

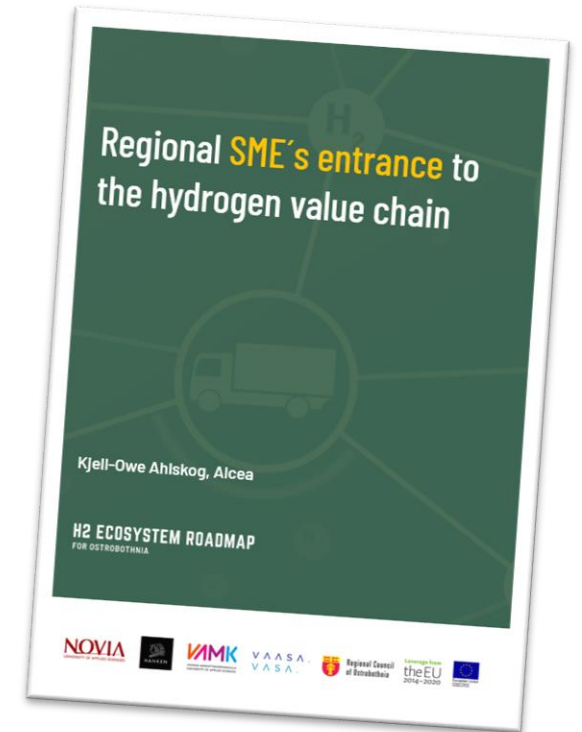
Regional SME's entrance to the hydrogen value chain

Work package 2 of the “H2 Ecosystem Roadmap for Ostrobothnia” -project.

Based on document studies and interviews with representatives of approximately 65 companies/organisations

Objective:

- Give regional companies (particularly SMEs) an insight into how large hydrogen and P2X projects are managed
- Provide ideas on what could be done to enhance our regional companies' possibilities to enter the growing hydrogen value chains



Local projects will play an important role

Critical success factors:

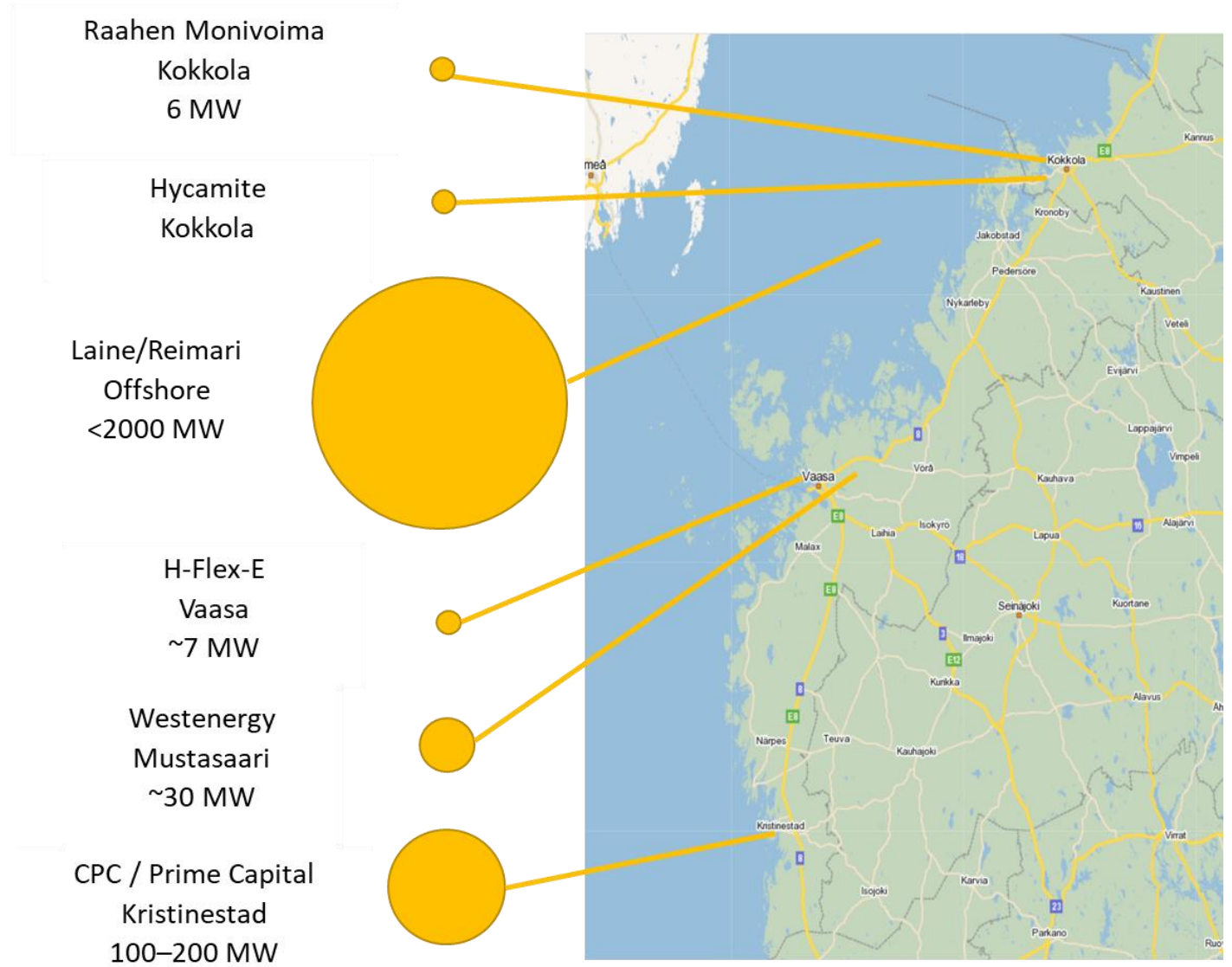
- References, proof of concept
- Competence, Licences, Standards
- Networks, business relations
- The more specialized products/services the company can offer, the bigger is the potential to reach customers outside our own region



