

Process scale-up from research to industry

VTT Process chemistry pilot in Bioruukki

Proof of concept

Is the idea feasible?

- At the first stage of a scale-up project, the viability of the initial idea is assessed.
- Unique equipment and multi-disciplinary teams to support feasibility assessment based on available lab scale data.
- Support in “downscaling” – sometimes development is not ready for scale-up and learnings need to be taken back to lab scale.

Benefit: Provide data for early validation of technical and economic feasibility

Proof of product

Does the product meet expectations?

- By combining expertise in chemistry, process technology, scale-up and feasibility assessments we support in demonstrating the suitability of materials for required applications.
- Proof of product can be implemented in variety of scales, depending on specific need of materials in the subsequent scale-up phases.

Benefit: Gain critical data on the technical and financial feasibility while ensuring the product matches your requirements

Proof of production process

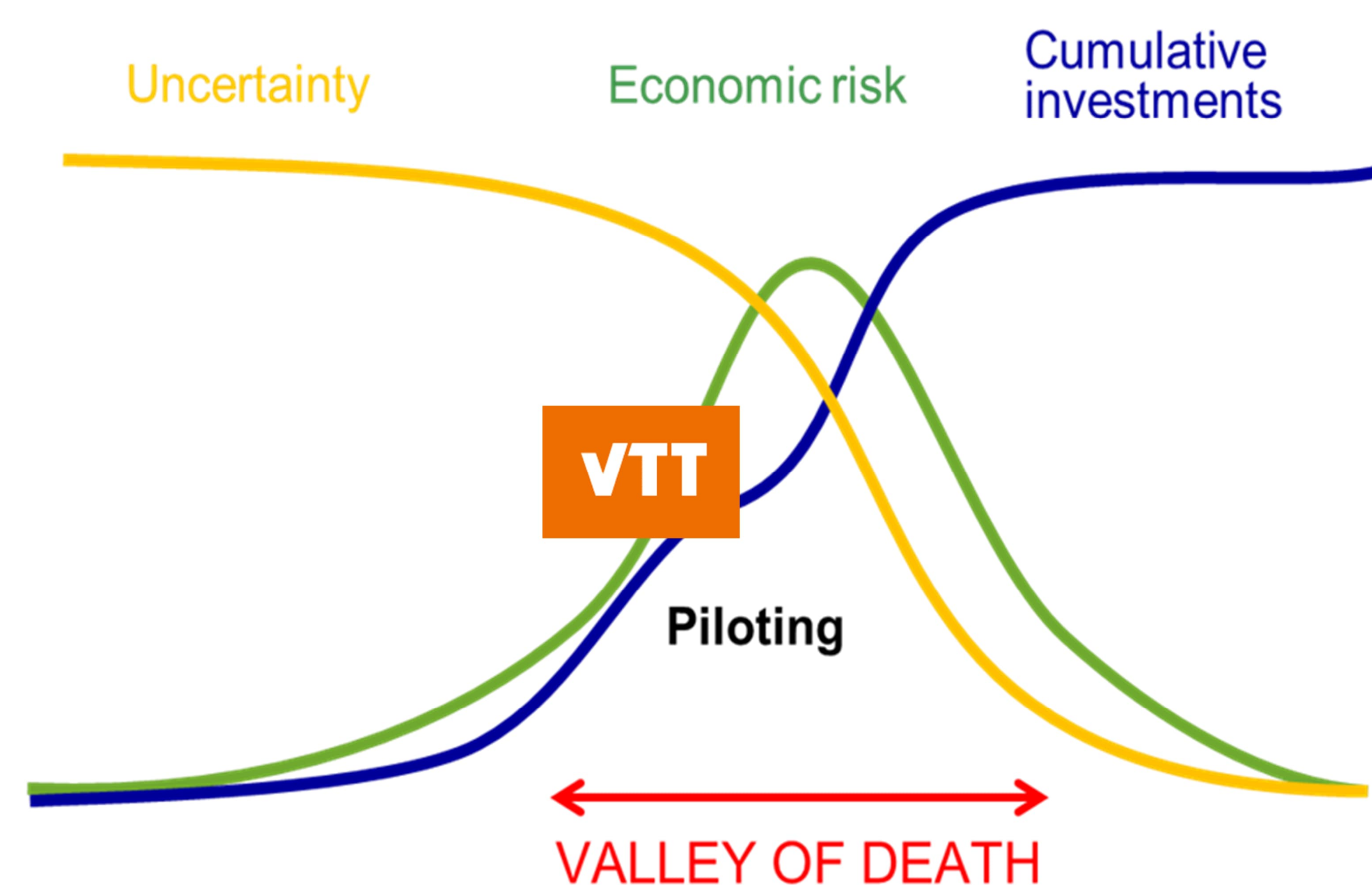
