



Navigating Saudi Arabia's Nuclear Ambitions: A Multifaceted Analysis of Regional and Global Perspectives

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TURKMENISTAN

AFGHANISTAN

PAKISTAN

IRAQ

SAUDI ARABIA

ARABIA

EGYPT

SUDAN

INDIA

MIDDLE EAST

PHYSICAL

SCALE: 1:10,000,000

0 100 200 300 400 500 Kilometers

0 100 200 300 400 500 Miles

Legend:
 - Major cities
 - Other cities
 - International boundaries
 - National boundaries
 - Topographic contours
 - Elevation in meters
 - Elevation in feet



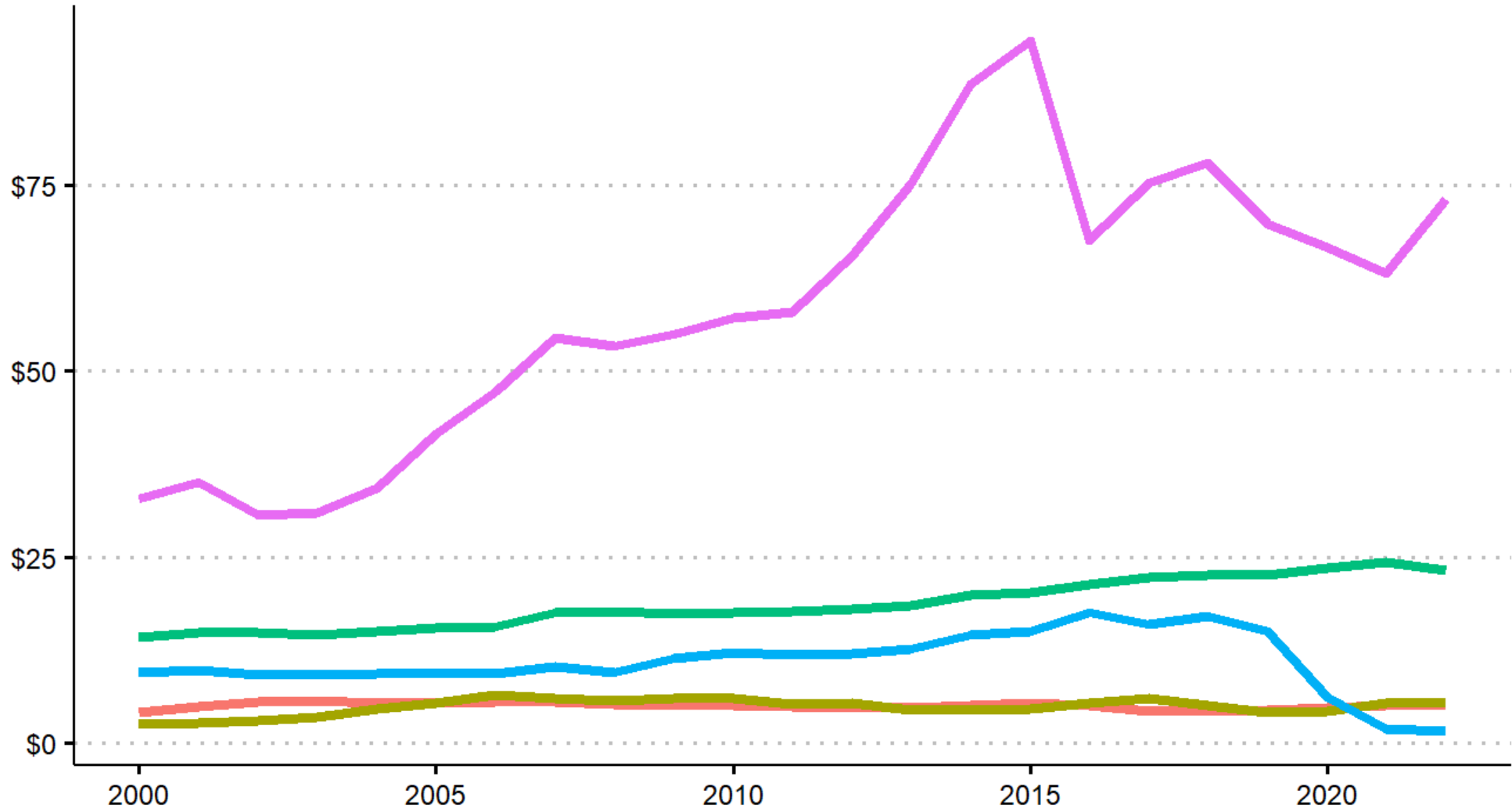
GCC 2006

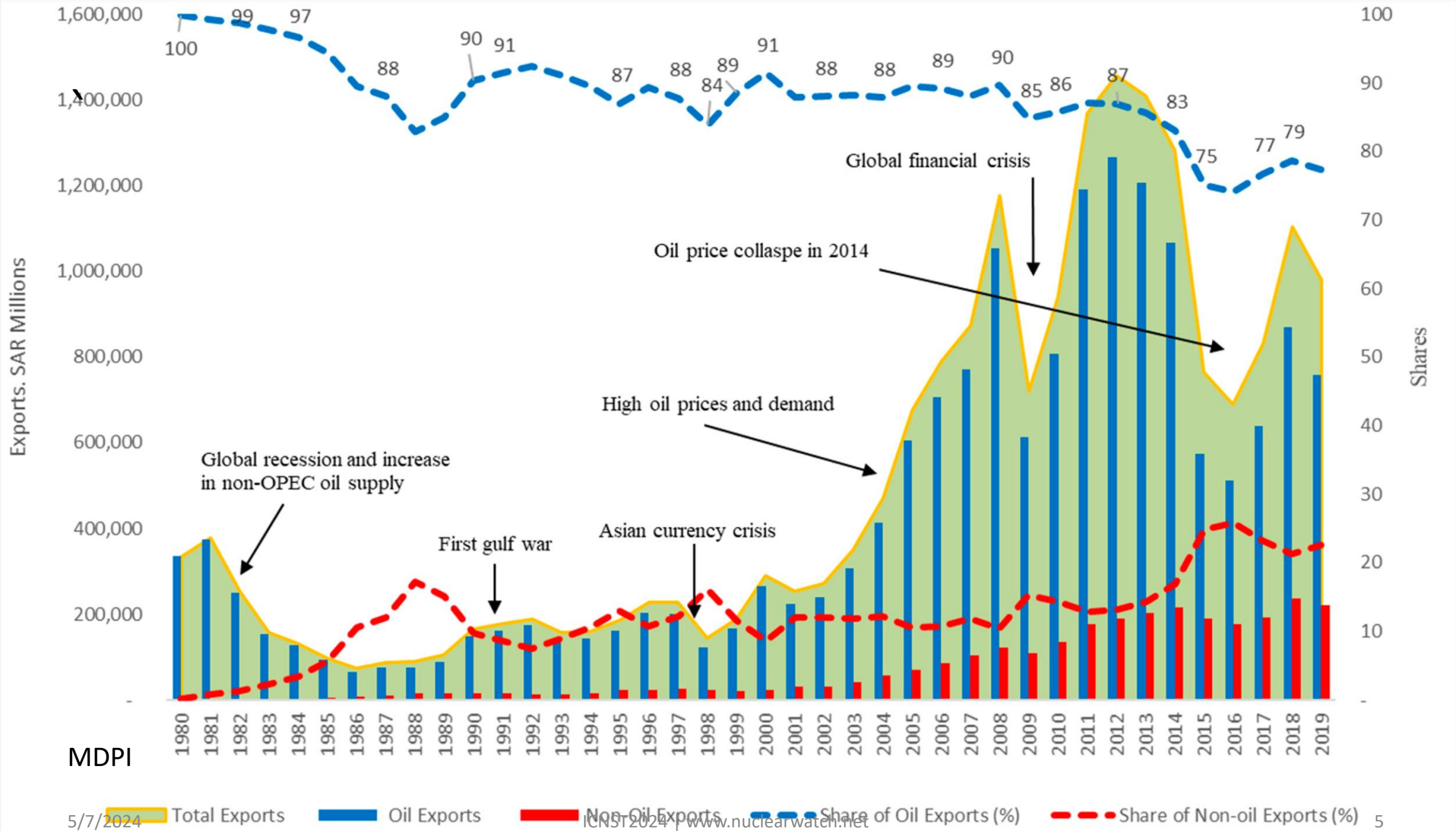
Start a

Joint study on use of nuclear technology for peaceful purposes according to intl. criteria.