Planned regional hydrogen and P2X projects

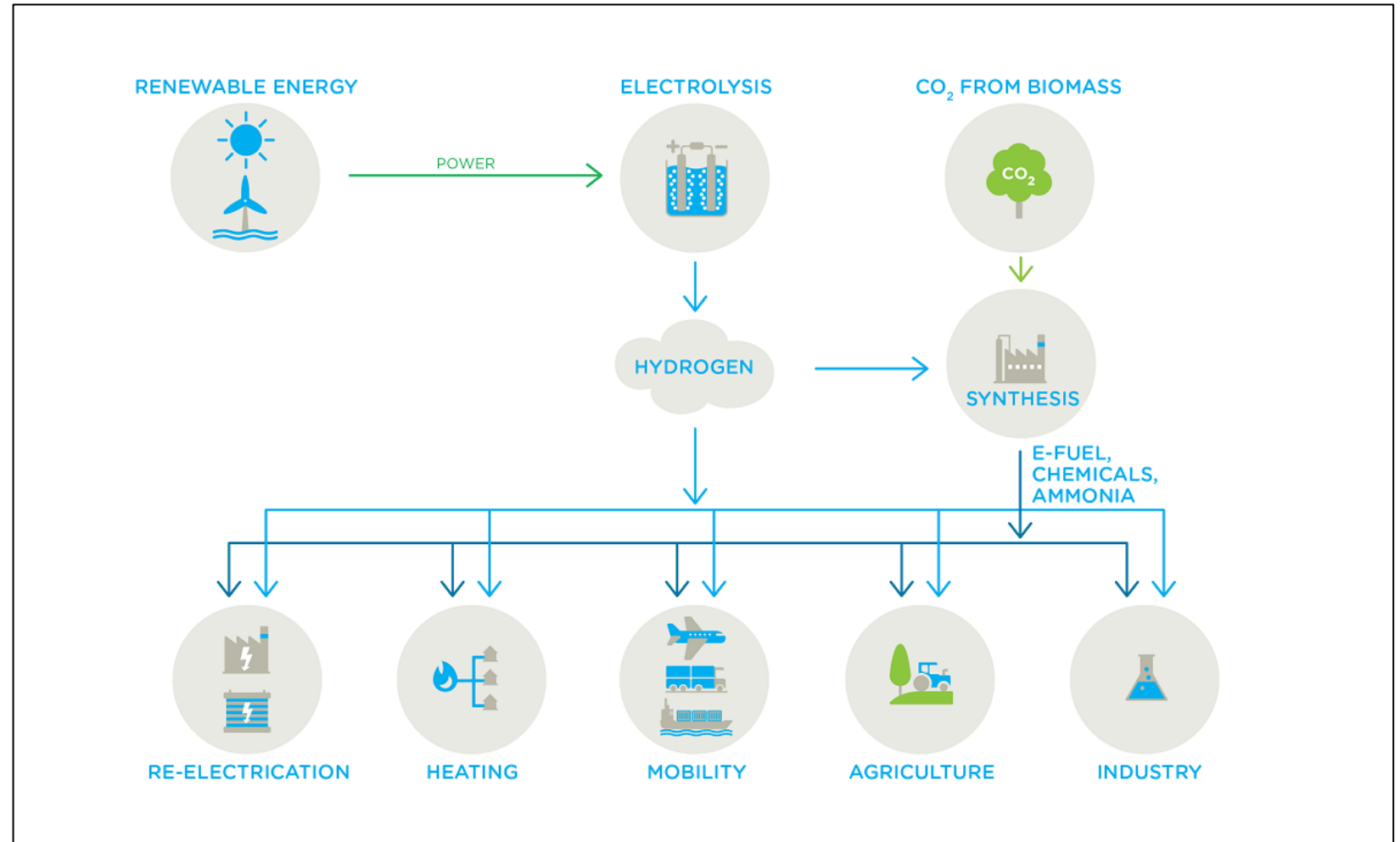
The Ostrobothnia region is attractive for investors in the hydrogen and P2X business

Mainly P2X (E-Methane)



