

Legal considerations pertaining to nuclear energy as an option for Australia

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1.

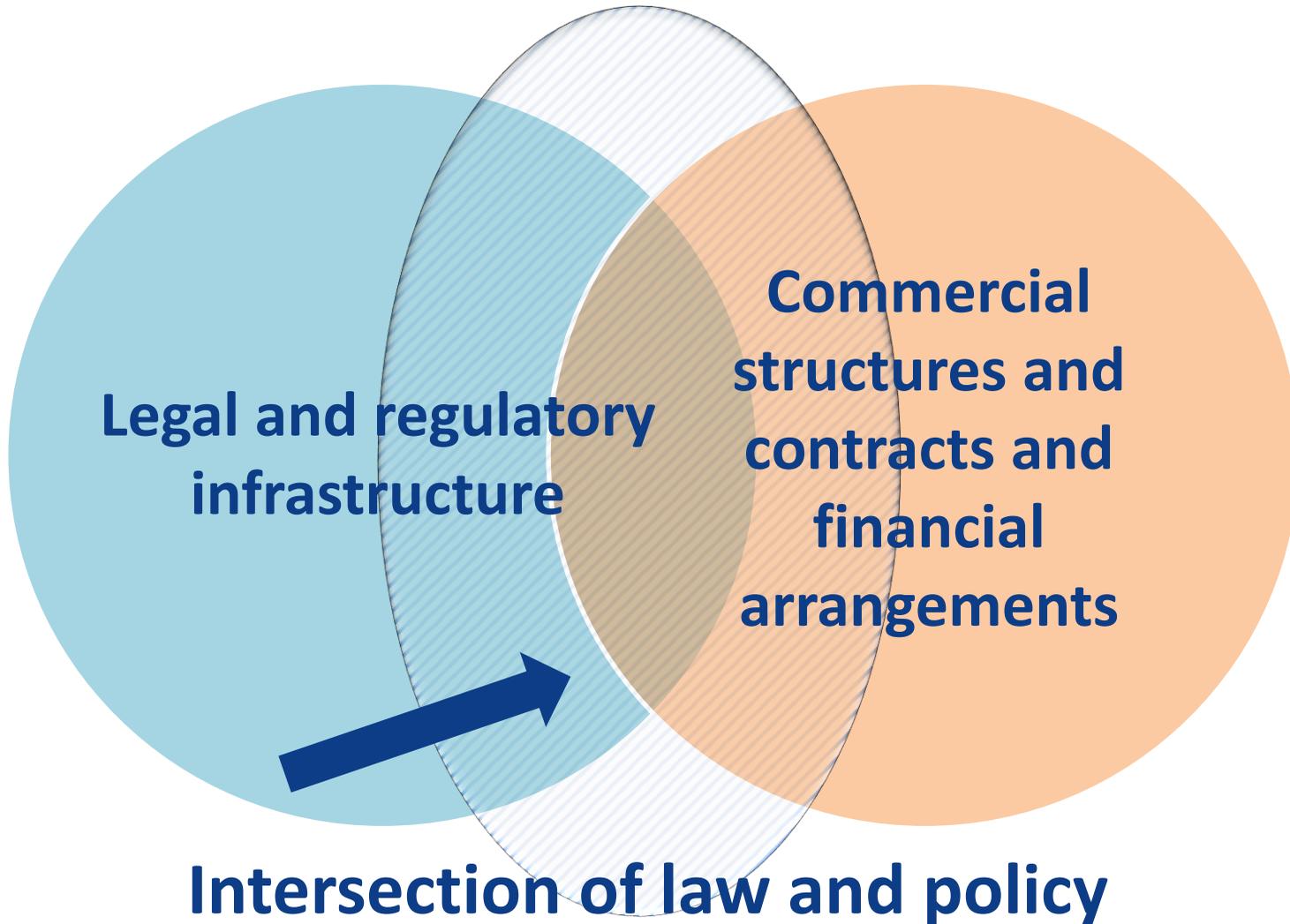
Introduction

What if...?

