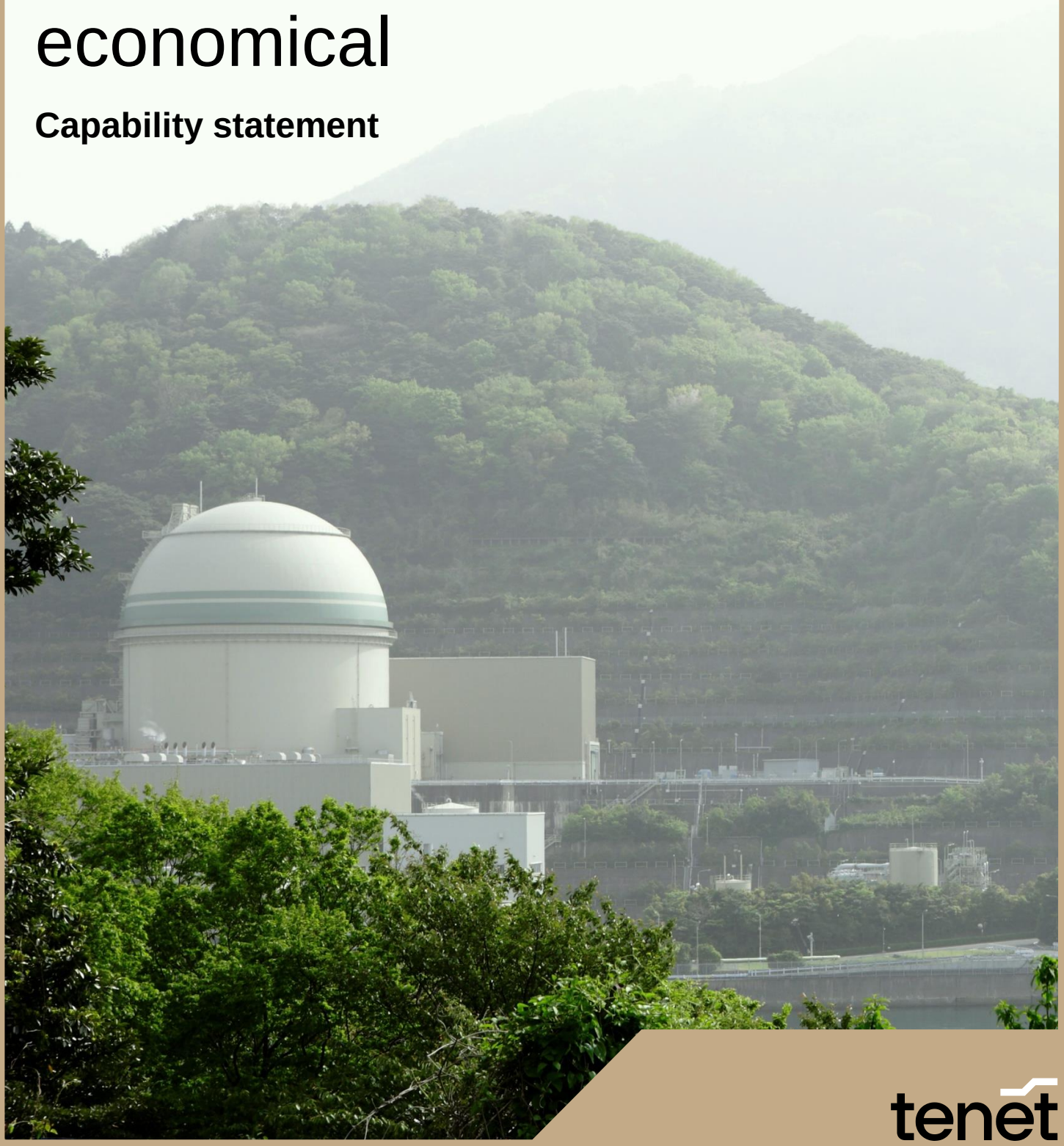
→ 2025

Nuclear Sector

Cost-based reactor siting: faster, smarter, and more economical

Capability statement



tenet

Reactor siting goals

WHY NUCLEAR POWER SITE SELECTION MATTERS

Choosing the right site for a nuclear power plant is not just about regulatory approvals – it's also about ensuring economic efficiency from the outset. Poor site selection can double construction costs, lead to project delays, and undermine the financial viability of even the most advanced reactor designs.

Traditional approaches prioritise safety, but often overlook cost-based analysis, making financial optimisation an afterthought rather than an integral part of the site selection process.

