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International Atomic Energy Agency

Atoms for Peace and Development

ABDAN-WNA Mini Course on SMR and Microreactors at Nuclear Summit 2022,
26 – 28 April 2022 (Virtual Event)

SMR Technologies: Considerations of embarking and expanding countries

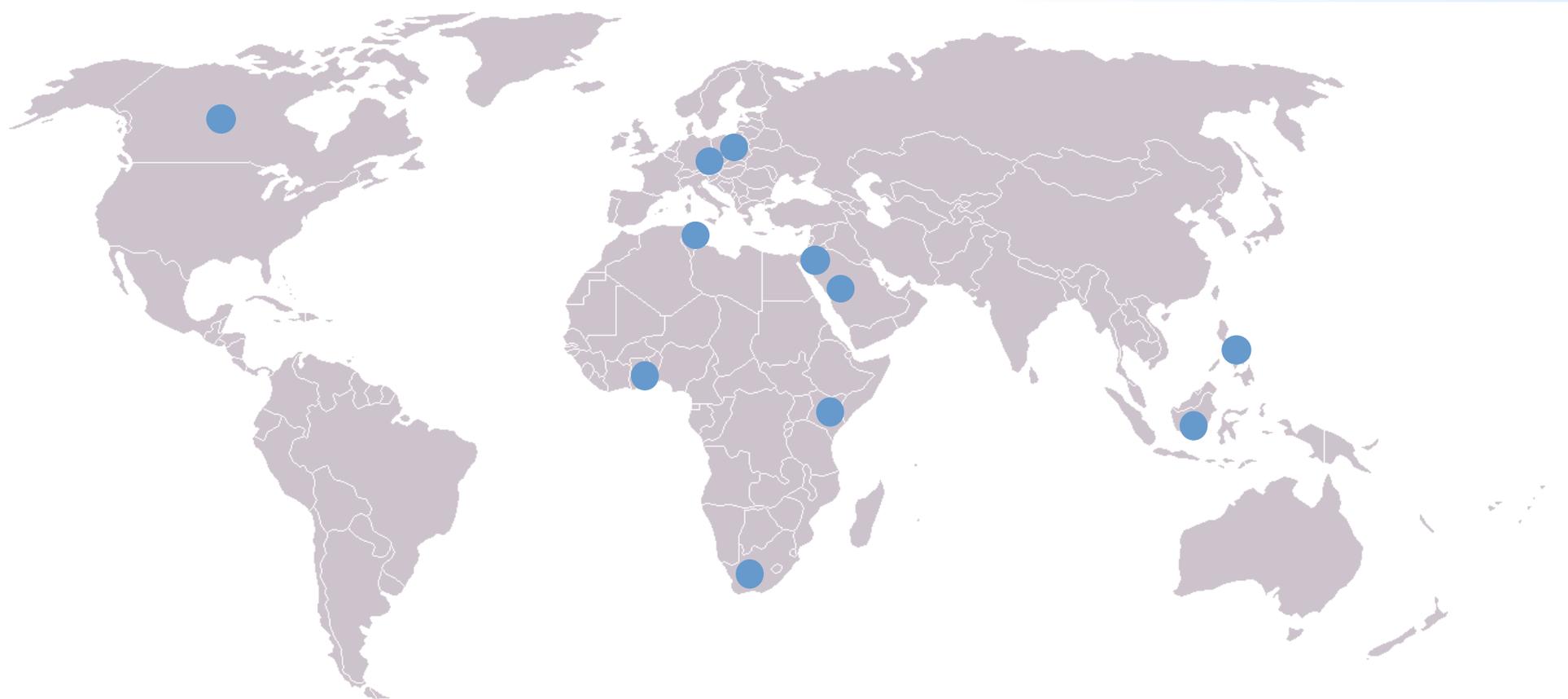
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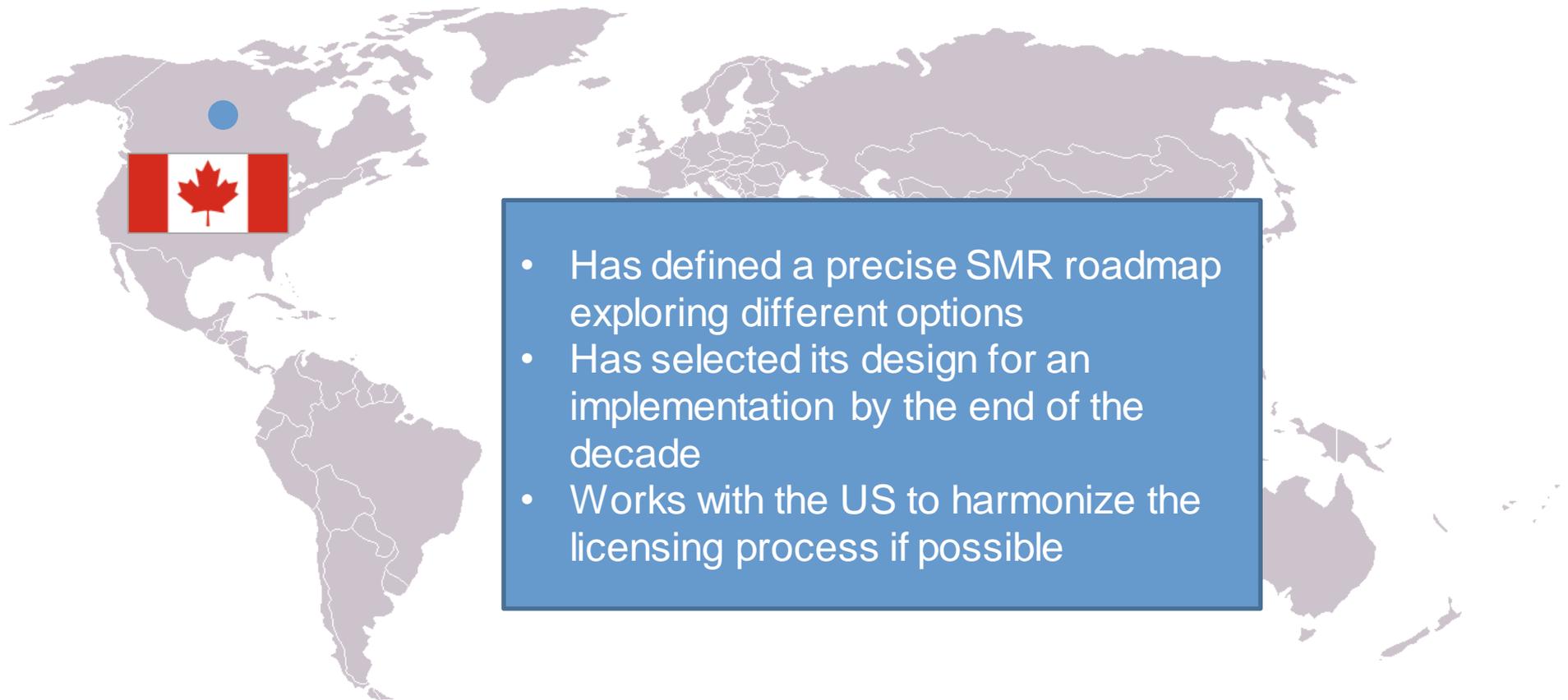
Objectives of this presentation