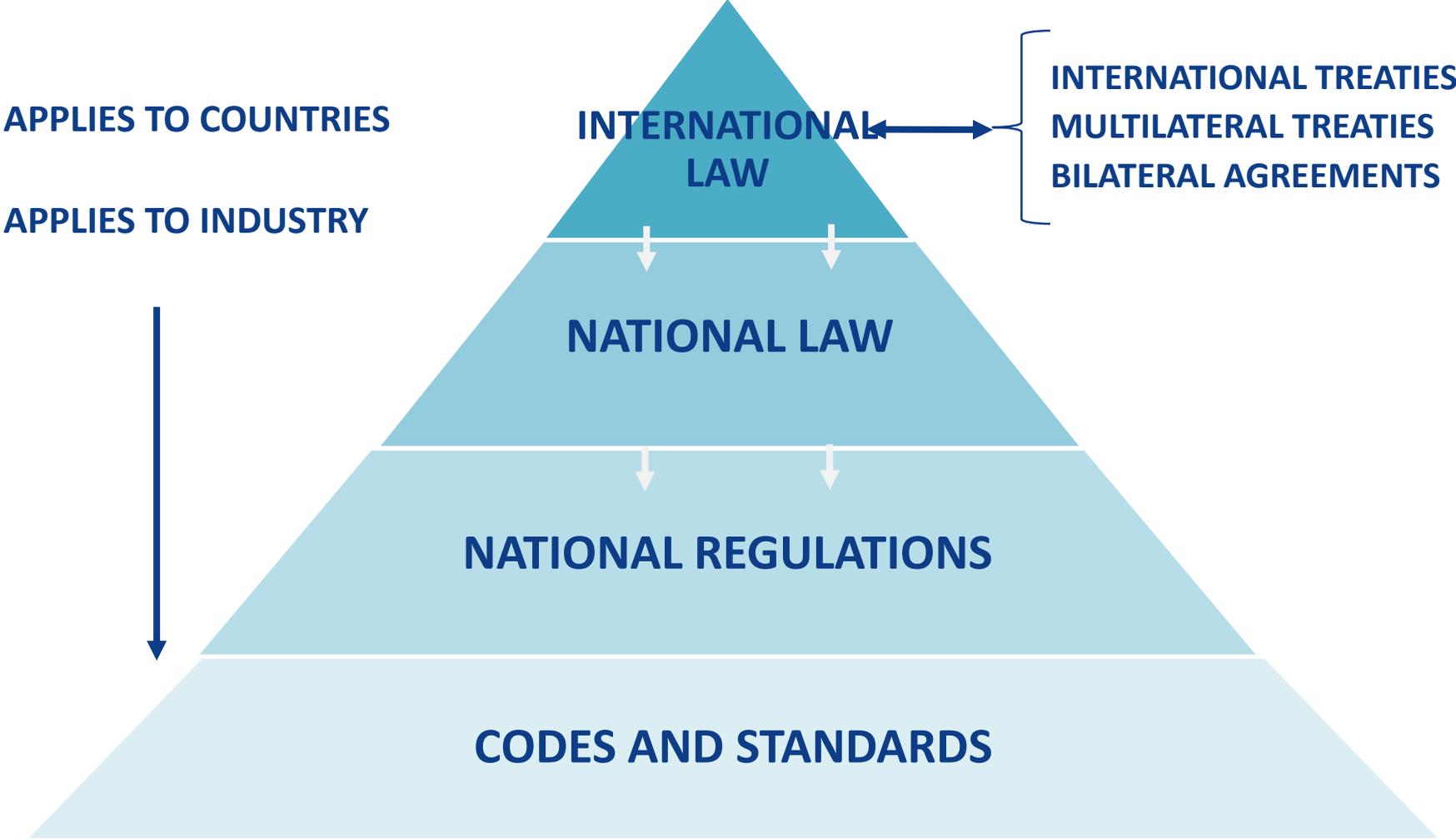
2.

The legal framework for nuclear
energy

Two primary areas



Legal and regulatory infrastructure



International nuclear law

Area	Primary treaties	AUS status
Nuclear non-proliferation	<ul style="list-style-type: none"> Treaty on the Non-Proliferation of Nuclear Weapons IAEA Safeguards (and Additional Protocol) Comprehensive Nuclear Test Ban Treaty 	<ul style="list-style-type: none"> ✓ ✓ ✓
Nuclear security	<ul style="list-style-type: none"> Convention on the Physical Protection of Nuclear Material (and Amendment) International Convention for the Suppression of Acts of Nuclear Terrorism 	<ul style="list-style-type: none"> ✓ ✓
Emergency preparedness and response	<ul style="list-style-type: none"> Convention on the Early Notification of a Nuclear Accident Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency 	<ul style="list-style-type: none"> ✓ ✓
Nuclear safety	<ul style="list-style-type: none"> Convention on Nuclear Safety Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management 	<ul style="list-style-type: none"> ✓ ✓
Third party liability for nuclear damage	<ul style="list-style-type: none"> Vienna Convention Paris Convention Joint Convention Convention on Supplementary Compensation 	(signature)

