES (Planned Uranium Production)	No	No
KSA	KAERI (South Korea)	SMART (SMR)	Unknown	YES (Planned)	Unknown
UAE	KEPCO (South Korea)	APR—1400	No	No	No

Limitations of Nuclear Power's Technology Transfer in the Arab Region

- **Can be expensive**
- **Inadequate human / institutional capacity**
- **Inadequate industrial capacity**
- **Suppliers' policies**
- **Links to nuclear weapons (political headache)**

Effective Nuclear Power's Technology Transfer Also Depends on:

- **Size of the project / commercial interest**
- **Strength of bilateral relations between supplier and recipient**

Other Considerations

- **Technology Transfer vs. Localization**
- **How do you measure success? Is the goal technology transfer or knowledge transfer?**
- **Deployment of small modular reactors**
- **Tradeoff with content-based ECA financing**

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Nuclear Power and the Challenge of Innovation

- **Very mature and slow industry**
- **Stringent regulations / long time to license**
- **Negative learning**

Nuclear Power and Regional Cooperation

- **Multilateral nuclear fuel cycle facilities offer economic benefits**
- **And political ones: help reduce tension and build trust**
- **But, politically hard to achieve and take a long time to form**

Concluding Remarks

- **Technology transfer is desired but face serious limitations**
- **Most of the current activities are more of a "knowledge-transfer" type**
- **Regional efforts have the potential alleviate some of the limitations but remain challenging prospect**

The End

Transfer of Peaceful Nuclear Energy Technology (Legal Background)

NPT—Article IV: asserts that parties to the NPT have an "inalienable right" to develop, research, produce, and use nuclear energy for peaceful purposes.

NPT—Article IV: states, in part, that parties to the NPT "undertake to facilitate, and 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.