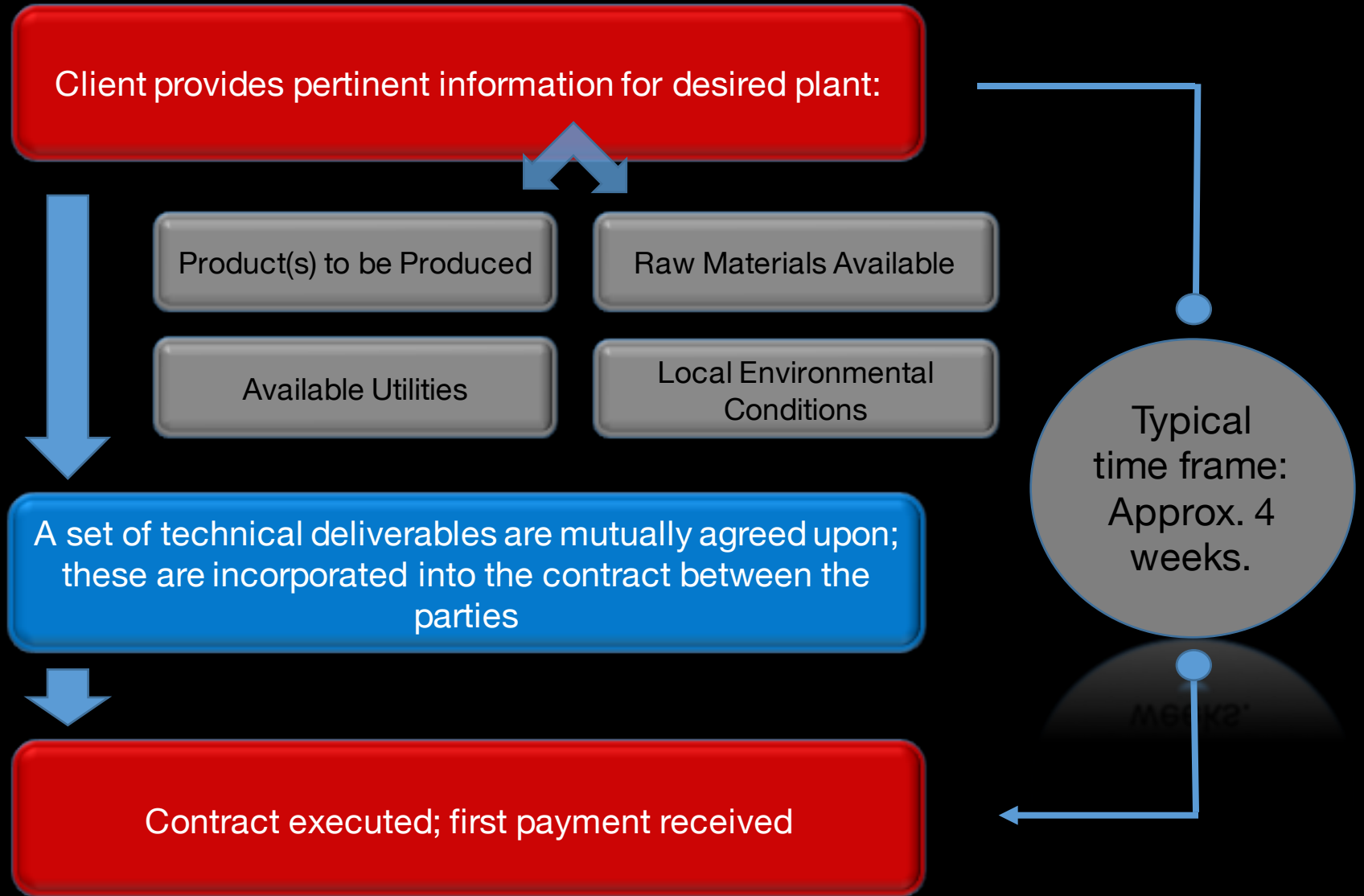


# PRE-PROJECT





# FIRST PHASE

PrimeStar delivers a simplified process description for review and approval

Upon approval and sign off by client, begin Process Design Package

The PDP begins with Heat and Material Balance (HMB). Upon completion, HMB delivered to client for approval. Time to complete HMB: 4 weeks - 3 months

From the HMB a process flow diagram is developed, including a detailed equipment list, raw material consumption, average utility consumption, detailed process description, start up and shut down procedures, control logic parameters, troubleshooting info