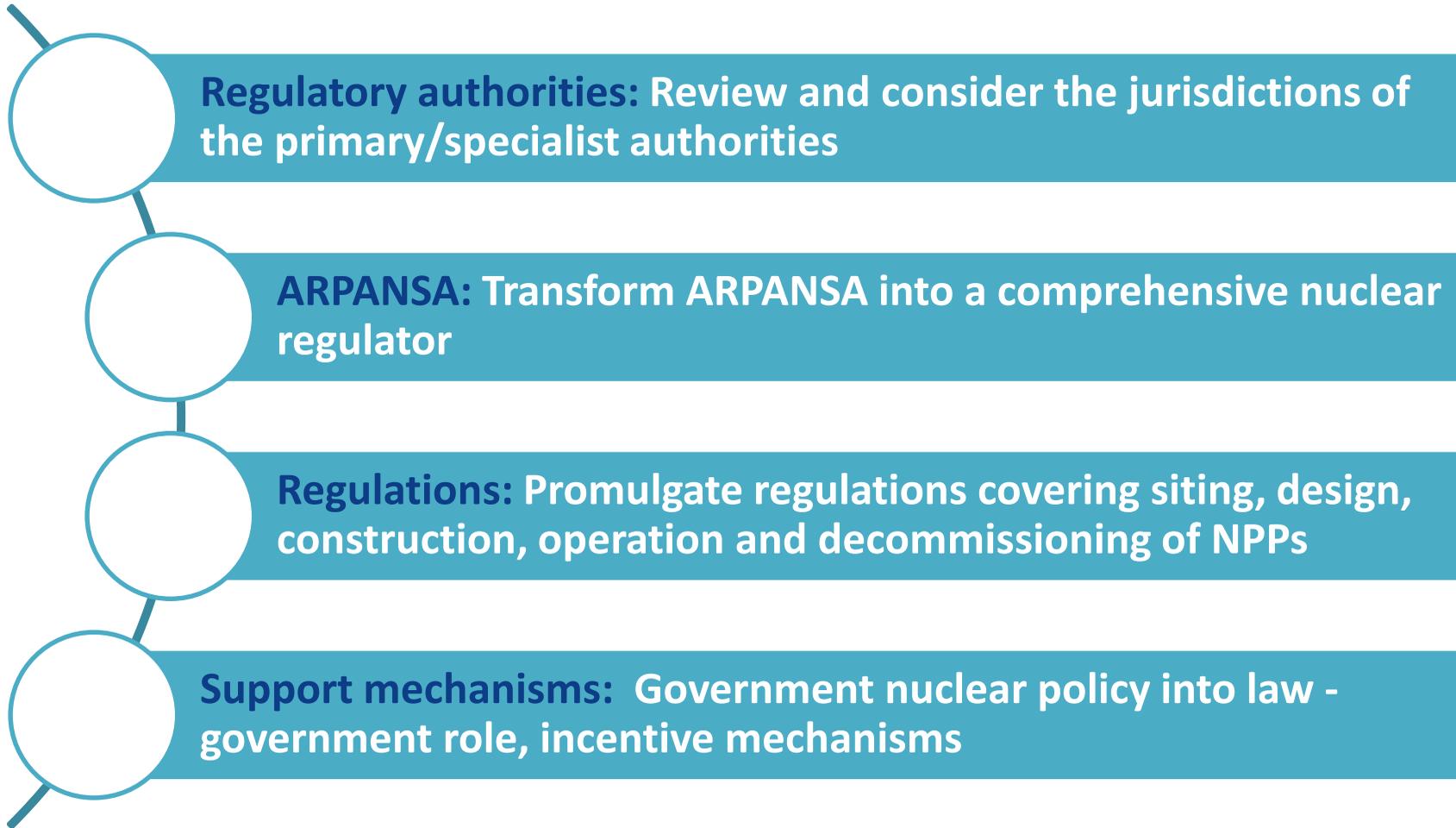
Australia's domestic legal/regulatory regime

Act	Purpose
South Pacific Nuclear Free Zone Treaty Act 1986; CTBT Act 1998	<ul style="list-style-type: none"> • Implement obligations under respective treaties
Nuclear Non-proliferation (Safeguards) Act 1987	<ul style="list-style-type: none"> • Establishes Australia's safeguards system (implements NPT, IAEA CSA and AP) and physical protection system (implements CPPNM and Amendment). • Overseen by the Australian Safeguards and Non-Proliferation Office (ASNO).
Australian Radiation Protection and Nuclear Safety Act 1998 (ARPANS Act)	<ul style="list-style-type: none"> • Regulates the operation of nuclear installations and the use and management of radiation sources, where these activities are undertaken by Commonwealth Government entities. • Empowers ARPANSA to promulgate regulations. • Prohibits approval of actions involving the construction or operation of a nuclear fuel fabrication plant, a nuclear power plant, an enrichment plant, or a reprocessing facility.
Environment Protection and Biodiversity Conservation Act 1999	<ul style="list-style-type: none"> • Establishes requirements for EIA processes for actions in relation to matters of "national environmental significance", including "nuclear actions" • Prohibits approval of actions involving the construction or operation of a nuclear fuel fabrication plant, a nuclear power plant, an enrichment plant, or a reprocessing facility.
Commonwealth Radioactive Waste Management Act 2005	<ul style="list-style-type: none"> • Commonwealth Government decision to locate a radioactive waste management facility in the Northern Territory.

So what would Australia need to do?