Water + electricity => H2 => CCU => P2X

Business opportunities throughout the whole value chain



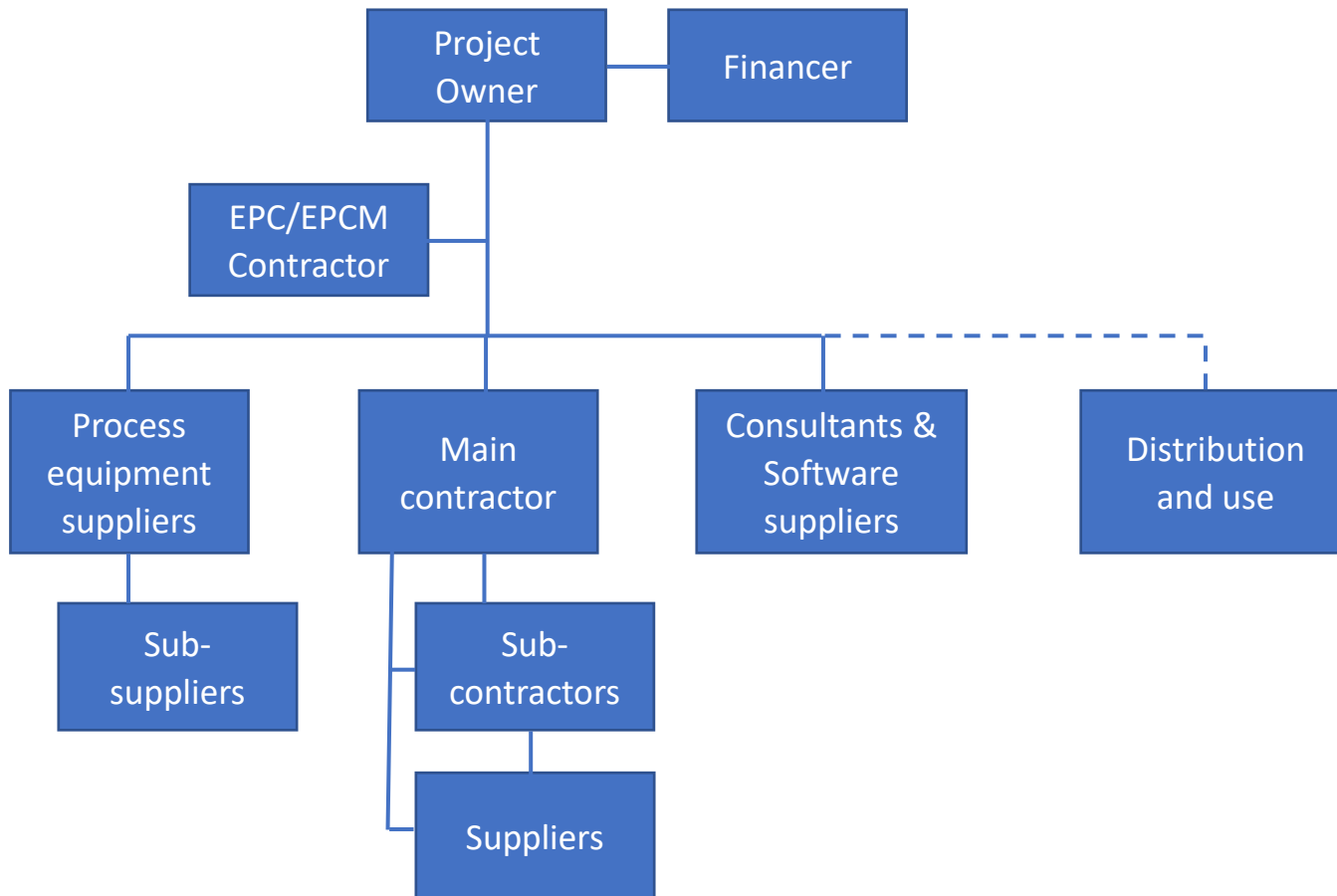
All business opportunities related to the growing hydrogen economy do not require special hydrogen/P2X competence or technology.

Business that requires specific competence or technology that comply with applicable quality, safety and security standards

