



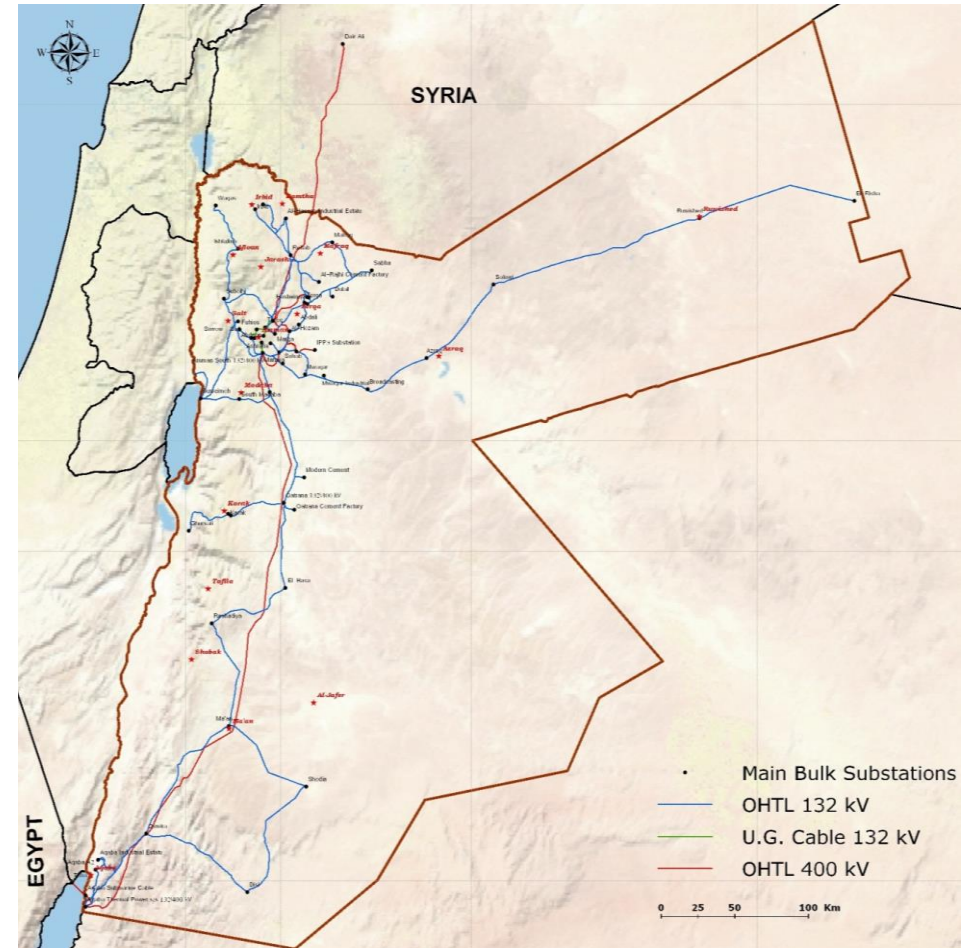
21st INPRO Dialogue Forum of SMRs for SDGs: The Deployment of SMRs in Jordan to Support Achieving SDGs

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JORDAN ATOMIC ENERGY COMMISSION

Country Profile

- Area: 89,342 km²
- Population: + 10.2 million
- Electrification rate: 99.9%
- The economy is services-driven
- The country lacks natural resources (especially oil and gas)
- Only one seaport



Background



Human Resources Development

- JRTR
- JSA
- SESAME



Nuclear Power Plant Project

- Electricity Generation
- Water Desalination



Uranium Exploration

Rationale for Jordan's NPP Project

Energy

- Competitive Electricity Source
- Stability of Electricity Price
- Reduce the Imported Fuel Bill
- Fuel Diversity and Security of Supply

Social

- National higher education system and workforce skills development
- Jobs Creation (direct & indirect)

Industry

- National Industry Development
- Improve the Quality Assurance Systems

Water

- Water Desalination

Environment

- Reduce CO₂ Emissions

NPP Project Background (2008~2017)

- Large NPPs were initially considered, and various technical studies were performed.
 - **Siting studies:** Country Wide Survey (CWS) and site selection studies.
 - Full site characterization studies are still not performed.
 - Meteorological data collection at the selected site.
 - **Water cooling studies**
 - **Electricity grid studies**
 - **National infrastructure surveys and studies**
 - Localization/ national industry
 - Transportation
- It was concluded that large NPPs do not match Jordan's situation:
 - **Financial burden and capital investment**
 - **Water cooling requirements**
 - **Grid compatibility**