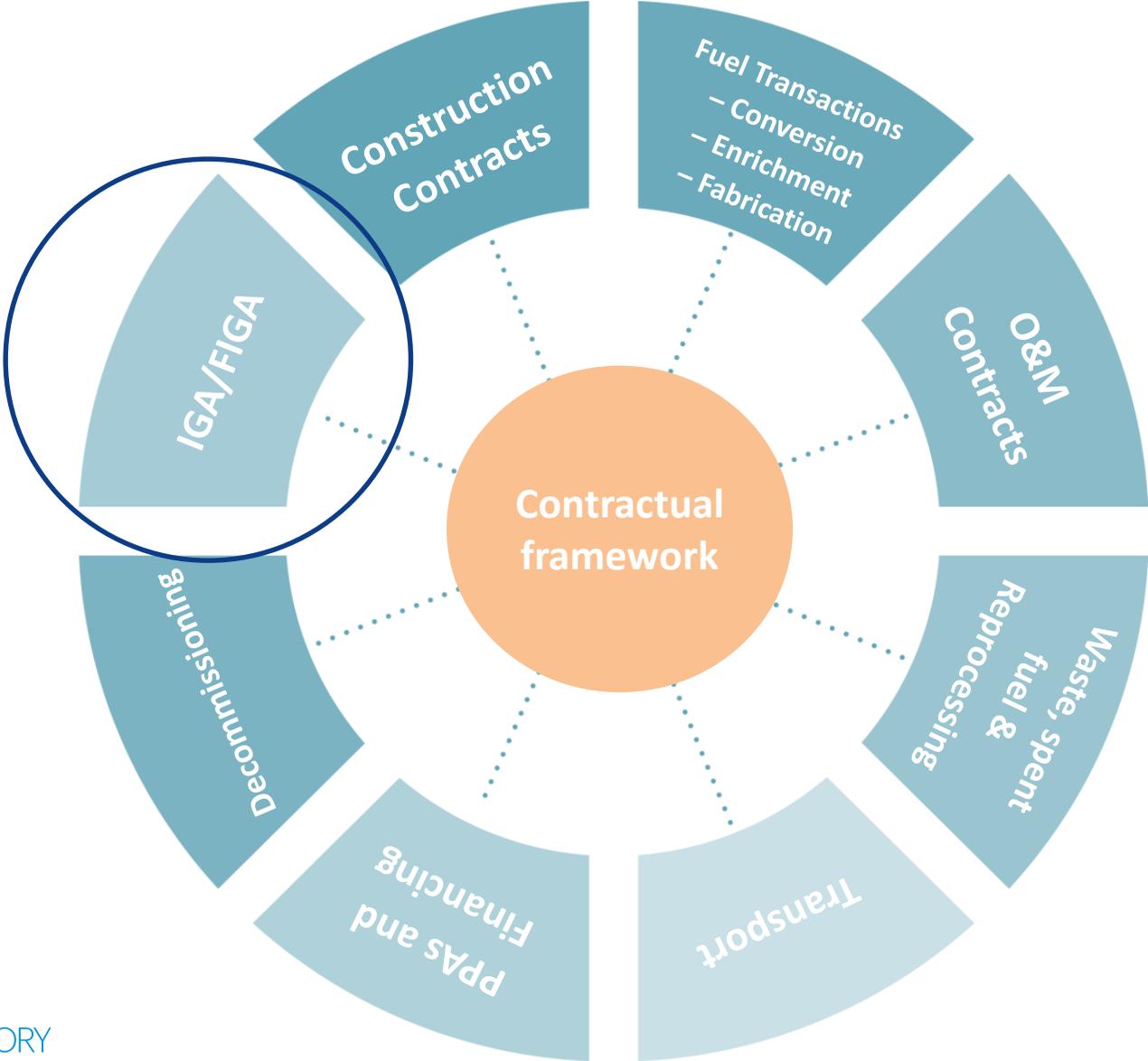
So what would Australia need to do? (cont)



3.