Site selection is an essential step within a national nuclear power programme:

Technically feasible 01

Socially & environ-mentally acceptable 02

Bankable for investors 03

x2 **potential cost & time variation due to site-related issues**

Reactors and nuclear power plants by type

Nuclear Power Plant	Reactor models			Unit capacity	Plant capacity
Large nuclear power plants **(NPP)**	VVER 1000/1200	31	21	1.000-1.400 MW	2-4 units per site 2000-5600 MW
	Hualong One	7	26		
	AP1000	6	12		
	APR-1400	8	4		
Small modular reactors **(SMR)**	ACP100	0	1	55-125 MW	Up to 6-12 units per site 330-1500 MW
	RITM-200N	0	1		
	NuScale VOYGR	0	0		
Floating power plant **(FPU)**	RITM-200M	6	8	50-55 MW	2 units per FPU 100-110 MW
	ACPR50S	0	1		

X operation X construction

HOW WE HELP STAKEHOLDERS

NEPIO / Owner's Operator

1. Reactor optimisation and grid integration studies
2. Site selection studies for new builds
3. Tender design to mitigate risks

Vendor & EPC

1. Pre-tender / negotiation site check
2. Cost & risks assessment to given site
3. Tender response / second opinion for risk mitigation

Banks & Investors

1. Technical and commercial due diligence
2. Stakeholder consultation
3. Business plan review

Siting studies

OUR SOLUTION: COST-BASED PARAMETRIC MODEL

At Tenet we integrate GIS-based geospatial intelligence, parametric cost modelling and AI-driven analyses to:

- **Cut site evaluation times from years to under three months**
- **Identify optimal locations before substantial investments are made**
- **Reduce overall project risks by ensuring early economic feasibility**

With experience in Southeast Asia, Africa, and the Middle East we have successfully applied our methodology to SMR and large-scale NPPs. We are ready to help integrate most international designs into our costing model

Cost modelling coverage

- **Large NPP**
- **SMR**
- **FPU**
- **Research reactors**

HOW WE WORK: THE REACTOR SITING PROCESS

01

Digital mapping & OSINT data

Using satellite data and open-source intelligence to pre-screen sites

02

Parametric cost modelling

Assessing how site conditions impact costs, thus predicting potential obstacles before they arise

03

Site assessment and walk-through audits

Site visits to observe locations, conduct interviews, and verify findings

04

Fast-track decision support

Providing stakeholders with clear and graded recommendations

CUSTOMER BENEFITS

Boosting financial efficiency across multiple projects

Speeding up approvals for new sites

Enhancing competitiveness in global markets

If you would like to find out more

Contact us to explore how our GIS-driven approach can optimise and streamline your next project.

The Tenet Nuclear team

Our Tenet team of consultants and engineers assists in delivering a range of nuclear power projects, incl. large-scale reactors, small modular reactors (SMR), and floating NPP, and integrating them into the wider context of power system and supply chain localisation.

We provide access to one of the widest nuclear power expert pools globally, across all 19 nuclear infrastructure issues, to successfully deliver projects in South-East and Central Asia, the Middle East, Europe, Africa, and Latin-America. We support the planning and execution of nuclear energy programmes internationally.

* In the UAE we work under the SW Tenet brand

SELECTED PROJECTS

Nuclear power project workshop for the Jordan Atomic Energy Commission
Oman, Jordan, June 2024
IAEA

Pre-feasibility study for SMR integration into the energy system of an Eastern African country
2023 - 2024
Nuclear technology vendor

Pre-feasibility study for 2GW thermal power plant in Caucasus region, including site selection
2025
Privat Investment Holding

IPP selection for BOO of the 500-MW Yashma combined cycle plant
2023
Ministry of Energy of Azerbaijan

International Conference on Small Modular Reactors and their Applications
Vienna, Austria, October 2024
IAEA

Peer review of the site selection methodology for SMRs in Peninsular Malaysia
2024 - 2025
Tenaga Nasional Berhad Research

Just energy transition: principles of developing affordable power systems in Eastern and Southern Africa
2024
Analytical study

Company's development strategy to 2032
Technical diagnostics and analysis of development scenarios
2022
A major energy holding company in Kazakhstan

Contacts

Robin Matthews

Regional Director, Tenet Middle East and Africa – Energy & Natural Resources

T: +971 50 924 0843
E: robinmatthews@tenetcons.com

Serbia

11000, Balkanska, 2, office 3202, Belgrade, Serbia

T: +381 695566070

www.tenetcons.com
nuclear@tenetcons.com