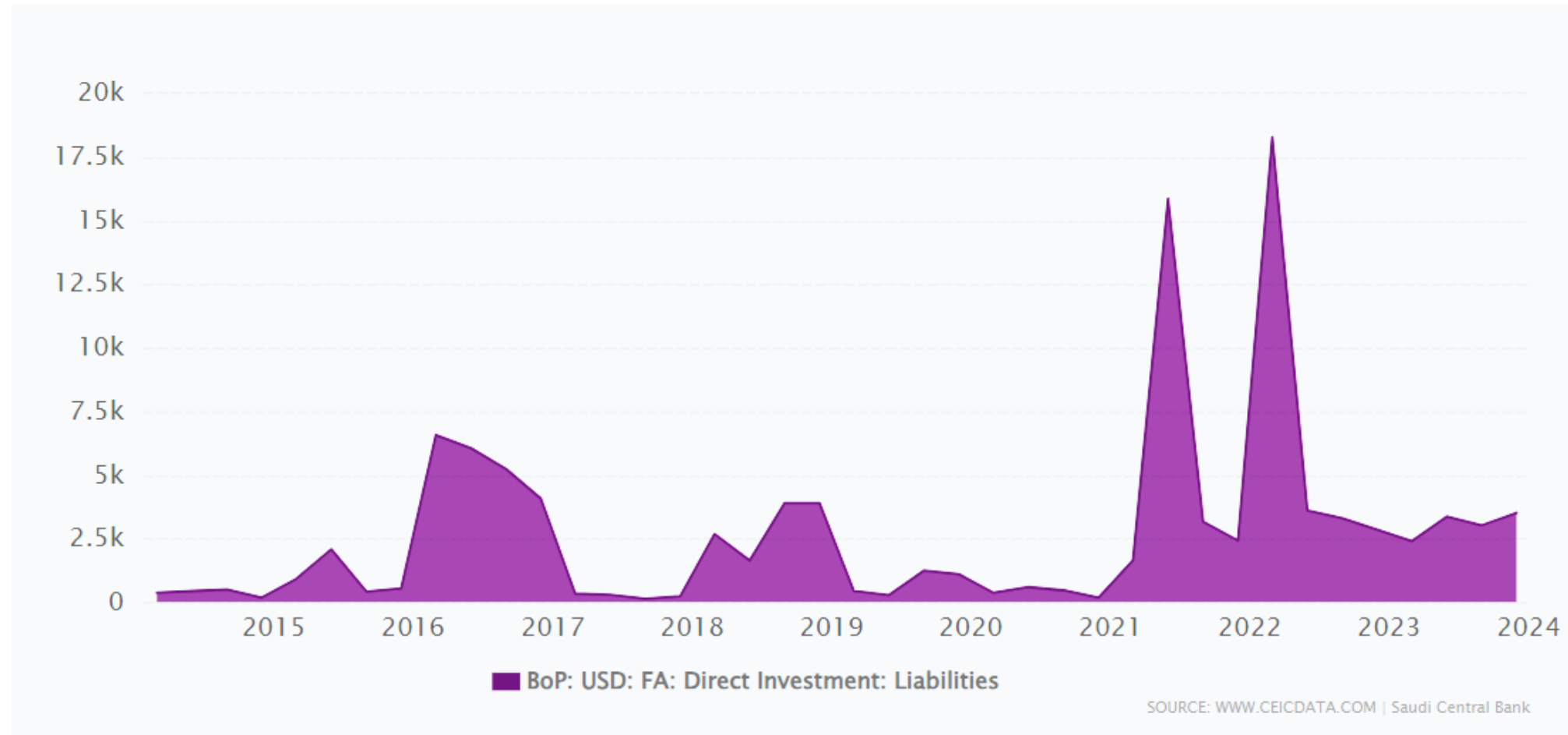
middle east military expenditure in last 20 years