Current global nuclear power
projects

Contractual framework



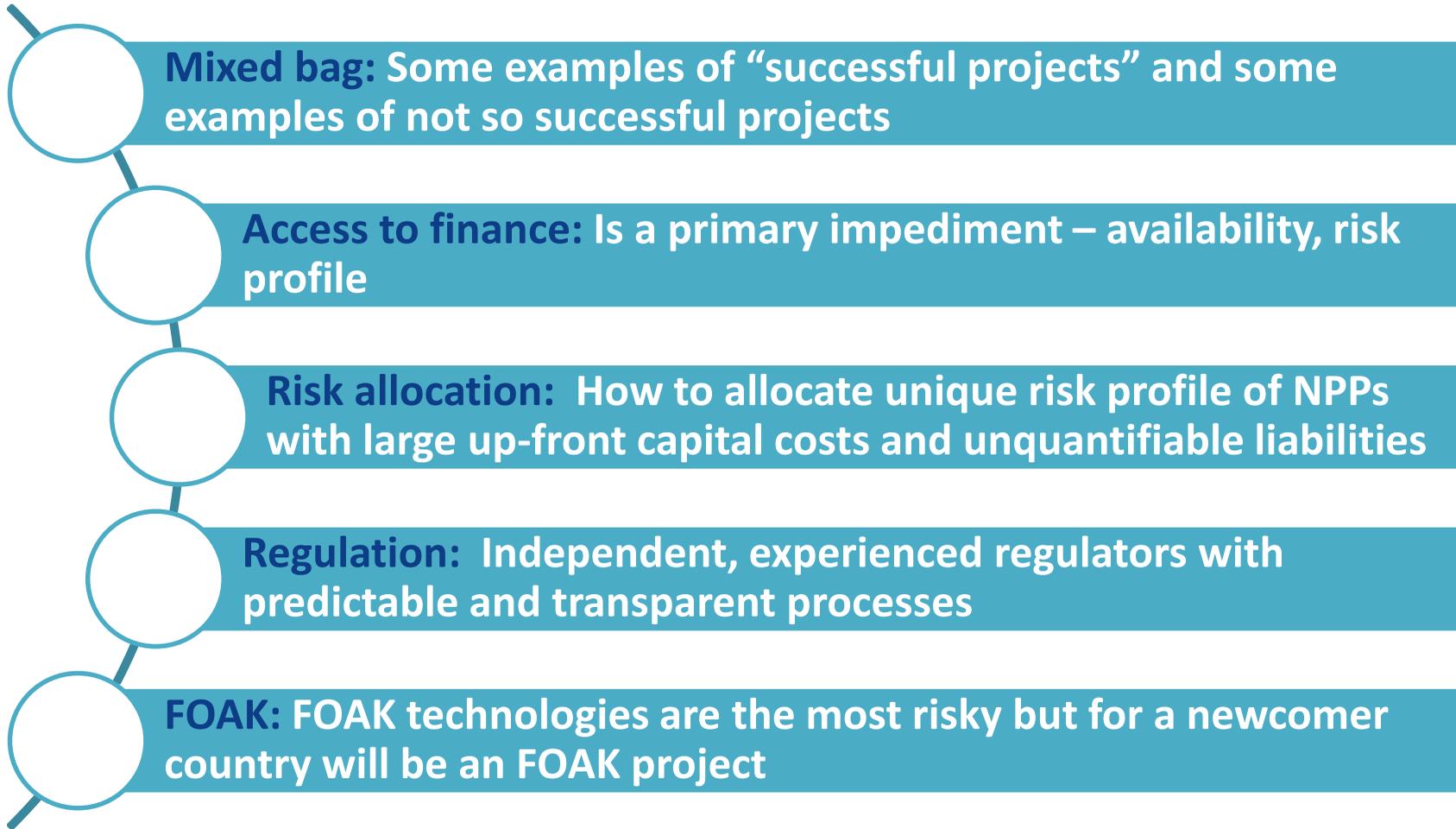
USA nuclear new build

Project:	Vogtle 3 & 4 - Georgia	VC Summer 3 & 4 – South Carolina
Owner	Southern Nuclear Operating Company	South Carolina Electric & Gas
Technology	Westinghouse AP1000 x 2 units	Westinghouse AP1000 x 2 units
Electricity market	Regulated	Regulated
Finance	DOE loan guarantee Toshiba PCG	No DOE loan guarantee Toshiba PCG
Schedule	COL issued 2012, unit 1 to be operational by 2016/unit 2 by 2017 <i>Now – 2021/2022</i>	COL issued 2012, unit 1 to be operational by 2016/unit 2 by 2017
Status	Significantly delayed and over budget Construction continuing	Suspended July 2017 (project 40-60% complete)

UK nuclear new build

Project:	Hinkley Point C	Horizon Wylfa	NuGen Moorside
Owner	EDF (owner/operator of UK fleet) with China General Nuclear holding 33.5% stake in project co	Hitachi	Toshiba (after series of divestments)
Technology	Areva EPR 2 units (second plant = China Hualong One)	Hitachi-GE ABWR - 2 units	Westinghouse AP1000-2 units
Government support	<ul style="list-style-type: none"> Contract for Difference (£92.50/MWh for 35 years) Government guarantee 		
Status	Construction underway	Suspended	Liquidation

Take-aways from global market



Take-aways from global market (cont)