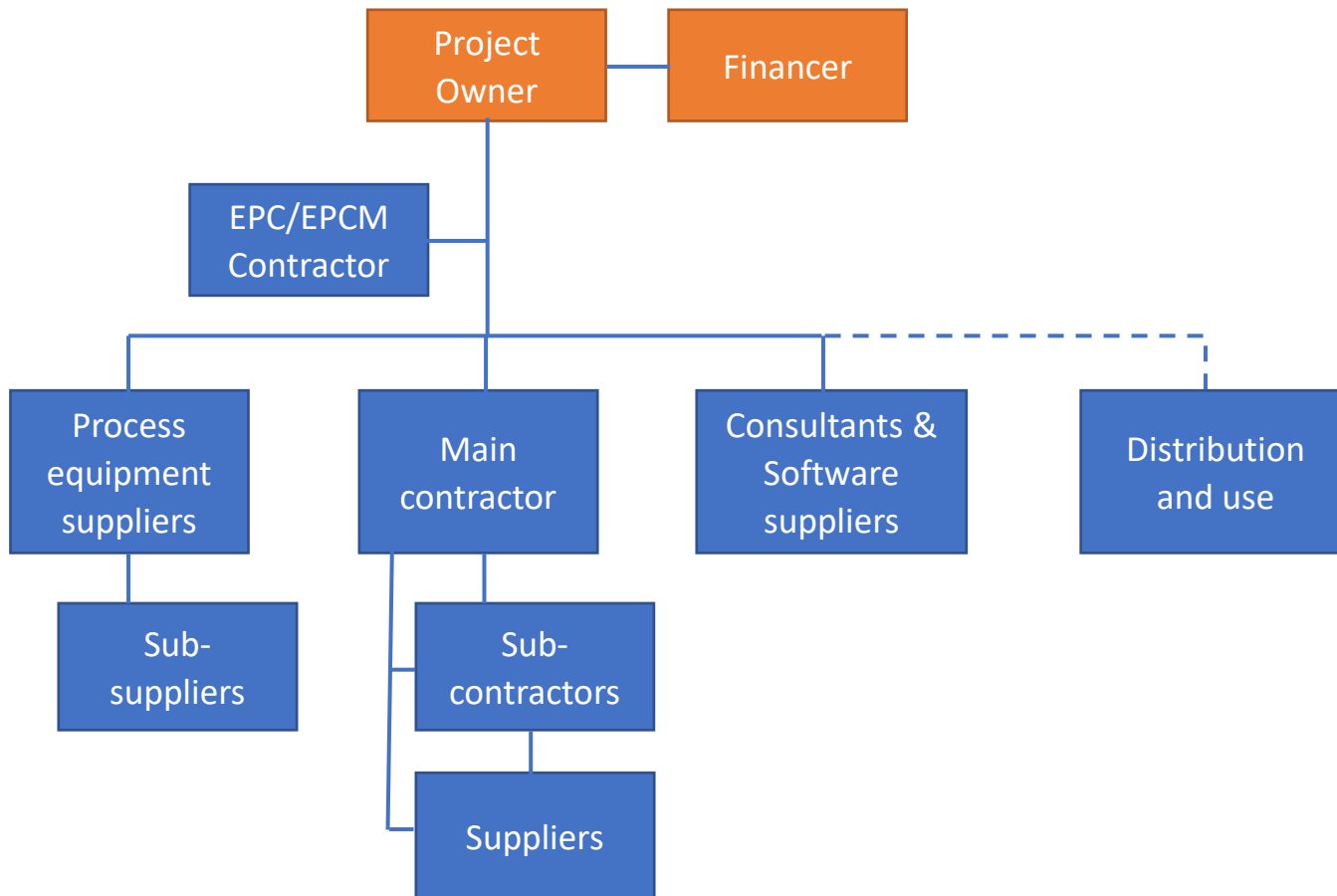
Business that is not directly related to hydrogen or P2X technology.



The structure of the P2X projects is often unclear to many people



Who does what?



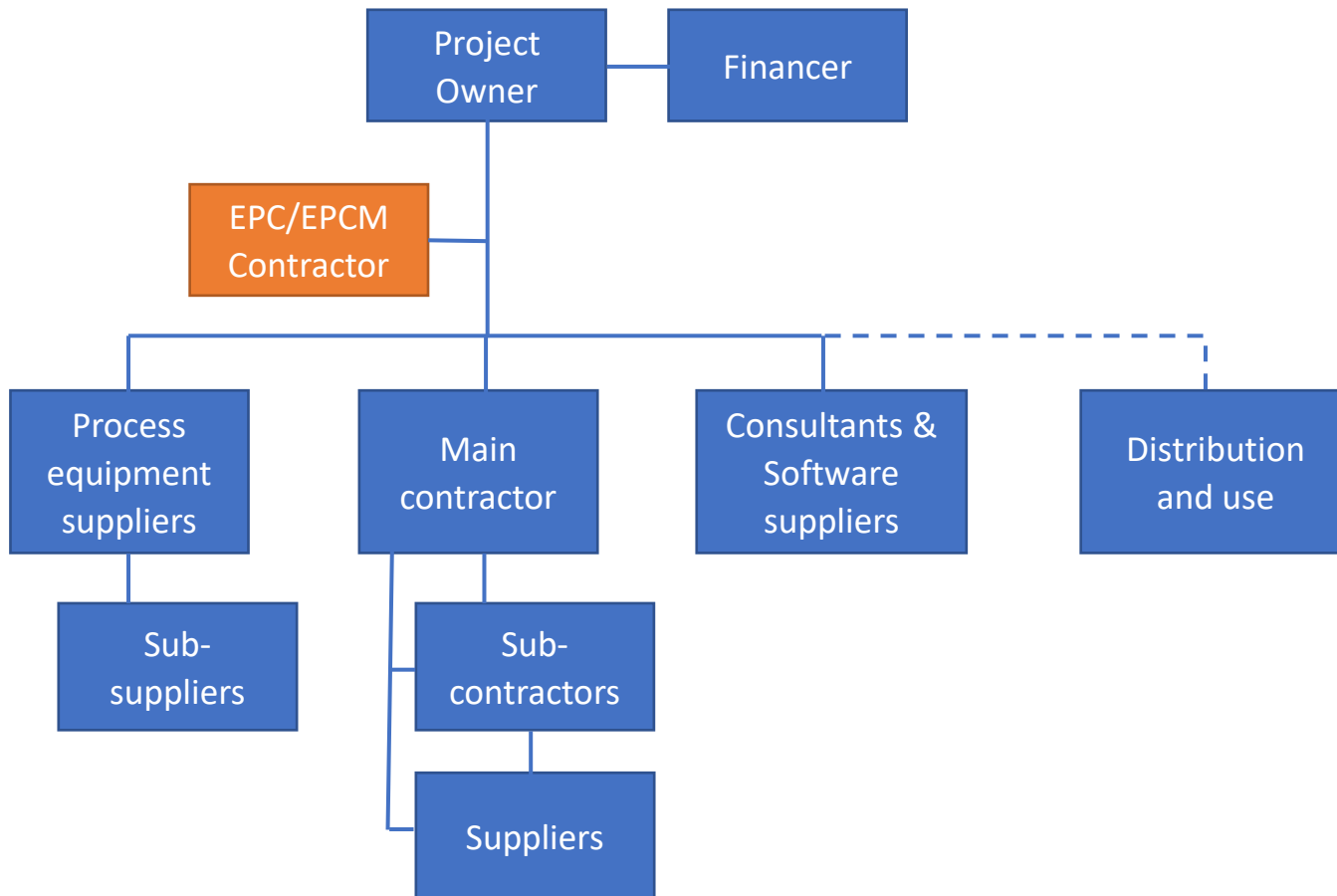
The Project owner (system integrator):

