




# TRACTEBEL

H<sub>2</sub>

ENGIE

# Small Modular Reactors



## Building on 60+ years of nuclear experience, Tractebel leads innovation in Small Modular Reactors (SMRs)

Tractebel has been the architect engineer and responsible designer for the Belgian nuclear fleet since 1960's. Our highly skilled and experienced experts can adapt the current engineering practices to the new paradigm imposed by SMRs.

SMRs are simple, small and standardized solutions. They can renew investors' appetite for nuclear projects, improve certainty of delivery on time and budget, and facilitate the introduction of advanced technologies.

SMRs enable and extend the uses of nuclear technologies to innovative industrial applications such as energy storage capabilities, Combined Heat and Power for the heavy industry and hydrogen & eFuels production.

### Our development programme

- Advance R&D and demonstrate **Passive Safety** performances
- Recommend and defend adaptations to the Licensing approach backed by inherent safety features
- Drive localization strategy for the supply chain rooted in mastery of American and European **Codes & Standards**
- Address and unlock untapped opportunities in **Industrial Applications** leveraging our 360° understanding of tomorrow's energy landscape

### Our added value

- An **international footprint** to allow a continuity of experts, processes and tools from one project to the others
- A **team** of meticulous pioneers eager to tailor solutions to **First-of-a-Kind** projects
- A **network** of world-class experts to de-risk the most ambitious and complex projects



### Clients benefits

A **partner** that anticipates needs and addresses issues upfront in particular for **unexperienced** market actors



# Tailoring our role to your needs and project maturity



Discover our SMR White Paper

## WHO CAN BENEFIT FROM OUR EXPERTISE?



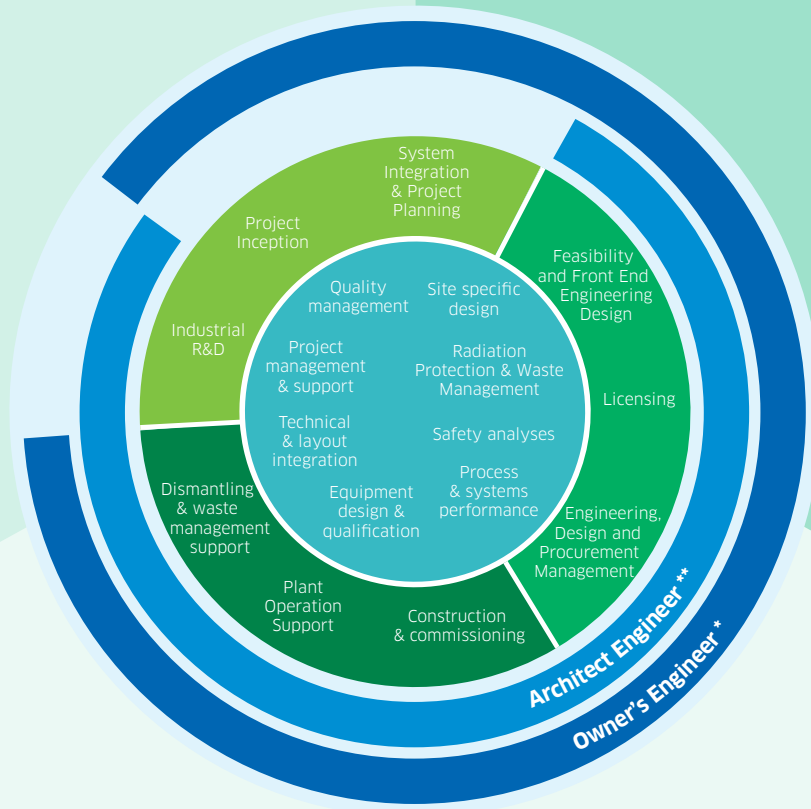
SMR developer looking for cutting edge expertise and a trustworthy partner for larger market deployment

Industrial R&D  
End-to-end design & Constructability  
Project planning & structuring  
Operating Procedures



Utilities & industrial off-takers looking for options to decarbonise their assets

Master Planning  
Technology assessments  
Pre-Feasibility & Feasibility Studies  
Technical & Regulatory Consultancy  
Organizational development



Established nuclear operators looking for a competent partner to deliver projects on high-quality, time and budget



Due Diligence  
Site selection & characterization  
Environmental Impact Assessment & Licensing  
Operational readiness  
EPC Management

**\*Owner's Engineer:** when the client is the future owner and/or end-user of the asset

**\*\*Architect Engineering:** when the client is the provider of the technology to be built

## SOME REFERENCES SMALL MODULAR REACTOR

### Coal plant retrofit Mission in Poland

**Objective**  
Assess the relevance of retrofitting two coal fired combined power and heat plants (CHPs) with SMRs.

**Solutions**  
Multi-expertise evaluation of brownfield opportunities and retrofit strategies to ensure service continuity.

**Results**  
Sites and assets characterization regarding suitability to host SMRs and comparative assessment of deployment scenarii accounting for technology options.

### CHP Chemical Mission in US & EU

**Objective**  
Optioneering study to decarbonize the production of chemicals at two large chemical plants in US and Europe given brownfield constraints.

**Solutions**  
Use of SMR to provide combined heat and power (CHPs) services to existing asset with technology options matching assets operational evolution and surrounding infrastructures.

**Results**  
System integration of a reduced list of SMR options meeting operating constraints and siting requirements while accounting for business imperatives from local geopolitics, regulation and supply chain.

### Utility program Mission in Estonia

**Objective**  
Suitability evaluation of SMR as a decarbonised power source beyond 2030 accounting for country' status as embarking in nuclear energy.

**Solutions**  
Technico-economic assessment of best suited SMR technologies considering technical merit, industrial deliverability and market appetite as well as survey of potential sites.

**Results**  
Reduced list of technologies and sites suitable for Estonia's SMR ambition used as a basis for the next project development phases.