- The main objectives of this presentation is to:
 - Visualize the different countries showing an interest to host an SMR
 - Understand their rationales
 - Make the link with the technologies in development (to be presented later on)

Embarking/expanding countries (excluding vendor countries)

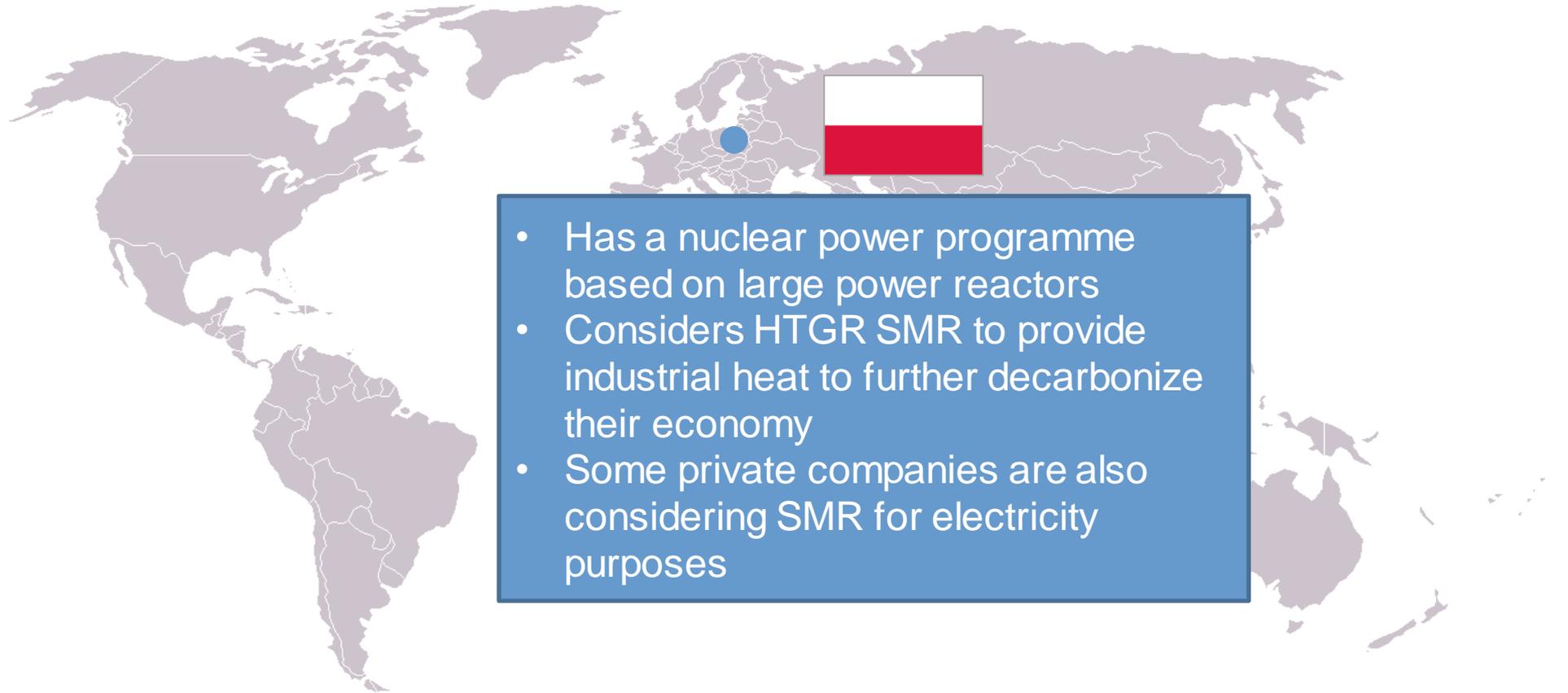


Canada: making SMR technology happen



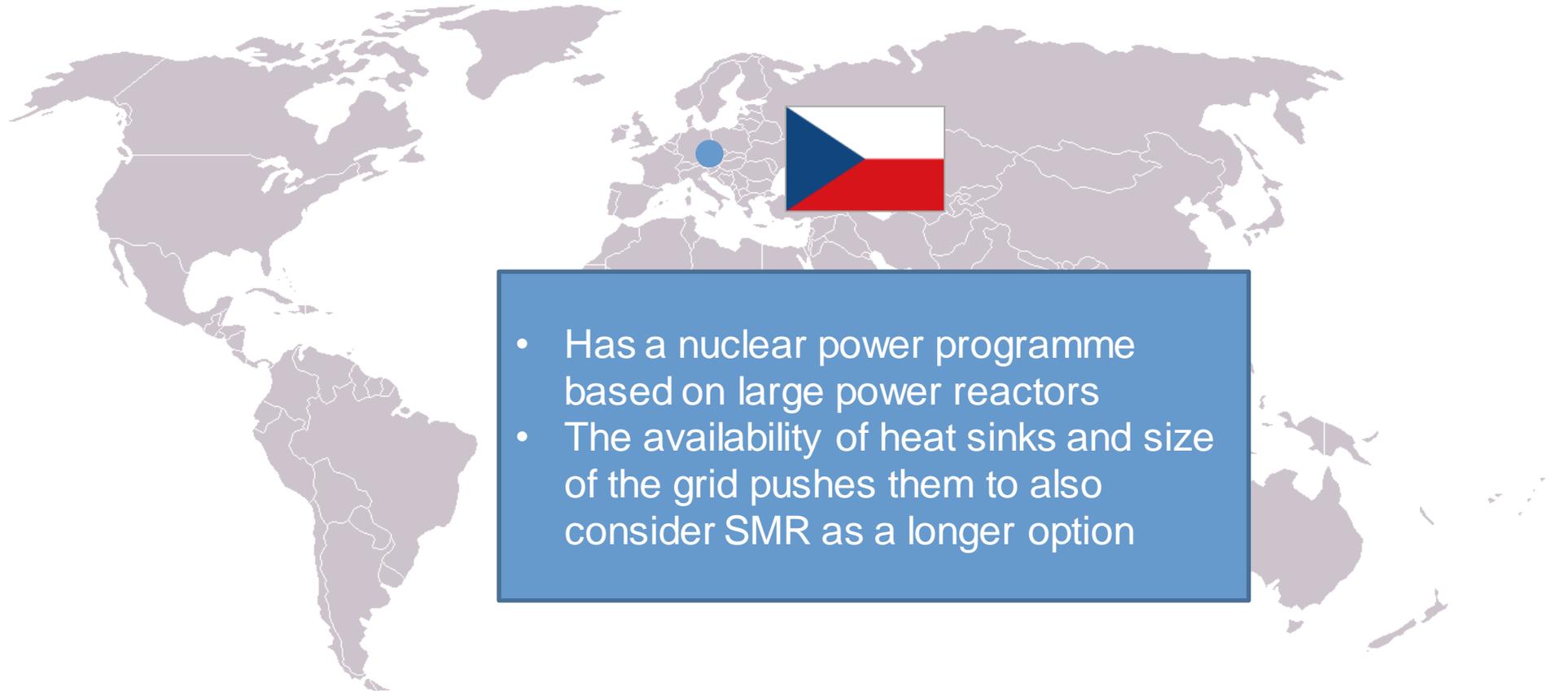
- Has defined a precise SMR roadmap exploring different options
- Has selected its design for an implementation by the end of the decade
- Works with the US to harmonize the licensing process if possible