- Have the main responsibility for the overall planning and execution of the project
- Chooses the ECP/ECPM contractor

Financers

- International investors
- Energy companies
- EU/national subsidies

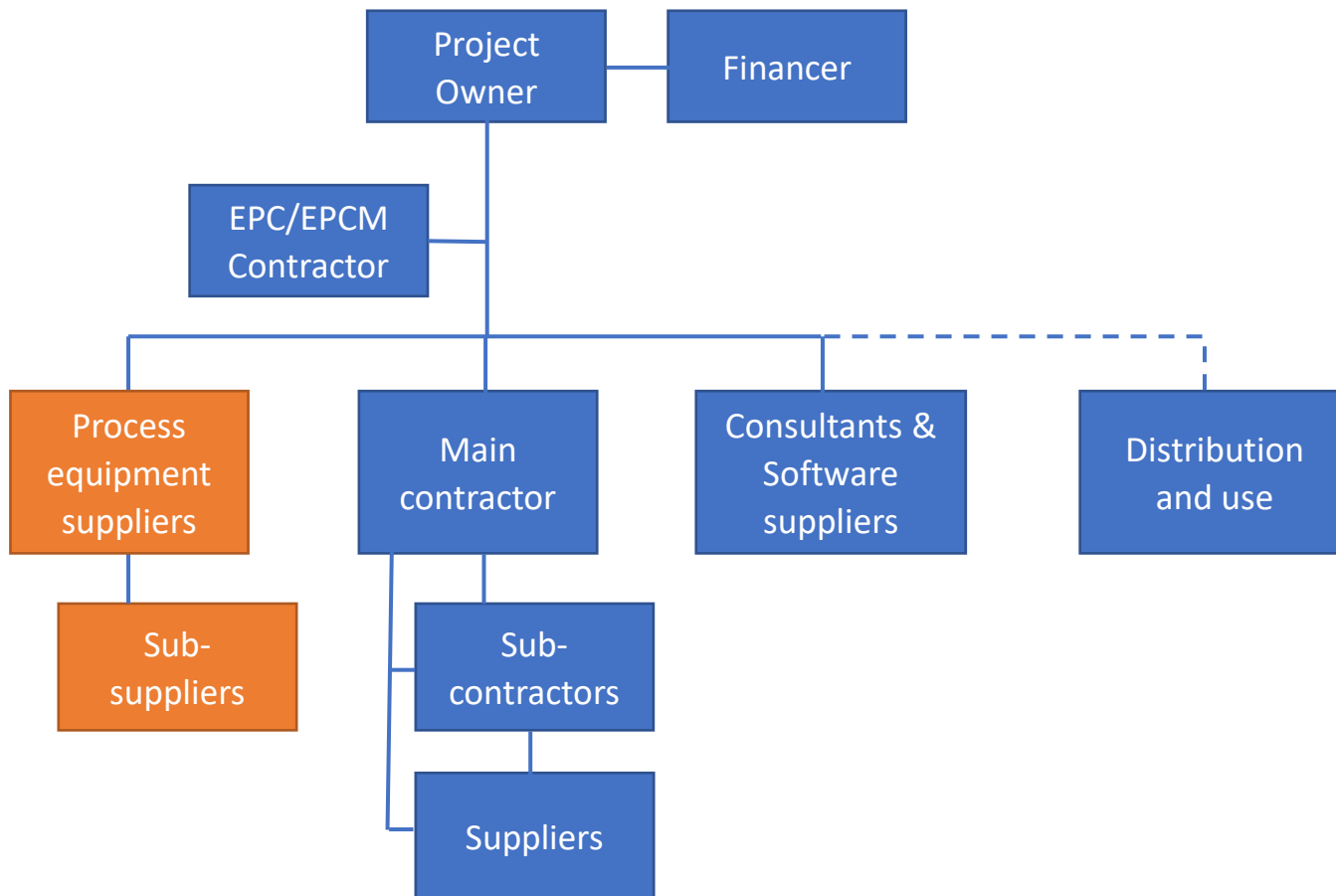
Who does what?



