



WP2 Summary & Planned Activities

3rd CompactLight Midterm Meeting,
Virtual Glasgow, 18th June 2020

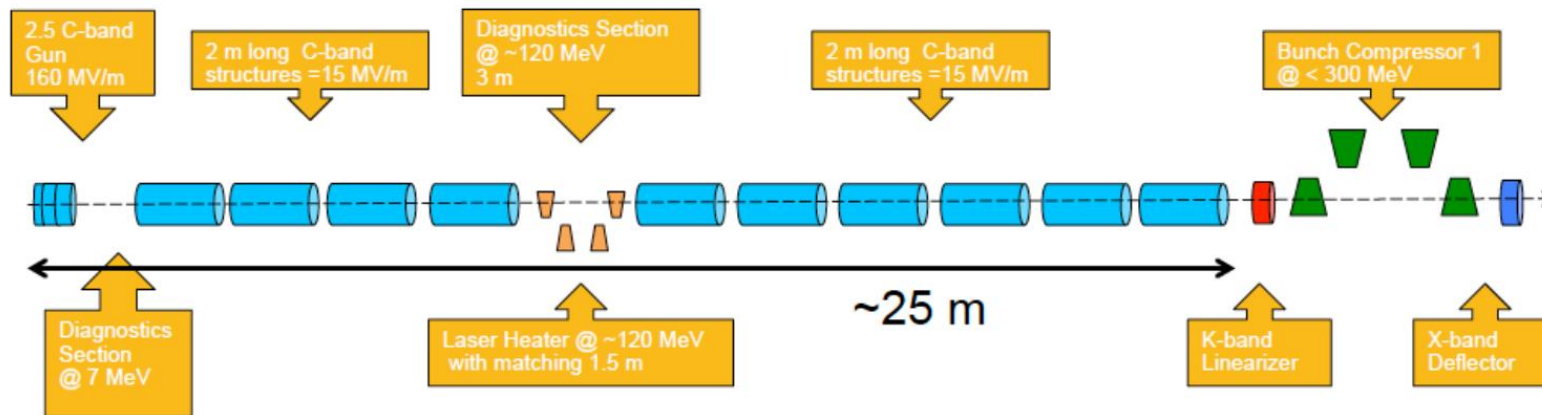


Jim Clarke, STFC Daresbury Laboratory

WP2 FEL Science Requirements and Facility Design

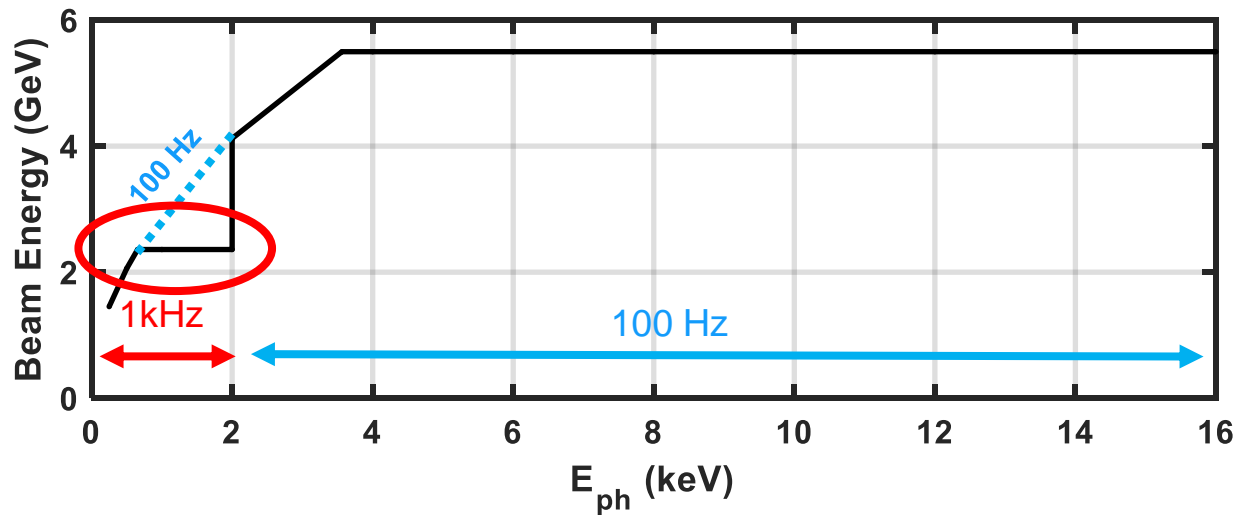
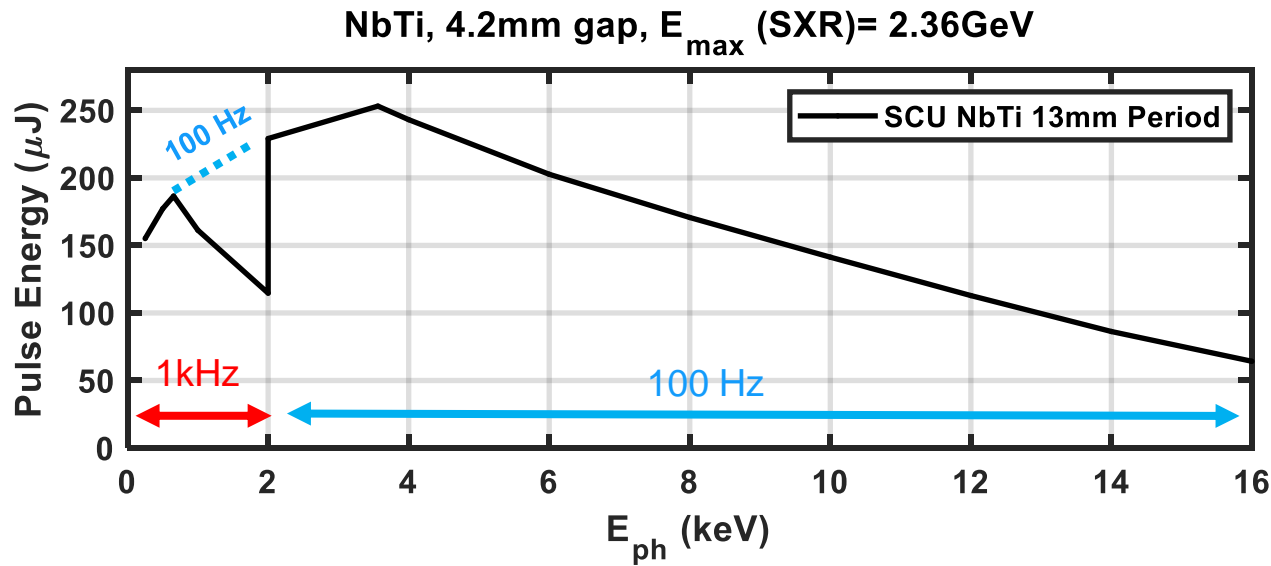
- WP2 only have one remaining deliverable
- **Deliverable 2.3** - The **conceptual design report** for a Hard X-ray FEL facility, including cost estimates, with options for Soft X-ray FEL and Compton Source, **(31/12/21)**.
- **Task Leader – Neil Thompson, STFC Daresbury Laboratory**
- **This is the primary deliverable for CompactLight**

- One injector for all the operational modes (HRR and LRR)
 - 2.5 C-band gun with 160 MV/m cathode peak field => longer drift for diagnostics
 - Copper cathode and TiSa Laser
 - Same gradients 15 MV/m in the 2 m long C-band structures, max gain 30 MeV/structure
 - Same diagnostics positions (@ gun exit 7 MeV and in the drift parallel to the LH @ 120 MeV)
 - Same beam parameters at the linac exit
 - Matching with LH to be determined