Poland: aims at industrial heat



- Has a nuclear power programme based on large power reactors
- Considers HTGR SMR to provide industrial heat to further decarbonize their economy
- Some private companies are also considering SMR for electricity purposes

Czech republic: leaving options open



- Has a nuclear power programme based on large power reactors
- The availability of heat sinks and size of the grid pushes them to also consider SMR as a longer option

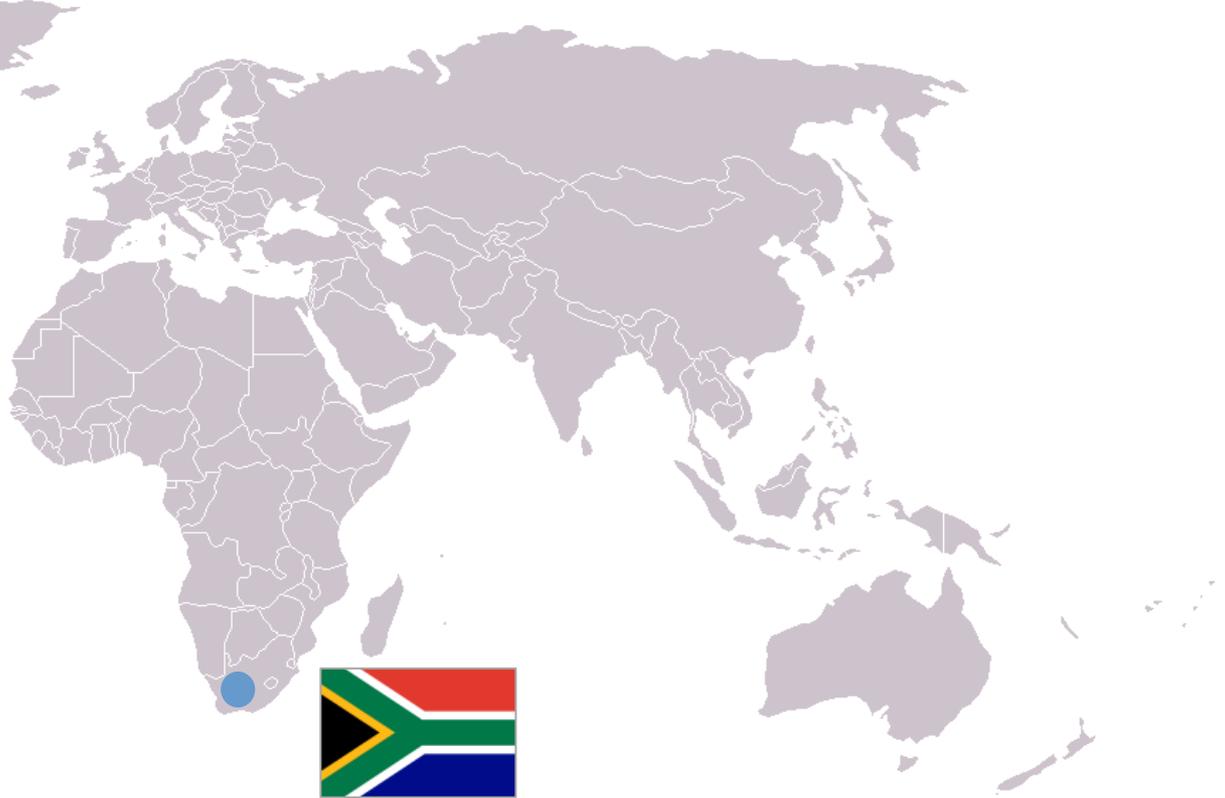
Tunisia/Ghana/Kenya/Jordan: Size of the grid and of the investment are an issue