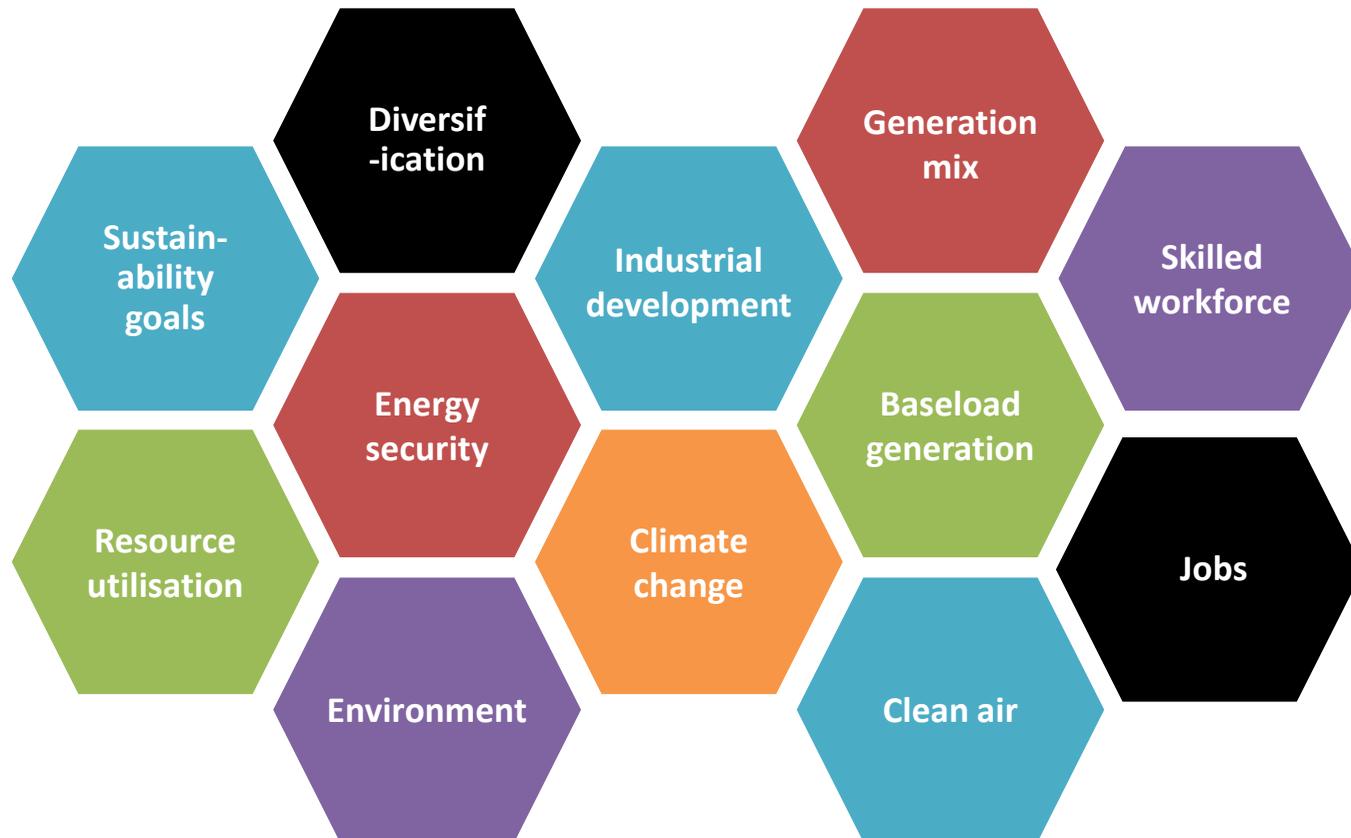


4.

Conclusions

Benefits of nuclear energy

- **Benefits:** The benefits of nuclear energy are **long term** and **sovereign** in nature
- **Value:** Only governments can properly value these benefits, in particular over the 60-80 year operating life



Forms of Government support

Direct participation

- Equity
- Debt
- Project guarantees - sovereign guarantees, loan guarantees
- Revenue guarantees - payments PPAs, strike price under CfDs
- Other asset ownership and/or contribution to the project (e.g. NPP site)

