# Next phase

Update the two following

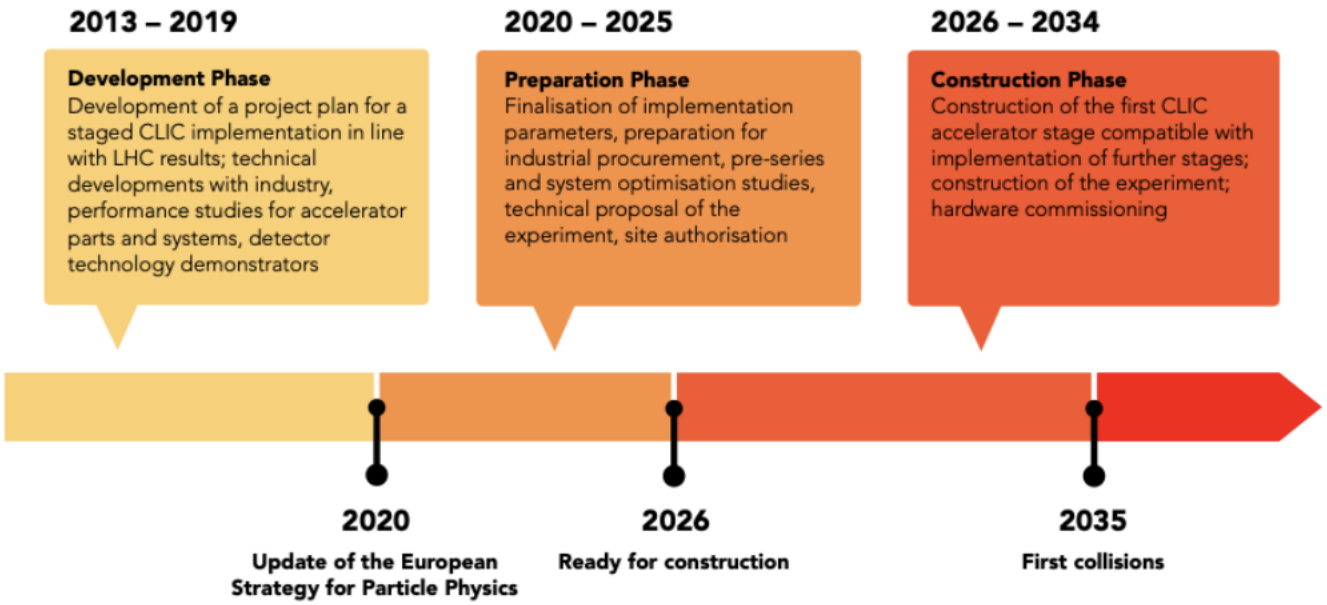


**Table 32**: Main CLIC accelerator objectives and activities in the next phase.

| Activities | Purpose |
|---|---|
| **Design and parameters** | |
| Beam dynamics studies, parameter optimisation, cost, power, system verifications in linacs and low emittance rings | Luminosity performance and reduction of risk, cost and power |
| **Main linac modules** | |
| Construction of 10 prototype modules in qualified industries, two-beam and klystron versions, optimised design of the modules with their supporting infrastructure in the main linac tunnel | Final technical design, qualification of industrial partners, production models, performance verification |
| **Accelerating structures** | |
| Production of $\sim 50$ accelerating structures, including structures for the modules above | Industrialisation, manufacturing and cost optimisation, conditioning studies in test-stands |
| **Operating X-band test-stands, high efficiency RF studies** | |
| Operation of X-band RF test-stands at CERN and in collaborating institutes for structure and component optimisation, further development of cost-optimised high efficiency klystrons | Building experience and capacity for X-band components and structure testing, validation and optimisation of these components, cost reduction and increased industrial availability of high efficiency RF units |
| **Other technical components** | |
| Magnets, instrumentation, alignment, stability, vacuum | Luminosity performance, costs and power, industrialisation |
| **Drive-beam studies** | |
| Drive-beam front-end optimisation and system tests to $\sim 20$ MeV | Verification of the most critical parts of the drive-beam concept, further development of industrial capabilities for L-band RF systems |
| **Civil Engineering, siting, infrastructure** | |
| Detailed site specific technical designs, site preparation, environmental impact study and corresponding procedures in preparation for construction | Preparation for civil engineering works, obtaining all needed permits, preparation of technical documentation, tenders and commercial documents |

# New elements

This chapter will need to cover design and technology work for the next period (see table earlier), but also:

- The environmental studies and CE studies needed (learn from the FCC) – good confidence in ground conditions but shafts and caverns to be fixed – 2-3 years
- Preparation needed at CERN for infrastructures, test-facilities and expertise.  Longer term
- Related: A budget estimate and personnel estimate is also needed for this phase. This is difficult but is partly covered in R&D table and operational personnel estimate.
- Consider also extras for Physics Beyond Collider beams  (maybe not in this chapter but mentioned here for future work)