EPC/EPCM Contractor

- Selection of process equipment suppliers and the Main contractor
- Feasibility studies,
- Cost calculations,
- Engineering,
- Plant design,
- Process design,
- Environmental Impact Assessment,
- RFI & RFQ,
- Permit applications

Who does what?



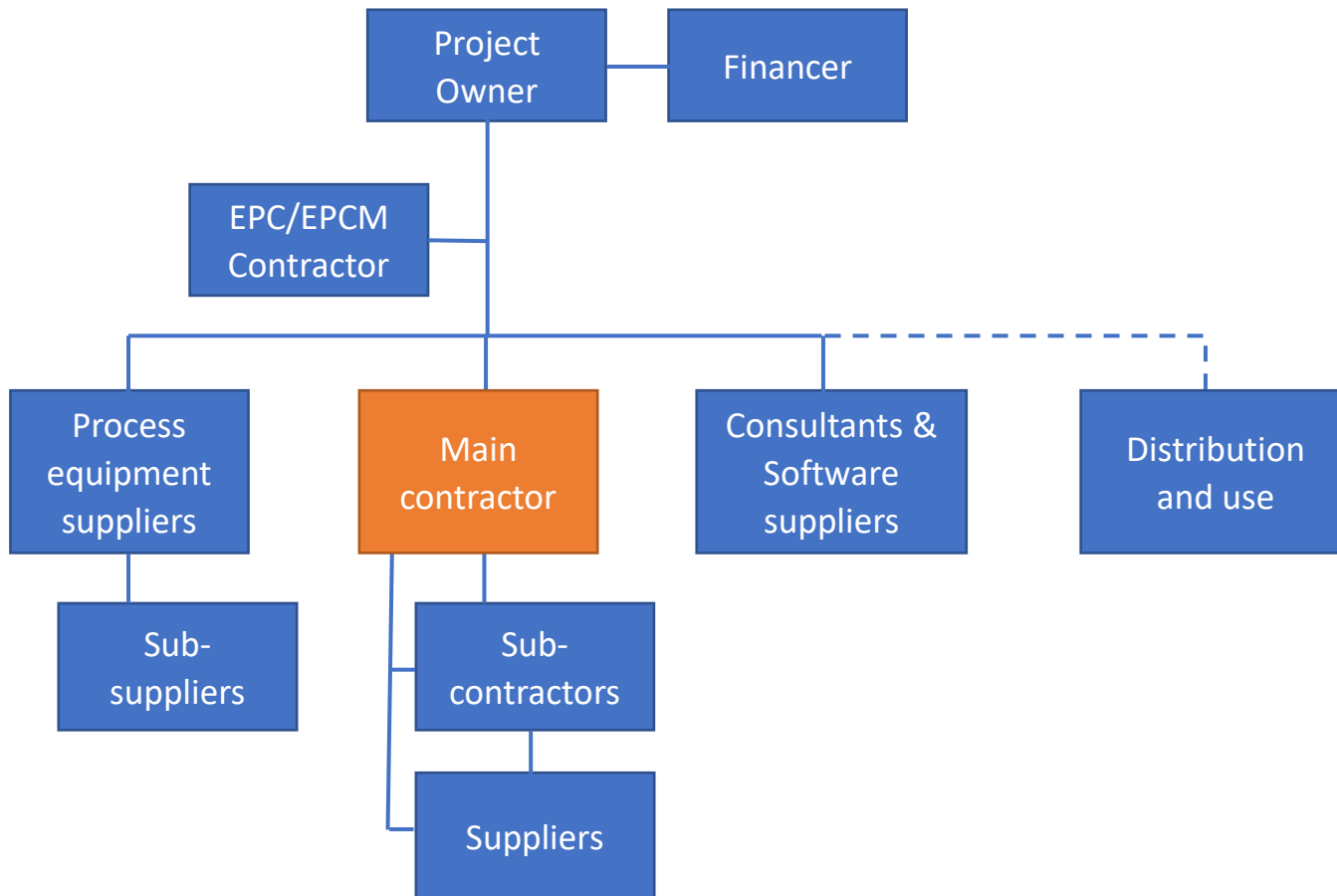
Process equipment suppliers

- Electrolysers, CCU, Production of Methane, Methanol or Ammonia
- The market is dominated by a few multi-national companies

Process equipment sub-suppliers

- Strict technical requirements on products and production processes
- E.g. electricity components, system solutions
- Potential to grow on the global market