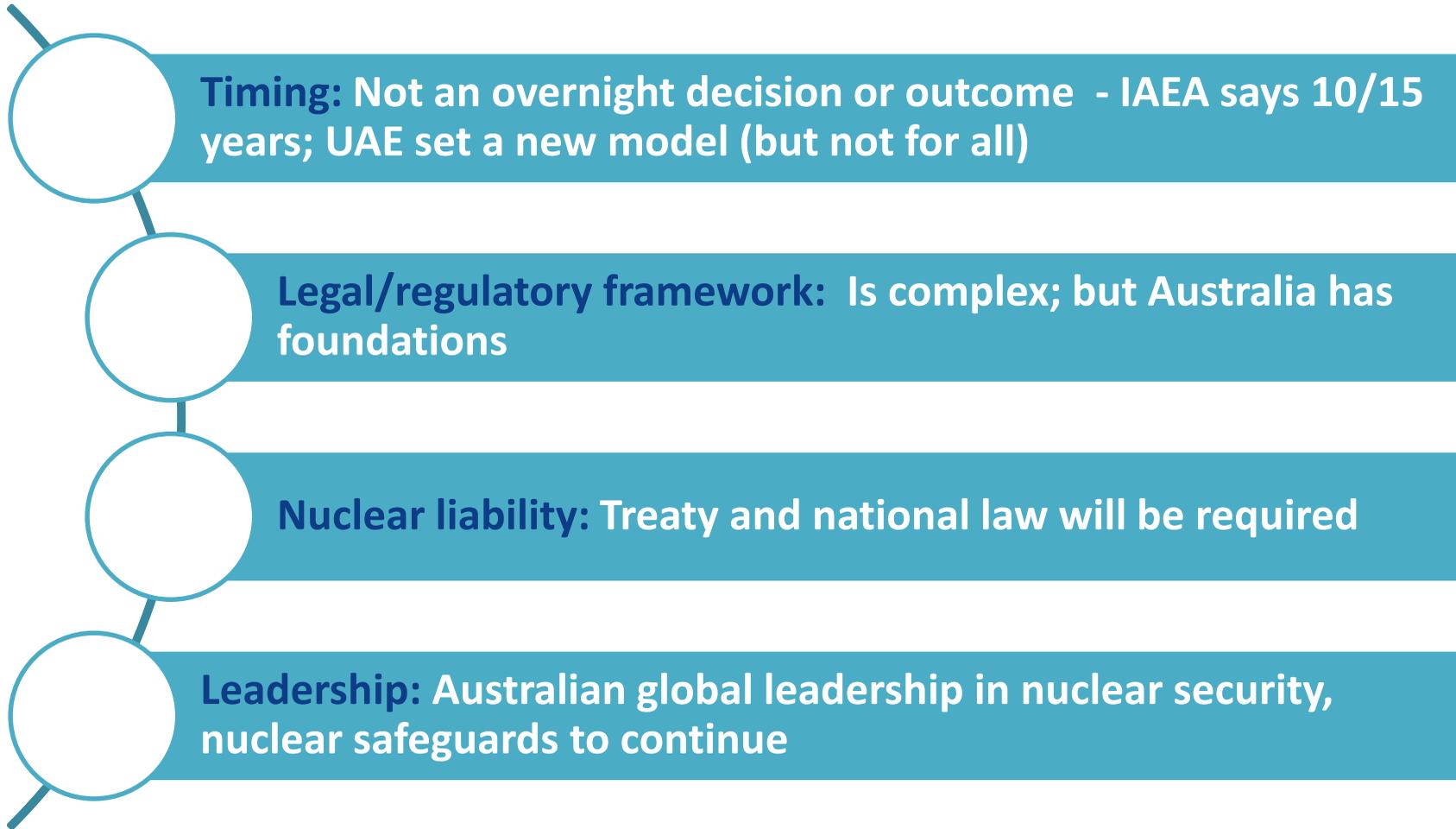
Indirect participation

- National infrastructure delivery - upgrades to electricity grid and transport systems to the NPP site
- Waste solutions – practical and financial
- Nuclear liability - backstopping operators' liability, acting as nuclear liability insurer of last resort