NPP Project Background (2017-Present)

Jordan's requirements for NPPs were clearly defined:

- Low capital costs and initial investment
- Low cooling water requirements
- Compatible with the small electricity grid
- Deployable post-2030
 - Increase power demand from water desalination
 - Decommissioning of several conventional and renewable power stations
 - Expiration of natural gas import agreements
- Scalable to match the gradual increase in electricity demand
- Transportable to inland sites
 - Heaviest component weight limitation due to the seaport capacity and exiting road infrastructure



NPP Project Timeline

Pre 2017

- Site suitability report
- ToR for EIA
- Infrastructure studies (grid, electricity market, localization,...)
- Project structure

SMRs considered as new direction

BIS document prepared

Discussions with potential vendors



Initial SMR technology assessment for various vendors and feasibility studies

Water desalination studies for Jordan

Post 2023

- BIS release, technology assessment and selection
- Full site characterization, EIA, site permit



Nuclear Fuel Cycle

**Nuclear Fuel Front-end
Policy and Strategy**

**Nuclear SNF and
RWM Strategy**

Highlights

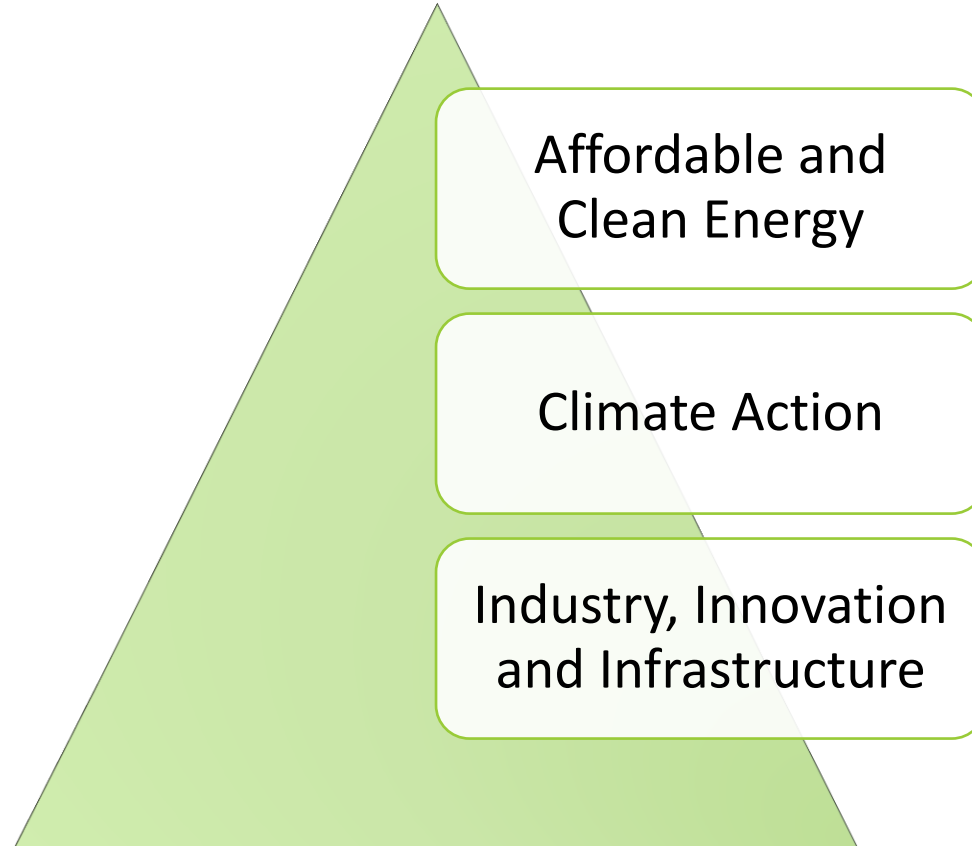
Front-end

- Priority for Jordan's natural resources of uranium
- Ensuring the security of the supply
- Ensuring diversified supply
- Ensuring high-quality and reliable fuel
- Development of national capabilities
- Ensure cost-effective supply