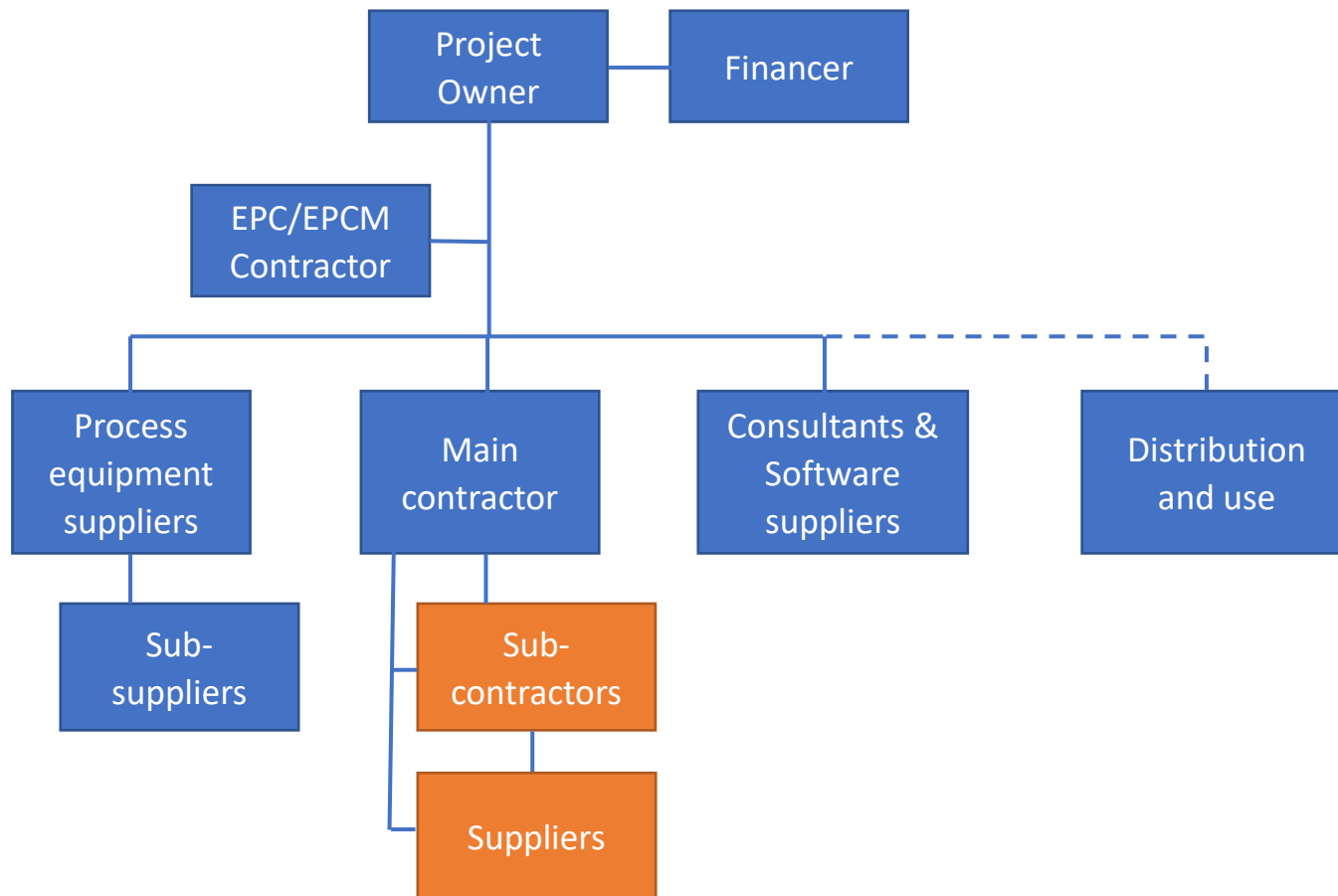
Who does what?



Main contractor

- Overall responsibility for the construction site including compliance with time schedules and specifications
- Hire sub-contractors
- Procurement of equipment

Who does what?