US bilions dollars





Saudi Arabia's Foreign Direct Investment (M\$)





MBS ambitions

5/7/2024

ICNST2024 | www.nuclearwatch.net

- NEOM's Technological and Digital Aspirations
- The Red Sea Project
- Qiddiya Entertainment City
- Vision 2030
- Saudi Green Initiative & Middle East Green Initiative
- Amaala
- King Salman Park, Green Riyadh, Sports Boulevard, Riyadh Art
- The Line (part of NEOM)
- Investment in Silicon Valley and Tech Firms
- National Industrial Development and Logistics Program (NIDL)
- Saudi Arabian Military Industries (SAMI)
- Collaboration with AI and Tech Giants
- Saudi Nuclear Energy Project

Saudi Arabia's Nuclear Program

2006-2007

The Persian Gulf Cooperation Council (GCC) announced a study on the peaceful use of nuclear energy. The GCC agreed with the IAEA to cooperate on a feasibility study for a regional nuclear power and desalination program.

2009

Saudi Arabia considered a nuclear power program on its own.

2010

The King Abdullah City for Atomic and Renewable Energy (KA-CARE) was set up in Riyadh to advance the nuclear

2011

KA-CARE appointed WorleyParsons to conduct site surveys and regional analysis for the nuclear power project.

2012

The government adopted a proposal to add 23.9 GWe of renewable capacity by 2020 and 54 GWe by 2032, later pushed back to 2040.

2013

KA-CARE projected 17 GWe of nuclear capacity by 2032, with nuclear construction starting in 2016. GE Hitachi Nuclear Energy and Toshiba/Westinghouse signed contracts with Exelon Nuclear Partners to pursue reactor construction deals with KA-CARE (King Abdullah City for Atomic and Renewable Energy).

2014

The Saudi Arabian Atomic Regulatory Authority (SAARA) was established. KA-CARE signed an agreement with the Finnish Radiation and Nuclear Safety Authority (STUK) for assistance in recruiting and training personnel and establishing safety standards.

2015

Saudi government revised its target for 17 GWe of nuclear capacity to 2040. KAERI signed an agreement with KA-CARE to assess the potential for building at least two South Korean SMART reactors in Saudi Arabia. INVAP from Argentina and Saudi's Taqnia set up a joint venture company, Invania, to develop nuclear technology for Saudi Arabia's nuclear power program.

2016

The government launched the Vision 2030 initiative for 9.5 GW of renewable energy by 2023. KA-CARE signed an agreement with China Nuclear Engineering Corporation (CNEC) to build a high-temperature reactor (HTR) in the country. KA-CARE signed an agreement with South Korea's Nuclear Safety and Security Commission (NSSC) to promote cooperation in regulating nuclear safety, safeguards, and physical protection.

2017

The Crown Prince announced the \$500 billion Neom project, a city to be fully powered by renewable energy. KA-CARE solicited proposals for 2.9 GWe nuclear capacity from South Korea, China, Russia, and Japan. A joint working group commenced a formal feasibility study for the project. CNEC and Saudi Technology Development Corporation signed an agreement for a feasibility study on using high temperature reactors for seawater desalination. The cabinet approved the establishment of the Saudi National Atomic Energy Project (SNAEP) and new regulations for KA-CARE. China National Nuclear Corporation (CNNC) and the Saudi Geological Survey signed agreements on cooperation on the exploration of uranium.

2018

Crown Prince Mohammed bin Salman signed an MoU with Japan's SoftBank for 150-200 GW of solar capacity by 2030, but the project was aborted six months later. KA-CARE awarded a contract to Worley Parsons for consultancy services for the Saudi National Atomic Energy Project.

