

FEL Checklist

FEL-1: Feasibility Study and Initial Scoping

☐ Define the Strategic Fit

- ☐ Assess how the project aligns with both long-term and short-term company objectives, including market conditions, competitive positioning, and overall business strategy.
- ☐ Clearly document the expected business value, ensuring alignment with senior leadership's vision.

☐ Conduct a Preliminary Feasibility Study

- ☐ Perform initial evaluations of **technical feasibility**, **economic viability**, and **market demand**.
- ☐ Consider potential barriers such as regulatory challenges, resource availability, and technological constraints.
- ☐ Ensure a realistic high-level assessment of the project's likelihood of success.

☐ Form the Initial Project Team

- ☐ Begin assembling a small, cross-functional team with **representatives from business, operations, engineering, and finance**.
- ☐ Ensure team members are empowered to make decisions in their respective domains during this early stage of scoping and feasibility.

☐ Estimate High-Level Costs and Timeline

- ☐ Provide rough estimates for **capital expenditures (CAPEX)**, **operational expenditures (OPEX)**, and expected project duration.
- ☐ Include estimates for key project milestones and deliverables, setting the stage for a more granular breakdown in FEL-2.

☐ Identify Major Risks

- ☐ Highlight high-level technical, operational, financial, and regulatory risks that could impact project feasibility.
- ☐ Develop an **initial risk register** and rank risks by probability and impact, ensuring that key risks are flagged for more detailed analysis in FEL-2.

☐ **Present Go/No-Go Decision**

- ☐ Conclude FEL-1 with a formal presentation to key stakeholders. Provide a detailed report on strategic fit, preliminary feasibility, high-level cost estimates, and risk assessment.
- ☐ Ensure decision-makers have the information they need to approve or halt the project before proceeding to FEL-2.

FEL-2: Scope Development and Risk Mitigation

☐ **Refine the Project Scope**

- ☐ Refine the project scope by further developing the **technical solution**, ensuring that business, regulatory, and operational requirements are aligned.
- ☐ Create detailed **scope statements** that define project boundaries, deliverables, exclusions, and assumptions.

☐ **Conduct In-Depth Feasibility Studies**

- ☐ Perform detailed studies, including **technical feasibility**, **environmental impact assessments**, and **detailed market analysis**.
- ☐ Ensure that feasibility studies are backed by data, expert consultations, and risk-based scenario planning.

☐ **Create Process Flow Diagrams (PFDs) and Heat & Material Balances (H&MBs)**

- ☐ Develop detailed PFDs and H&MBs to establish the technical basis of the project. Ensure these documents accurately capture **major equipment**, **process flows**, and **operational conditions**.
- ☐ These deliverables set the stage for detailed engineering and are crucial for refining cost estimates and execution planning in FEL-3.

☐ **Develop Class 3 Cost Estimates**

- ☐ Transition from high-level cost estimates to **Class 3 cost estimates** with more precision. Incorporate detailed quotes from vendors and suppliers where possible.
- ☐ Include contingency allowances based on risk analysis to account for uncertainties in technical scope, materials, and external factors.

☐ **Update Risk Register and Perform Comprehensive Risk Assessment**

- ☐ Expand the risk register to include **more granular risks**. Conduct workshops with subject matter experts to identify risks related to engineering, environmental compliance, supply chain disruptions, and more.
- ☐ Use **risk quantification techniques** such as Monte Carlo simulations or decision tree analysis to better understand potential impacts on cost and schedule.

☐ **Prepare for Value Engineering**

- ☐ Conduct a value engineering review to identify cost-saving opportunities without compromising quality or project integrity.
- ☐ Ensure cross-functional teams participate, including engineering, procurement, and operations, to explore potential efficiencies and optimization strategies.

☐ **Finalize Scope and Freeze**

- ☐ Conduct a formal **Scope Freeze** once the scope is fully developed, preventing scope creep. Ensure all changes are logged and subject to rigorous change control procedures after the freeze.
- ☐ Communicate the frozen scope to all stakeholders, ensuring alignment before proceeding to FEL-3.

☐ **Present Go/No-Go Decision**

- ☐ Provide a detailed report on the refined project scope, updated cost estimates, comprehensive risk assessment, and value engineering outcomes.
- ☐ The decision should be informed by full alignment on scope, cost, risk, and readiness for further investment in FEL-3.

FEL-3: Final Preparation and Execution Readiness

☐ **Solidify Project Scope**

- ☐ Confirm that the frozen scope from FEL-2 is maintained and strictly enforced, preventing unauthorized changes that could jeopardize project integrity during execution.
- ☐ Conduct **scope validation workshops** to ensure no discrepancies exist between the planned scope and the detailed engineering work being finalized.

☐ **Develop Detailed Cost Estimates (Class 2)**

- ☐ Refine cost estimates to **Class 2** accuracy, incorporating detailed technical specifications, vendor quotes, and procurement agreements.
- ☐ Validate cost assumptions through market checks and contractual negotiations with suppliers to ensure cost certainty as execution approaches.

☐ **Finalize Technical Documentation**

- ☐ Complete all technical documentation, including **Piping & Instrumentation Diagrams (P&IDs), construction drawings, and equipment specifications.**
- ☐ Ensure all documents are reviewed, signed off by relevant stakeholders, and stored in an accessible project repository.

☐ **Develop a Comprehensive Execution Plan**

- ☐ Create a detailed execution plan outlining **project timeline, resource requirements,** and a detailed procurement and logistics strategy.
- ☐ Ensure that the execution plan integrates construction scheduling, permitting requirements, and workforce management.

☐ **Prepare Procurement Strategy**

- ☐ Identify and place orders for **long-lead items** to ensure they arrive on-site before construction begins. Confirm delivery timelines align with project schedules.
- ☐ Establish a procurement oversight team to monitor vendor performance and ensure contract compliance.

☐ **Review Risk Mitigation Plans**

- ☐ Reassess risk mitigation plans, ensuring all high-priority risks are addressed with clear, actionable contingency plans.
- ☐ Assign ownership of risk mitigation actions to responsible parties and monitor progress continuously.

☐ **Conduct Constructability Reviews**

- ☐ Engage contractors and construction teams early to conduct **constructability reviews**, ensuring that project designs are feasible and minimize potential construction delays.

☐ Address any concerns raised during these reviews before finalizing execution readiness.

☐ **Finalize Go/No-Go Decision**

☐ Ensure all stakeholders are aligned on cost, scope, and risk mitigation before presenting the final Go/No-Go decision to proceed with execution.

☐ The decision should be based on the readiness of all technical documentation, resource planning, and risk management measures.