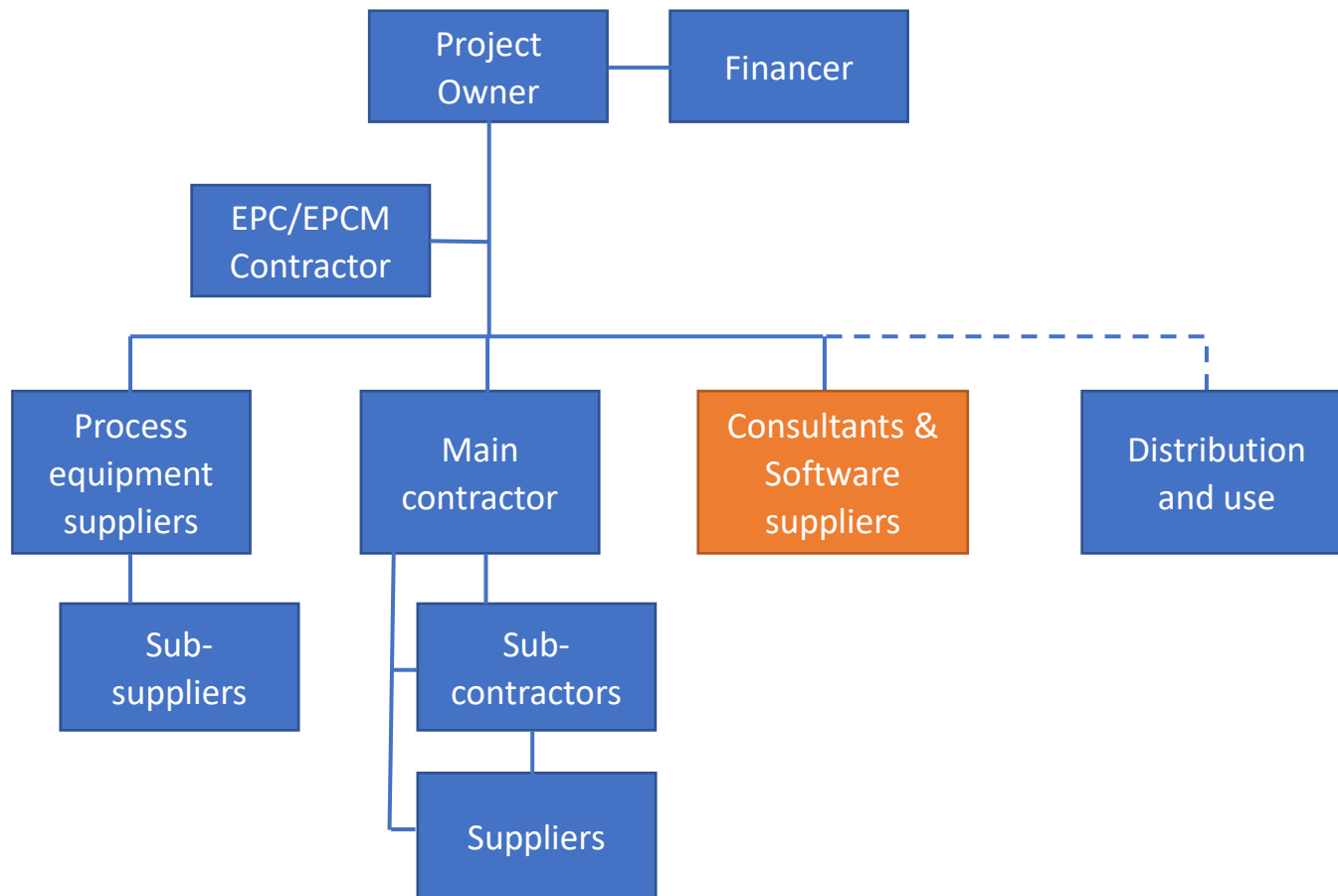
Sub-contractors

- E.g. Earthworks, Pipe & tank installations, Electricity installations, Heating, ventilation and air conditioning installations, Safety and security installations, Service and maintenance.
- Procurement of equipment.
- Big potential for regional companies.

Equipment used for on-site installations

- E.g. prefabricated building elements and metal constructions, drainage systems, cables, pipes, fittings, valves, tanks, reactors etc
- Potential to grow outside the regional market

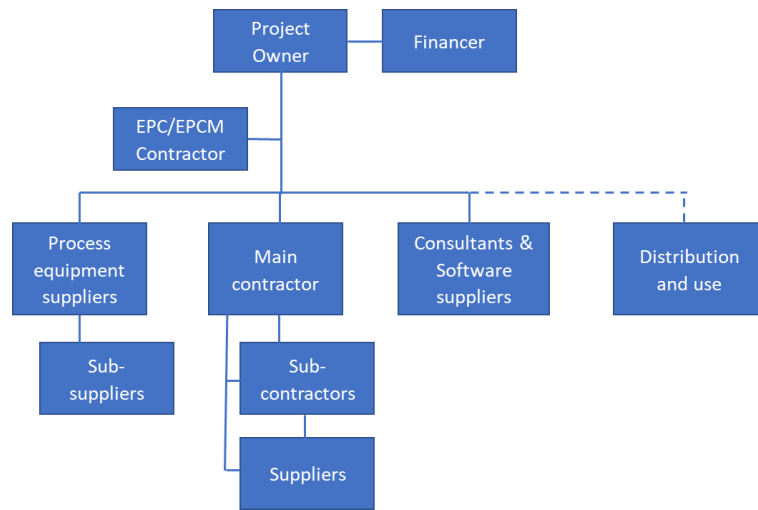
Who does what?



Consultants, Software developers

- Land planning processes, licensing, security permits and financing
- Local knowledge, technical, environmental & juridical expertise
- IT: Electrical systems and automation, large scale optimization and grid flexibility (AI, digitalisation)
- Safety solutions
- Training & education

How to enhance this development?



Companies

Understand the process

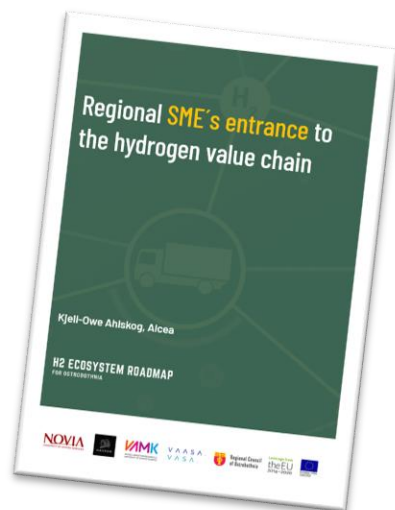
- What's your company's role in the value chain

Be active

- Identify and contact the actors that are responsible for the relevant stage in the project
- Stand out from the crowd

- **Commitment to local sourcing**
- **Business networks and Regional development companies**

Thank you



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