

# NUCLEAR GULF

## PAST, PRESENT AND FUTURE OF NUCLEAR PROGRAMMES AROUND THE ARAB GULF



Interest in nuclear technology around the Gulf has grown since the mid-2000s. Motivated largely by energy-related, development and economic factors, several countries focus on developing peacefully-oriented nuclear energy programmes to meet domestic needs. Since the 1970s, only a few countries decided to secretly pursue nuclear weapons for politico-strategic goals, which would tilt the regional balance of power, and prompted preventive attacks on their nuclear facilities and personnel. Currently, Iran has the only known active military nuclear programme.

### LEGEND



peaceful nuclear energy programme



military purpose nuclear programme

### SYRIA (nuclear programme start: 1970s)

Once planned to build a nuclear power plant (NPP) but plans were disrupted by the civil war in 2011.

Syria's clandestine nuclear weapons programme (NWP) was uncovered by Israel's 2007 airstrike on an undeclared Al-Kibar nuclear facility (Deir al-Zour). There is currently no evidence of a NWP but the Syrian government and the civil war have been blocking the IAEA's access to some suspicious sites.

### IRAQ (start: 1960s)

In June 2021, Baghdad announced a plan to build 8 reactors with a total capacity of 11 GWe.

Saddam Hussein secretly pursued nuclear weapons since the 1970s. An Israeli airstrike destroyed Iraq's unfinished nuclear reactor Osirak in 1981. During the Iran-Iraq war (1980-1988), Iraq routinely struck Iran's Bushehr NPP. The 1990/1 Gulf War and UN inspections ended Iraq's military nuclear ambitions. Suspicions of restored WMD programmes served as a pretext for the 2003 US-led invasion. No evidence of a renewed NWP was found.

### IRAN (start: 1950s)

Planned nuclear reactors with 20 GW total generation capacity (the first one at Bushehr NPP launched in 2011)

Iran has been sanctioned since 2006 for secretly developing a NWP and refusing to halt its uranium enrichment activities and uses its NWP as a bargaining chip. The 2015 Iran Nuclear Deal was signed to stall those efforts in exchange for sanctions relief. The IAEA estimated that as of 02/2022, Iran increased its stockpile of uranium enriched up to 20% and up to 60% (for which there is no peaceful need) to 182.1kg and 33.2kg, respectively.

### JORDAN (start: 2007)

Jordan scrapped plans for its first NPP with two 1 GWe reactors for financial reasons and refocused on small modular reactors. It has significant uranium resources, hosts the SESAME laboratory and in 2021 opened a yellowcake processing plant.

### SAUDI ARABIA (start: 2007)

Aims to build two large nuclear power plants and some small reactors for desalination with 17 GWe total capacity by 2040. Its first research reactor is under construction. In January 2022, Riyadh announced plans to mine and use its uranium resources to develop a nuclear power programme and consider exporting yellowcake abroad.

There is currently no evidence of a NWP but Riyadh might seek to acquire a nuclear weapon for deterrence should Iran develop one.

### YEMEN

Described nuclear power as a necessity in 2010 and considered a NPP or small modular reactors but stressed that it would not seek the nuclear fuel cycle. Plans disrupted by the ongoing civil war.

### UNITED ARAB EMIRATES (2007)

The UAE built the first NPP in the Arabian Peninsula, Barakah NPP, with 4 reactors and a total capacity of 5.6 GWe (the first reactor became operational in 2020), to generate electricity for domestic use and export to other Gulf countries via the regional power grid. It is a staunch proponent of peaceful nuclear energy use, it has been cooperating with the IAEA and voluntarily renounced enrichment and reprocessing capabilities.

### GULF COOPERATION COUNCIL (GCC)

The six **GCC** countries expressed interest in a **joint peaceful nuclear power programme** at a GCC summit in 2006 and partnered with the IAEA.

**Bahrain, Kuwait and Qatar** considered building nuclear facilities but gradually abandoned the plans mainly for economic and public safety reasons. Some opted to invest in nuclear technology, e.g. Oman in a uranium mine in Spain (2017) and Qatar in Rolls-Royce's small nuclear reactors programme (2021).