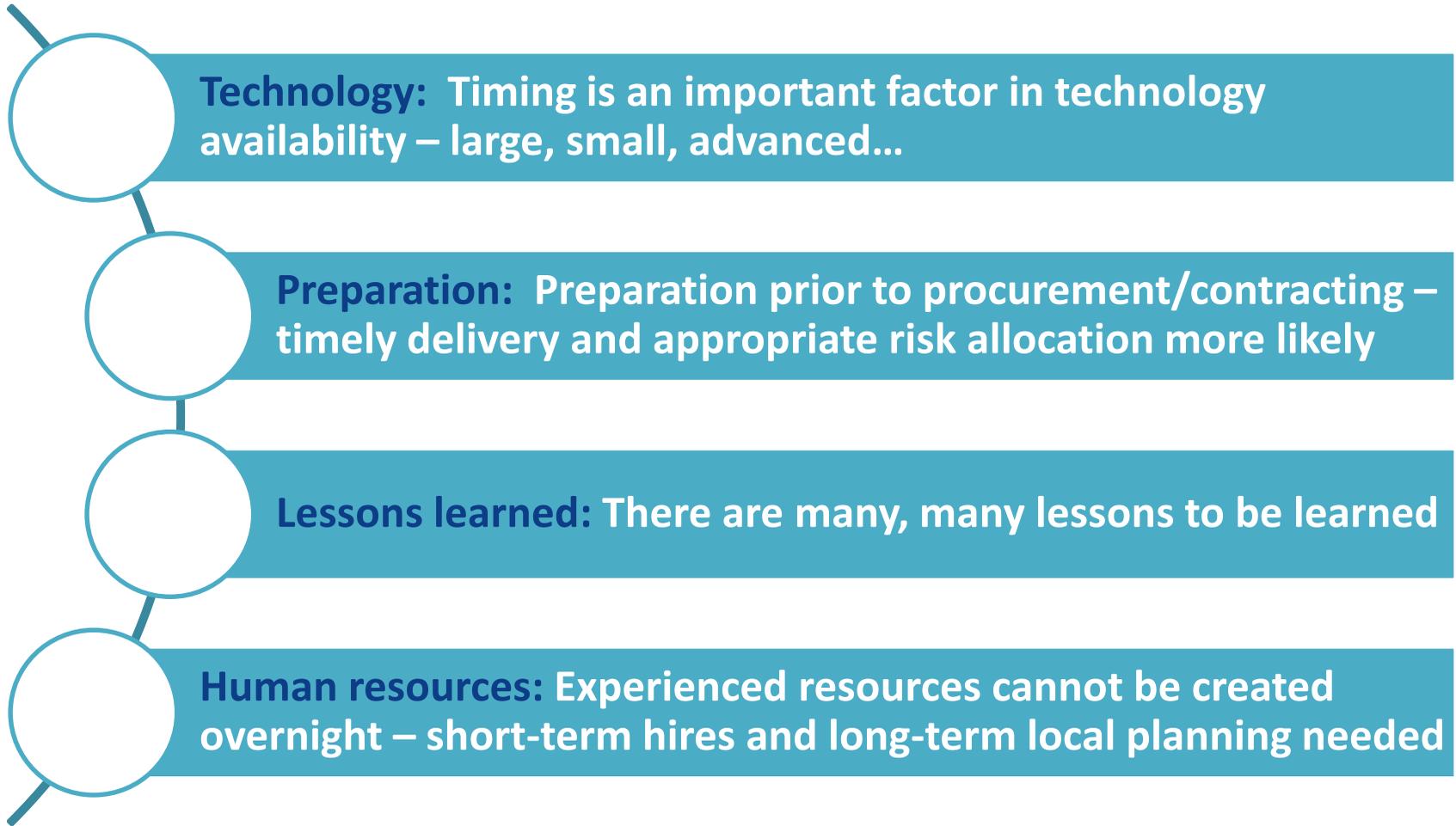
Other

- Strong and clear government policy
- International/bilateral nuclear cooperation
- Providing a predictable and transparent regulatory environment
- Public education initiatives
- Long-term work force education programs
- National research and development initiatives

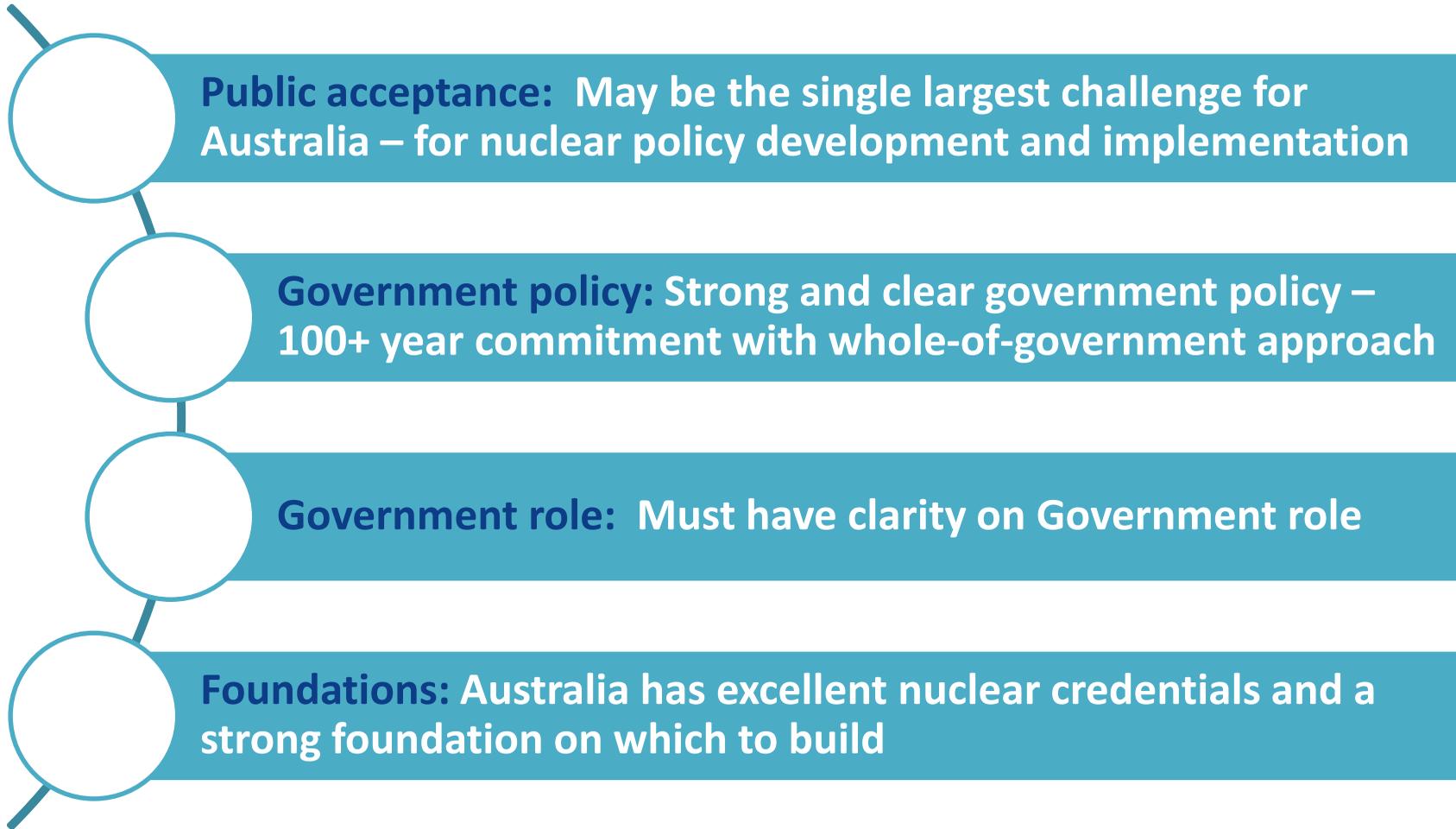
Thoughts for Australia



Thoughts for Australia (cont)



Thoughts for Australia (cont)



Questions



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