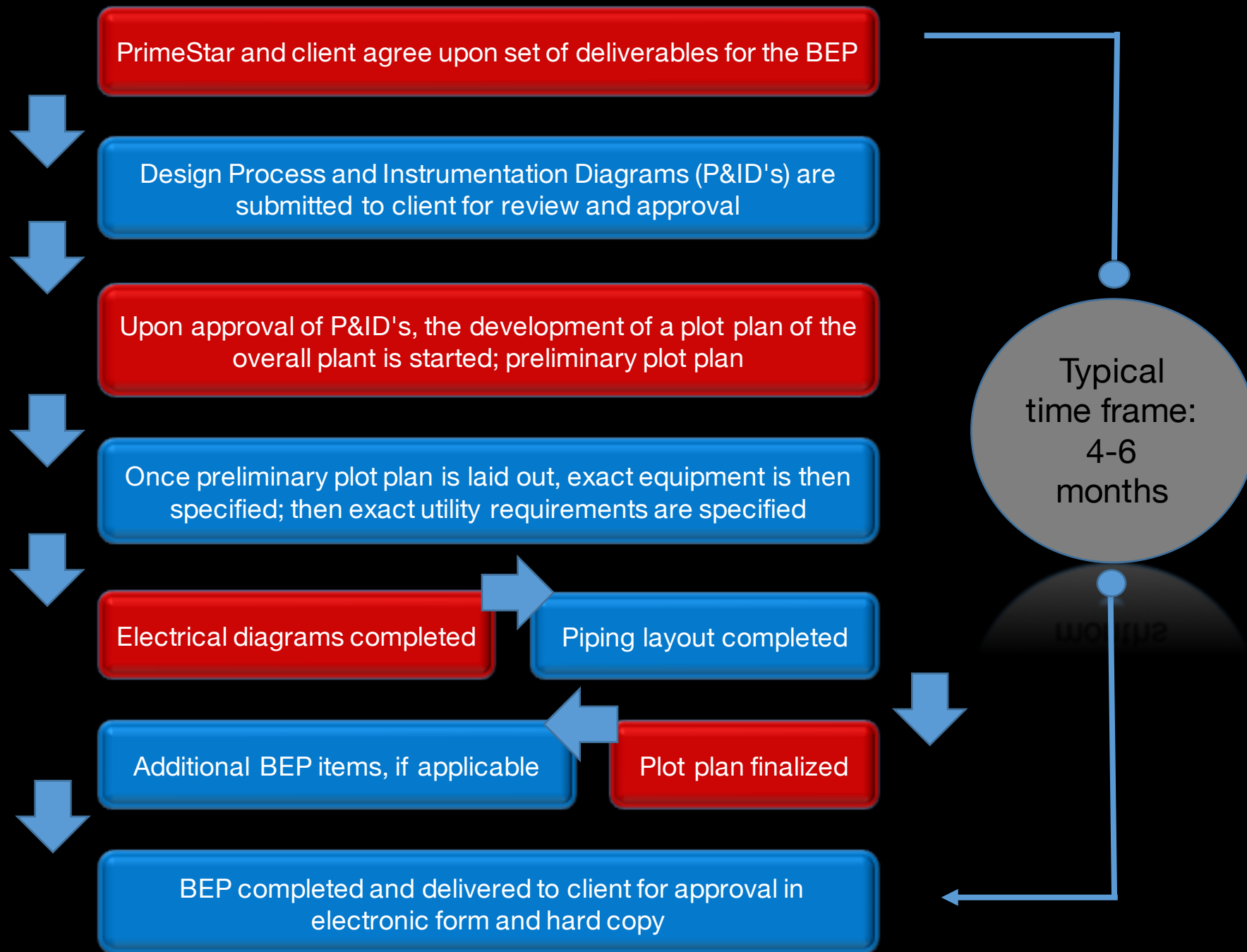
PDP completed and provided to client for approval


PDP is delivered electronically and both hard copy and CD/DVD

Typical  
time frame:  
3-6  
months



## SECOND PHASE





# PILOT PLANT PHASE (OPTIONAL)

If client desires a Pilot Plant, this phase will run concurrently with the PDP/BEP

## Typical Pilot Plant design goals:

- ✓ New process development
- ✓ Process demonstration & process economics
- ✓ Technical service and problem solving for existing or planned plant
- ✓ New product development
- ✓ Market development and assistance
- ✓ Operator and engineering training

## Engineering steps to complete Pilot Plant design:

- ✓ Complete process flow diagrams
- ✓ Complete heat and material balance
- ✓ Materials of construction
- ✓ Complete process and instrumentation diagrams
- ✓ Size and specify custom equipment
- ✓ Complete 3D layout drawing for major equipment
- ✓ Complete Pilot Plant Design Description Document

Typical  
time  
frame: 6-9  
months