



# ESU Documents: CLIC accelerator

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# Two main supporting documents

## **CLIC Project implementation Plan 'PiP' (160pp):**

**Machine parameters, cost, power, site, staging, construction schedule, summary of main tech. issues, preparation phase summary**

## **CLIC preparation-phase (2020-2025) plan (60pp):**

**Critical parameters, status and next steps - what is needed before project construction, strategy, risks + mitigation**

**+ executive summary – joint accelerator + CLICdp**

**+ supporting documents in EDMS etc.**

**NB: the official submission to ESU may be very short (15pp?)**



# PiP outline with responsables

	A	B	C	D	E
1	PiP				
2	Chapter	Section	Pages	Comments	Responsible
3					
4	<b>Intro</b>		3		<b>Steinar</b>
5				intro, context, recall CDR, describe document	
6	<b>380 DB</b>		30		<b>Daniel</b>
7		Injectors	2		Steffen
8		DR	2		Yannis
9		RTML	2		Andrea
10		ML	3		Daniel
11		BDS	3		Rogelio (Edu)
12		MDI	3		Lau
13		Post. Coll. and beam-dump	2	here, also technical study	Rogelio (Ryan&Lau)
14		Integrated studies	3	simulations, include operation/energy scanning, machine p	Daniel
15		DB acc	2		Steffen (Roberto&Avni)
16		DB recomb	2		Roberto (Andrea&Edu)
17		Beam transport	2		Andrea
18		Decelerators	2		Daniel
19		Dump lines	2		Andrea
20					
21	<b>380 KL</b>		7		<b>Daniel</b>
22		Introduction and parameters	2		Daniel
23		Main linac design	3		Daniel
24		Main Linac technical unit	2	Module and RF unit (Klystron, pc, RF)	Carlo
25					

# PiP outline with responsables

	A	B	C	D	E	F
26	<b>Higher energies (technical description)</b>		10		<b>Daniel</b>	
27		Introduction, and example parameters	2	"1.5 TeV included in 3 TeV" (1DB to 2 DBs)	Daniel	
28		upgrade from Klystron version	2		Daniel	
29		Impact on systems	2	ML, sources, DB, ... "no problem!"	Daniel	
30		Progress on 3 TeV BDS?	2	improvements on 3TeV design	Edu	
31		Energy upgrades with future technologies	2		Erik	
32	<b>Technologies</b>		60	<b>Hardware and technical studies</b>	<b>Nuria</b>	
33		Sources and injectors	3	MB and DB	Steffen	
34		Magnets	3	including powering	Jeremie	
35		PETs and all acc. structures	3	refer to "performance" chapt, both DB and K	Nuria (Steffen, Alexei, Igor)	
36		Klystrons	3	L,X,DB,inj, incl new developments	Olivier (Steffen, Igor, Gerry)	
37		Modulators	3		Olivier (Davide, Gerry)	
38		Module	3	K and DB machine	Carlo	
39		Pulse compressors	3	both Injectors and Klystron machine	Igor	
40		Vacuum	3		Cedric	
41		Instrumentation	3		Thibaut	
42		Beam transfer	3		Mike	
43		Beam interception devices	3	collimators, photon absorbers DR	TBD	
44		MDI	3	technical studies	Lau	
45		Beam dumps	3	technical studies (what about post collision line?)	TBD	
46		Controls, timing, feedback	3		Mick	
47		Machine prot	3	technical studies	Michael	
48		Alignment	3	include survey	Helene	
49		Stabilization	3		Kurt	
50		Ground motion measurements	3	sensor development	Laurent	
51		Wigglers	3		Paolo	
52						

# PiP outline with responsables

	A	B	C	D	E
53	<b>CEIS</b>		20		<b>John</b>
54		Civ. Eng	3		John
55		Electricity supply	3		Davide
56		CV	3		Mauro
57		Transport and Installation	3		Ingo/Michael
58		Safety systems	3	incl. enviroment and access	Simon
59		Radiation studies	3		Markus
60		Cryo	3	in case of SC solenoid, check	Dmitri
61	<b>Implementation</b>		10		<b>Steinar</b>
62		Schedule and staging	3		Marzia
63		Cost	3		Steinar
64		Power	3		Alexej
65		Key issues (studies not complete)	2	lssues for next period, risks (pointing to other document)	Daniel (Steinar)
66	<b>Performance</b>		20		<b>Roberto</b>
67		Introduction	2	Overview, include reference to SLC	Daniel (Roberto, Phil)
68		Drive Beam	3	CTF3	Roberto
69		BDS beam dynamics	3	ATF2, FFTB	Rogelio
70		Main linac beam dynamics	3	FACET+ELETTRA	Andrea
71		RF systems	3	Swiss FEL, X-boxes, Compact light, ...	Walter (Nuria, Gerry)
72		DR	3	Light sources whatever	Yannis
73		Availability studies	2	refer to other big projects?	Odei
74		Other effects	2	magnetic fields, what else?	Edu, Daniel
75	<b>SUM</b>		<b>160</b>		
76					



# PiP procedure + timeline

## Editorial team met December 6

Document outline + contributors identified

Technical aspects: latex template, pointers to CDR – M. Draper, M. Aicheler

## Contributors' email list set up

Helpful instructions to contributors about to be sent

## First draft of every section due April 14<sup>th</sup>

Review all sections at CLIC Project Meeting, April 24<sup>th</sup>

## Final polished sections due August 31

→ editing, prepare executive summary with CLICdp

→ final input to ESU short document

## All final documents ready December 15<sup>th</sup>

# Preparation phase 2020-25

60-70 p document

- Intro, motivation - introduce TDR as goal
- Outline of programme
  - Cost, power drivers and overview of work on them (to identify priorities)
  - Technical areas and industrial network behind, describe documentation to be prepared
  - System-tests
  - Design effort and performance studies
  - Site, CE, infrastructure – describe documentation to be prepared
  - Project Organisation and governance
- Identified key partners, common projects and related facilities/projects
- Budget estimate, personnel estimate (increase engineering) with CERN and partner contributions, list of suggested “co-operation plans”
- Expected results (TDR outline)

Work ongoing to prepare this, but team not in place, need before Easter



**Thanks in advance to all  
contributors!**

**This is a vital process for making  
the case for CLIC**