2019

The IAEA delivered the final report of its integrated nuclear infrastructure review (INIR) mission in Saudi Arabia, noting significant progress. KA-CARE launched a program with the Jordan Atomic Energy Commission (JAEC) and the Jordan Uranium Mining Company (JUMCO) to develop Saudi expertise in uranium exploration and mining.

2021

The country committed to becoming carbon neutral and aims to produce 50% of its electricity from renewables by 2030, with the rest supplied by natural gas. Saudi Arabia's Nuclear and Radiological Regulatory Commission (NRRRC) and the UAE's Federal Authority for Nuclear Regulation (FANR) agreed to cooperate in nuclear and radiation regulatory matters.

2022

Neom launched subsidiary company Enowa for developing its energy and water systems. Saudi Arabia confirmed the establishment of the Nuclear Holding Company, which will act as the country's nuclear developer

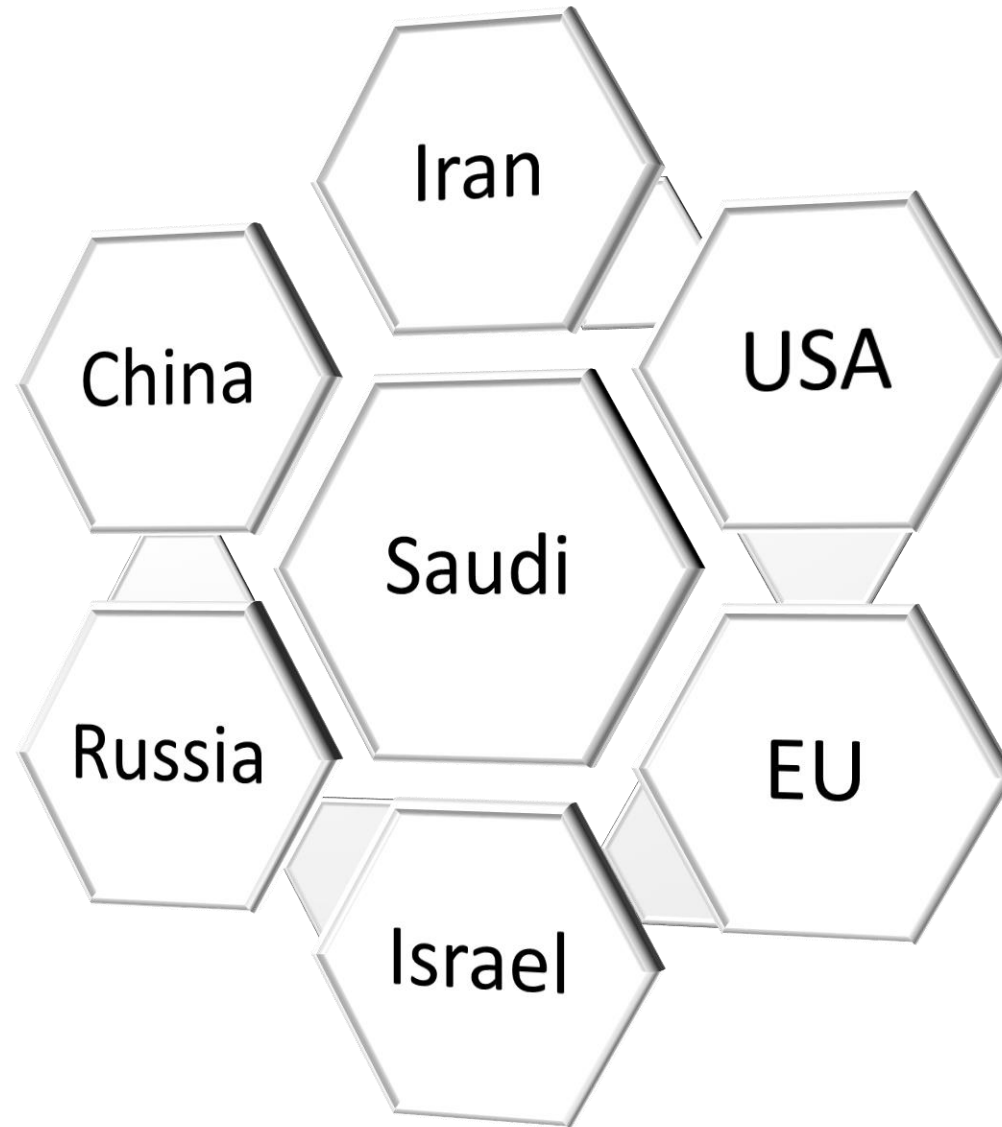
2023

The energy minister reiterated the Kingdom's intention to build a nuclear power plant and plans to switch to a comprehensive safeguards agreement with the IAEA. Energy minister Prince Abdulaziz Bin Salman announced plans to utilize national uranium resources for the whole nuclear fuel cycle, including the production of yellowcake, low enriched uranium, and the manufacturing of nuclear fuel for national use and for export.

King Abdullah City for Atomic and Renewable Energy (KA-CARE)

KA-CARE

- 1. Nuclear Energy Development:** To promote the use of nuclear energy in Saudi Arabia, initially focusing on nuclear power plants for electricity generation and desalination. The kingdom has expressed plans to build several (16) nuclear reactors over the next two decades.
- 2. Renewable Energy Projects:** KA-CARE is also responsible for the development and implementation of renewable energy projects, particularly solar and wind energy, as part of Saudi Arabia's goal to generate a significant portion of its electricity from renewable sources by 2030.
- 3. Research and Innovation:** The city is intended to be a hub for innovation and research in nuclear, renewable, and alternative energy technologies.





China: balancer or a real player?

Rumors: hidden cooperation between China and Saudi

China's aims:

