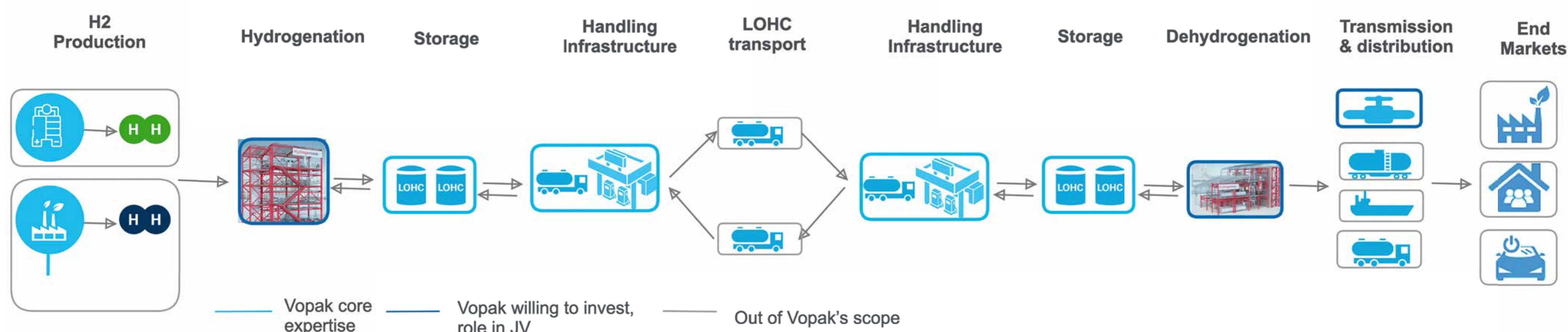


# Project Puffin: a hydrogen supply chain between Germany (Dormagen) and Rotterdam (Vopak terminal Europoort)



- The production capacity of the **pilot** plant in Rotterdam is **1,5 ton per day of H2**
- The technology is based on LOHC (Liquid Organic Hydrogen Carrier), developed by **Hydrogenious Technology** (Germany)
- The supply chain exists of activities in 2 locations:
  - **Dormagen** (Germany): hydrogen production (waste product) by Covestro and a Hydrogenation Plant in which the hydrogen is bound to the LOHC (Benzyl toluene, a K3 class product) in an exothermic process. The loaded LOHC is loaded on a **conventional truck** for transport to Rotterdam.
  - **Rotterdam**: a De-Hydrogenation Plant at an existing terminal in the port in which the hydrogen is released from the LOHC (endothermic process). The unloaded LOHC is transported back to Dormagen to be loaded again with hydrogen.
- The **LOHC is re-used** (and not consumed) in the process and will be used many times.
- The purity of the hydrogen released from the LOHC is **99,95%**.
- Goals of the pilot:
  - Demonstrate **an international LOHC chain** over land at an **industrial scale**
  - Demonstrate **stable output of hydrogen** (quality and volume)
  - Prove the re-use of **conventional (oil-related) assets** for the storage of LOHC in an existing industrial environment and create visibility in Rotterdam of this technology
  - Monitor and optimize the **performance** of the reactors for future upscaling
  - Investigate the lifetime and behavior of the LOHC components
  - **Continuous improvement** by means of Plan, Do, Check and Act circle (safety, operations, efficiency, training of staff, logistics (separating loaded and unloaded LOHC))
- Puffin is the **first building** block for further upscaling in subsequent LOHC projects under European IPCEI schedules.