# [1. PLANNING FOR START-UP: OVERVIEW OF RESEARCH (](https://www.construction-institute.org/planning-for-startup-overview-of-research)[RS121-1)](https://www.construction-institute.org/planning-for-startup-overview-of-research)

**Report Summary:** Project success depends not only on pre-project planning and well managed project execution, but also on a successful start-up. The importance of start-up planning is more critical than ever, as pressure to increase profits by reducing costs and demands for shorter project cycle times creates challenges for the business environment.

A Start-up Planning Model ([IR121-2](https://www.construction-institute.org/planning-for-startup)) was developed in this study to help plan start-up in a thorough, effective, and efficient manner. The model provides details of 45 startup planning activities organized by project phase. Some of the keys to successful start-up identified by the Start-up Planning Model include:

* Management commitment
* Start-up objectives
* A start-up execution plan
* ‘Quality gates’ or time-outs for analysis

**Key Takeaways:**

## (1) Ensure management’s commitment to start-up planning.

## (Project Phase: Prefeasibility through Construction)

* Define start-up objectives by taking a lead role in defining the project’s scope and goals.
* Ensure that plant operations and maintenance personnel are involved in the front-end engineering and detailed design phases to inform planning activities.
* Oversee the start-up planning process as the owner's project manager and take responsibility for its successful execution.

## (2) Identify start-up objectives.

## (Project Phase: Prefeasibility through Construction)

* Define start-up objectives by identifying specific goals and the scope of work to be achieved during the start-up phase.
* Establish clear expectations with stakeholders regarding which components, including key performance indicators (KPIs) and metrics, constitute a successful start-up.
* Develop a comprehensive project charter that outlines the purpose, scope, and overall approach for achieving the defined start-up objectives.
* Ensure alignment between the start-up objectives and overall project goals by integrating them into the project management plan.
* Review and update the start-up objectives regularly to reflect any changes in project scope or schedule.

## (3) Develop a start-up execution plan.

## (Project Phase: Prefeasibility through Construction)

* Develop a comprehensive start-up execution plan that integrates all start-up planning activities and serves as a guide for project stakeholders.
* Define schedule drivers and phase transitions to ensure effective work packaging and the recognition of unique project phases.
* Establish clear expectations with stakeholders regarding which components, including KPIs and metrics, constitute a successful start-up.
* Develop a comprehensive project charter that outlines the purpose, scope, and overall approach for achieving defined start-up objectives.
* Review and update the start-up execution plan regularly to reflect changes in project scope, schedule, or stakeholder expectations.

## (4) Develop ‘quality gates’ or time-outs for analysis.

## (Project Phase: Prefeasibility through Construction)

* Recognize the impact of start-up planning on project progress and schedule regular quality gates to ensure timely project completion.
* Treat each activity in the Start-up Planning Model as a quality gate (see [RS121-1](https://www.construction-institute.org/planning-for-startup-overview-of-research), Table 3) to maintain focus and momentum throughout the planning process.
* Establish clear expectations with stakeholders regarding which components, including KPIs and metrics, constitute a successful start-up.
* Schedule time-outs for analysis at specific points during the project lifecycle to ensure that the start-up planning stays on track and does not trail other project developments.
* Use quality gates as reminders for project and start-up managers to prioritize planning activities and avoid falling behind schedule.

## [(5) Tool: Planning for Start-up (IR121-2)](https://www.construction-institute.org/planning-for-startup)

## (Project Phase: Prefeasibility through Construction)

This tool is designed to:

* Highlight the importance of the start-up phase: Emphasizes start-up as a vital project phase by bridging construction completion and operational readiness for successful commercial outcomes.
* Outline a start-up planning model: Introduces a model that has 45 activities across eight project phases, focusing on a systematic approach to enhance predictability and efficiency.
* Detail key phases: Covers phases from requirements definition to initial operations, and includes activities such as risk assessment, resource allocation, and system turnover.
* Identify key quality gates: Includes critical checkpoints, or quality gates, to ensure thorough planning at each stage and verify readiness before proceeding to the next stage.
* Provide essential tools: Offers 26 tools to aid in planning, including the SuPER tool for tracking start-up readiness and an execution plan template to integrate the start-up steps.