- Developing parts of the world,
- Competing with the US,
- Presence in the MENA

The original residential complex for the 544 Missile Base is located 10 km to the northwest. It has recently been expanded.

PROBABLE SOLID PROPELLANT MISSILE PLANT AL DAWADMI, SAUDI ARABIA (24.220°N, 44.706°E)

Main solid propellant production area and engine test stand.

Residential Complex

United States of America ATOMIC ENERGY ACT OF 1954

SEC. 123. COOPERATION WITH OTHER NATIONS.—

No cooperation with any nation, group of nations or regional defense organization pursuant to section 53, 54 a., 57, 64, 82, 91, 103, 104, or 144 shall be undertaken until... (5 pages)



Gold Standard: NO nuclear enrichment on its soil
UAE cooperation agreement



DILEMMA

U.S.

A. Pros:

1. Normalization the relations with Israel (Abraham Accord)
2. Balancing Iran
3. Strategic alliance with Saudi
4. Separating Saudi from China
5. Export of technology and labor

B. Antis:

1. Breaking the American 1,2,3 standard, making an exception
2. Nuclear race in the region
3. Balancing Israel nuke capability
4. Another potential nuke arsenal in the region



Iran

A. Pros:

1. Legitimate right of peaceful nuclear program,
2. Leverage against Israel,
3. China presence and US decline in the region or
4. Breaking of US gold standard (1,2,3)

B. Antis:

1. Regional balance of power and competition,
2. Nuclear capability as a relative leverage,
3. Normalization of Abraham Accord,
4. Potential nuclear ambiguity and threat,

KSA method of de-securitizing its nuclear project

- Old declaration of the project,
- Joining NPT without significant monitoring,
- Long time to agree on the safeguard,
- Explaining its ambitions: securitizing Iran's nuclear program,
- Strengthening partnership with all main actors,
- Mutual investments,
- US-China positive balance,
- “De-petrolization” its nuclear project argument,

Recommendations for Iran-Saudi

Nuclear Safety & Security Cooperation

Nuclear Technological Cooperation

Nuclear Countries Club in the region

Recommended researches

- UAE nuclear program,
- Turkey future nuclear competition,
- IAEA approach towards Saudi Arabia's nuclear program with all the delays in safeguard agreements conclusion,
- Probable Secret Cases with China

Thanks