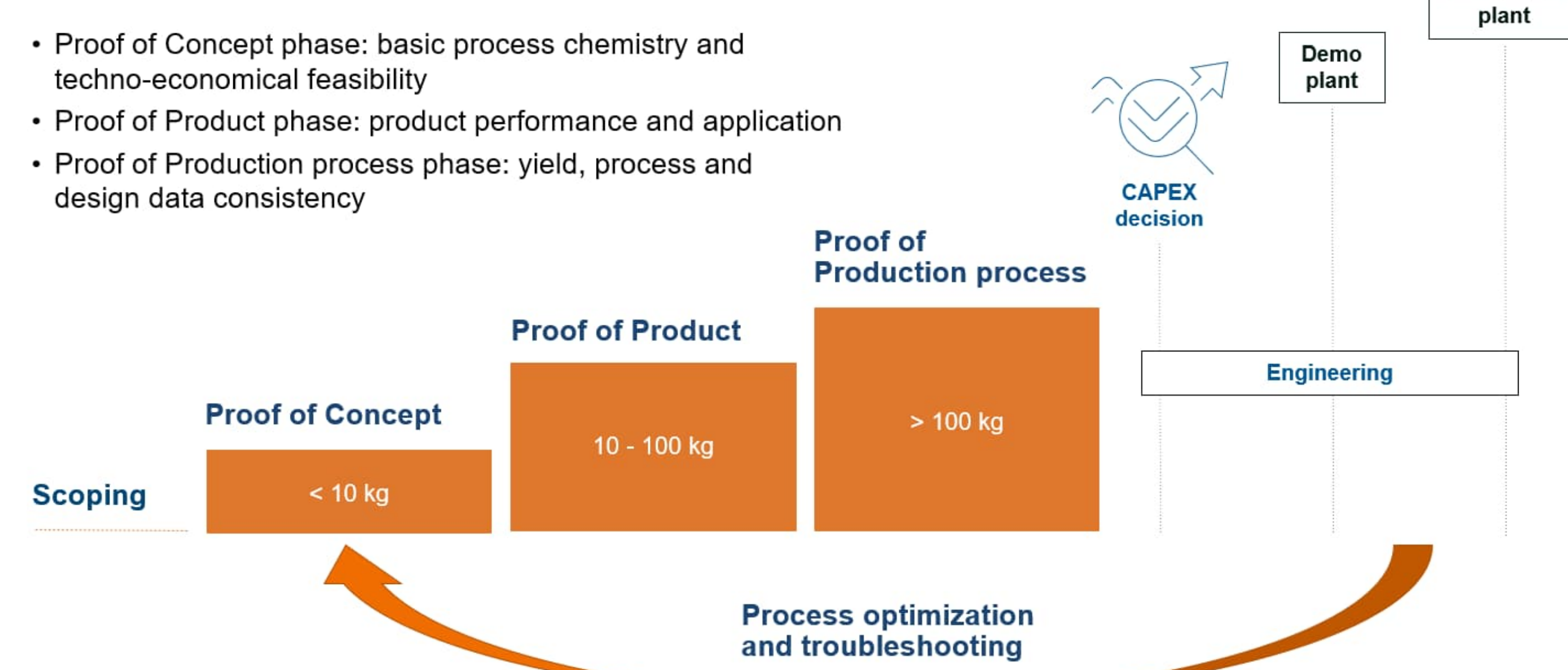
Can it be industrialized?

- Demonstrating the production process, unit processes, operations and product consistency with extended piloting.
- Generating process design data for further equipment and plant specific scale-up and engineering.
- Support in process optimization and troubleshooting once process concept is fixed

Benefit: Utilize the scaled-up process data for detailed process engineering, investment decision and operating cost optimization

Our service steps in scale-up

Manage uncertainty in process chemistry and product development investments with the gated project model:



VTT can support in bridging ideas and industrial implementation over the most technically and economically complicated project phases

Conclusions

- VTT Process chemistry pilot located at VTT Bioruukki (Espoo) is a novel, open-access pilot supporting research and industrial project development from ideas to industrial applications
- The piloting facility, equipment and highly skilled personnel can support projects according to their specific development stage and needs