

How to lead the owner's nuclear new-build program?



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Recommendations for future owners

1. Key **expectations** are ensured to match well between the main stakeholders.
 2. Clear **targets** are set for each phase of the owner's program and investment lifecycle.
 3. Tangible technology and delivery **criteria** are defined for selection and final acceptance.
 4. Owner's organization is developed to be **competent** for executing each main program phase.
 5. Exact **implementation** requirements are specified by the vendor to meet owner's criteria.
 6. Production and **operational** perspectives are part of owner's decisions from the start.
 7. Financially oriented risk assessment is used to **focus** the management attention.
- ⇒ Leading all the people to accomplish what is **good enough** for safety and quality.
- ⇒ Managing the risks by **driving progress** proactively, actively and reactively.

Targets – stakeholder and project drive

Project	Prospecting	Planning	Preparation	Construction	Production
Owner's role and scope	Owner's program plan and risk assessment	Site, technology and vendor selection	Vendor contracting	Owner's works	Energy demand
Licensing and permitting	Resolution of principal issues	Applications and permitting	Construction license	Quality assurance	Operating license
Vendor and supply chain	Technical feasibility	Project development and engineering	Project management	Supply chain performance	Fuel supply
Operation and maintenance	Waste management	Operation modelling	Site preparations	Operating organization	Operational services
Financing and performance	Economic feasibility	Shareholder commitment	Financing secured	Project progress	Plant performance
Target	Possible	Confirmed	Decided	Built	Commissioned

For example

2023



2025



2027



2031



2032



Culture – enabling and driving the progress

- ▶ Starting from the lucky corner
– great but potentially risky

- ▶ How to build a proactive, winning project culture...

instead of a reactive, destructive culture with no real co-operation?

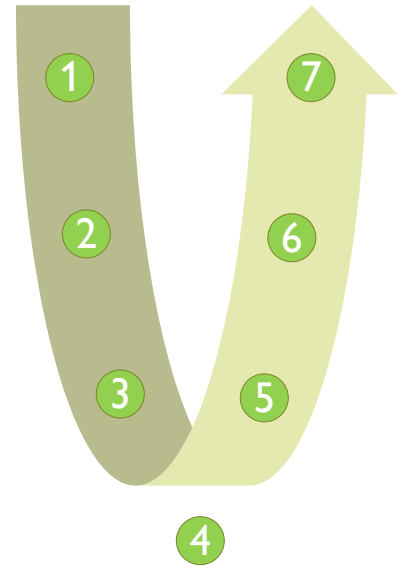
- ▶ Vendor ⇔ Owner ⇔ Regulator
– it's all about people and content!



https://www.suomalainen.com/products/yriyikultuuri-on-kuningas-1?variant=21151777030233¤cy=EUR&clid=EAlalQobChMlcf-6lyK-wiVLkaRBR39cAPJEAYyABEgLHVpD_BwE

Steering – transparent owner’s program

1. **Stakeholders** – realizing the variety of expectations
2. **Phases** – defining the targets over investment life cycle
3. **Plant** – setting up the criteria for technology and delivery
4. **Organization** – leading people to be on the driver’s seat
5. **Projects** – vendor delivering according to the requirements
6. **Production** – optimizing the energy output per costs
7. **Risks** – managing both downsides and upsides.



⇒ It is the owner’s organization who needs to turn expectations into performance as an intelligent project customer, competent plant operator and trustful licensee!