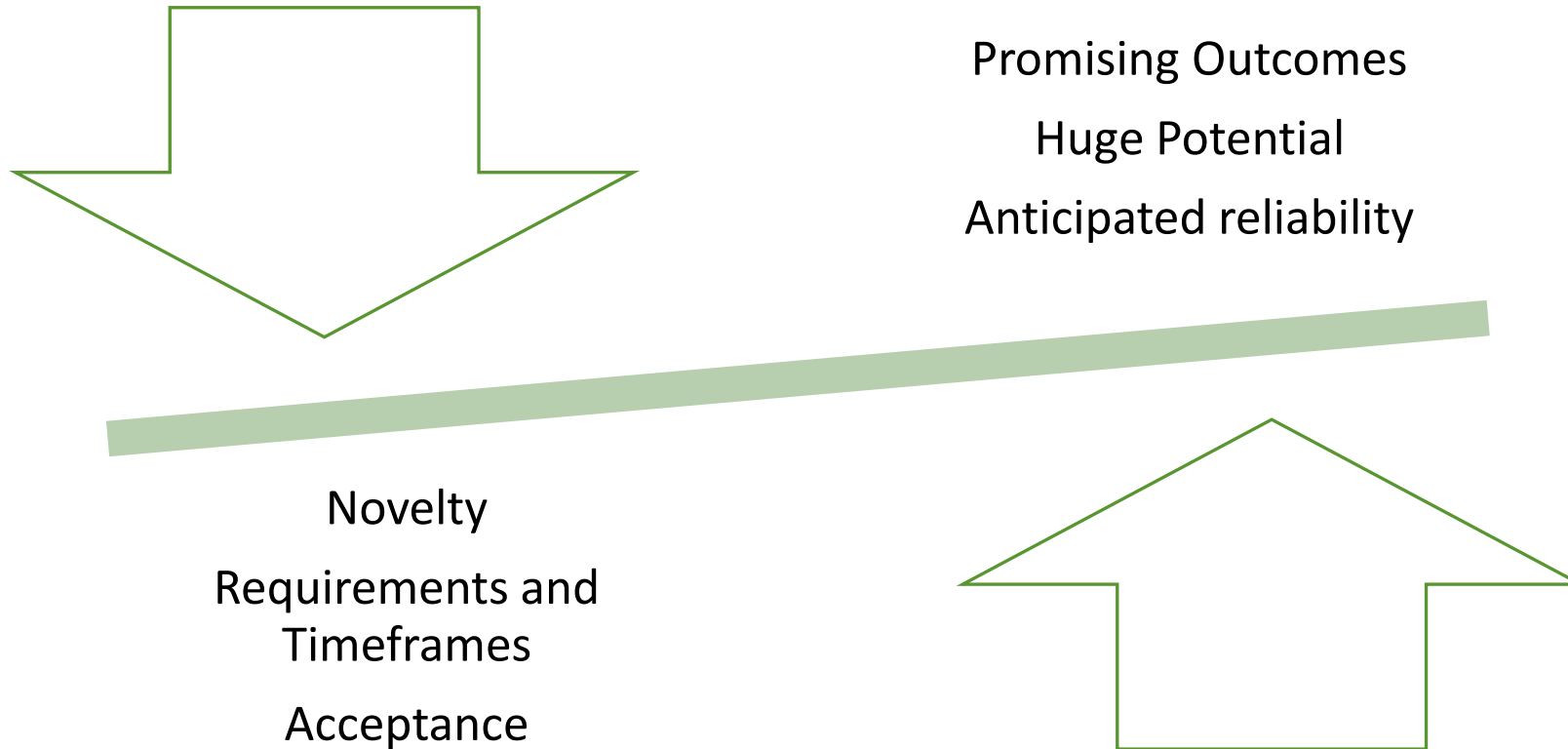
Back-end

- Built to use different paths

SDGs and SMRs in Jordan



SDGs and SMRs Challenges



JAEC Involvement in INPRO

- JAEC has joined INPRO since 2012 and our teams continuously attend different events, including the Steering Committee meetings.
- JAEC highly values the importance of INPRO and its collaborative projects.
- We are participating in the ASENES SMR Project.
- A dedicated team to work on INPRO projects will be formed in the very near future.

Summary and Conclusions

- A relatively small country with great potential, an attractive environment, and huge plans to achieve sustainability in a range of areas.
- Early focus on the latest technologies and their potential to contribute to the strategic visions.
- Elevated collaboration on all aspects with a wide range of relevant entities.
- The role of SMRs to be a part of future plans is closely investigated, especially on crucial issues to the country.
- Despite the challenges that focusing on new technologies might bring, Jordan is committed to effectively implementing its plans in collaboration with the international community and global organizations in order to achieve the best results.

Thanks!

QUESTIONS?