- Considering 1000MWe reactors but grid stability an issue
- Heat sink also an issue in Jordan. Reduced EPZ to increase public acceptability
- Potentially interested by hybrid energy systems
- SMR would also be easier to finance with a lower upfront capital



South Africa: easier financing and desalination

- RSA conducted a RFI in 2020, on large reactors and SMRs
- Wants to rely on their human capital
- SMRs potentially easier to finance with a lower upfront capital
- Desalination also a considered option



Indonesia and Philippines: island issues

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- High dependency on coal
 - Many small islands, not interconnected
 - Good nuclear knowledge



Saudi Arabia: Building human capacity

- Desire to develop and own IP (cooperation with South Korea and China)
- Need for industrial steam and desalination (WCR and HTR considered)
- Part of a larger programme which includes large power reactors



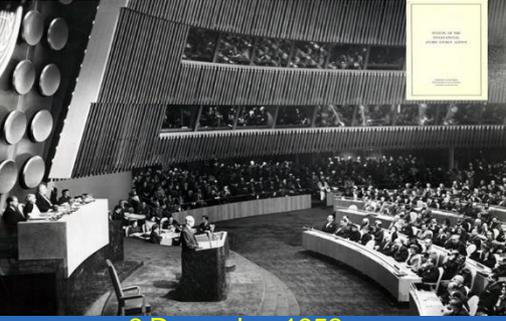
Conclusions

- Not all countries share the same concerns.
- There are more than 70 designs in development, with different maturity, and fulfilling different purposes.
- Defining the country's national position will lead to different technological options.
- There will still be a need to develop a specific programme roadmap (see tomorrow's presentation).



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8 December 1953



1 to 23 October 1957



11 December 1957



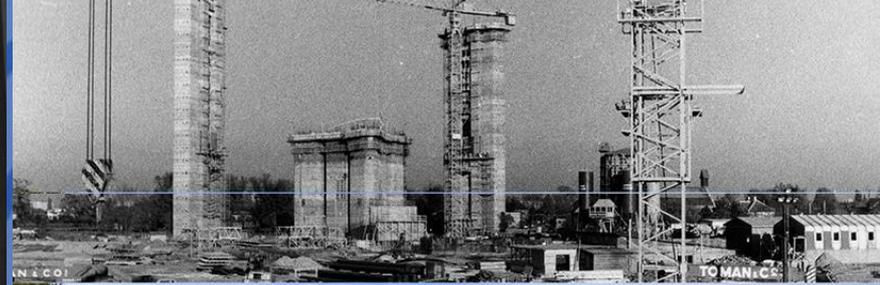
1959



10 December 2005



1958 to 1979



23 August 1979

Thank you for your attention!

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