Decisions – tangible owner’s criteria

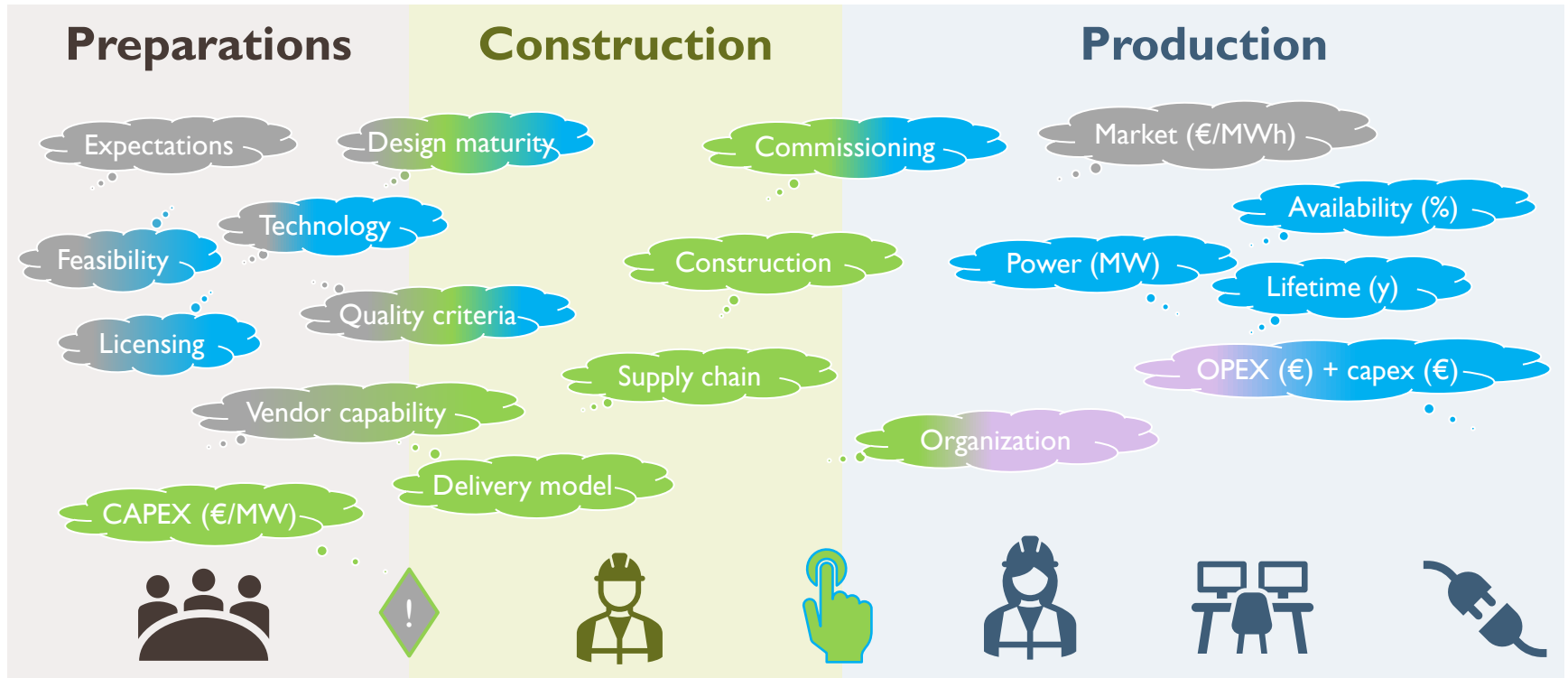
	Preparations	Construction	Production
Technical	Reference design and local conditions	Delivery quality and plant commissioning	Plant performance and lifetime
Delivery	Capability, localization, scheduling and contracting	On-site construction and off-site deliveries	Fuel, service and spare parts supply
Owner	Siting, financing and risk management	Owner’s scope, supervision and learning	Operating organization, systems and culture
External	Licensing and permitting	Regulatory oversight	Market demand

Vendor – how to evaluate capabilities?

- ▶ Top-down view driving owner’s focus and attention, supervision and audits
- ▶ Clearly stated evaluation criteria for all main delivery entities
- ▶ Acceptable status (●●●) depending on the project stage.

Lead & manage	Licensing	Engineering	Off-site	On-site
Planning & people	Lead engineers ○	Resource management ○	Supply chain management ○	Site and civil works ○
Processes & practices	Safety assessment ○	Configuration management ○	Procurement and controls ○	Construction and installations ○
Products & data	PSAR and FSAR ○	Basic design ○	Systems and components ○	Buildings and structures ○
Local ecosystem	Local regulations ○	Application of national codes ○	Equipment qualification ○	Civil partners ○

Management – top-down risk focus



People – leadership with a clear story

Owner's program plan

incl. financially oriented
business risk assessment

	<i>Expectations</i>	<i>Targets</i>	<i>Criteria</i>	<i>People</i>	<i>Implementation</i>	<i>Output</i>	<i>Value</i>
1. Stakeholders	Business case & investment plan	Shareholders and lenders	Government and authorities	Suppliers and contracts	Regional and local	Partnerships and services	Media and public relations
2. Phases	Site and environment	Technology & vendor	Plant safety and licensing	Supply chain readiness	Construction readiness	Operational readiness	Decommissioning
3. Plant	Regulatory requirements	Design adaptation and maturity	Procurement & supply chain	Construction and localization	Validation and commissioning	Operational features	Replacements and refurbishments
4. Organization	Responsibility and governance	Competence and commitment	Recruitment and consultants	Roles & responsibilities	Learning and training	Management system	Information management
5. Projects	Management and integration	Contracts and scopes	Planning and time schedule	People and capacity to deliver	Progress & quality	Reporting and control	Claims and disputes
6. Production	Fuel and waste	Power and upgrades	Availability and outages	Operators and qualifications	Trade and load follow-up	Operation & maintenance	Plant lifetime and extension
7. Risks	Risk assessment	Investments and financing	Agreements and contracts	CAPEX and project risks	OPEX and uncertainties	Plant performance and output	20xx-20yy €/MWh

Looking forward!