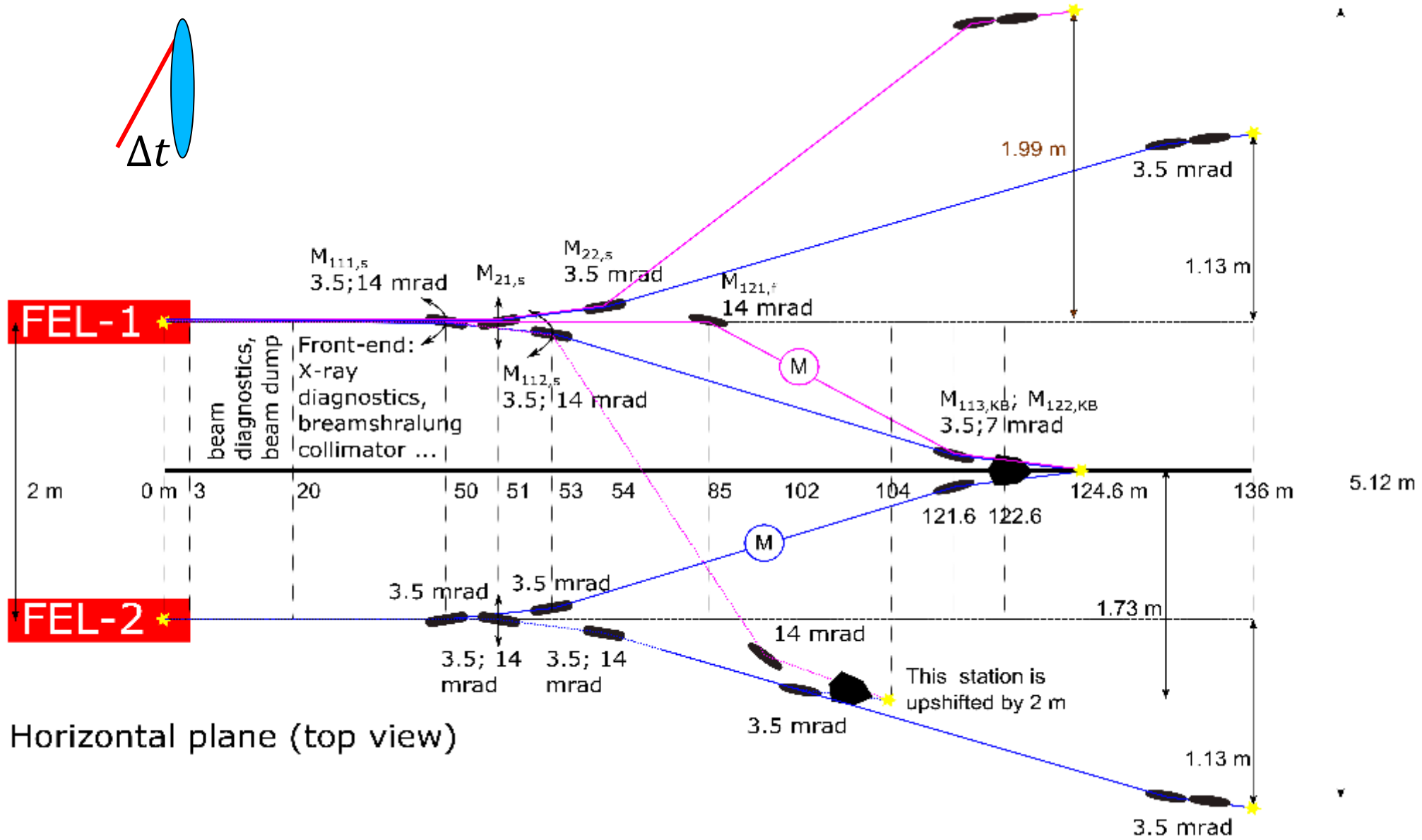


- Optimal BC1 input energy (=> and position) to be determined
 - Without Velocity Bunching
 - With Laser Heater less than 2 m long
 - K-band Linearizer just before the BC1, X-band RFD downstream BC1
 - Same beam parameters at the BC1 exit

Confirmed Baseline is Full C-Band Injector





Neil Thompson – **2.35GeV @ 1kHz** is required – please use this value in your simulations



Vitaliy Goryashko – **Need to decide separation between FELs**

2021 CDR Proposed Schedule

Date	Task/Milestone	Responsibility of..
March 31	ALL WP3, WP4, WP5 deliverables now submitted to EU and technical work complete. <i>All WPs start CDR writing where possible!</i>	All
June 30	All technical work complete and WP reports submitted	All
July 30	1 st complete draft which includes all material submitted by WP leaders	All
During August/September	Cross checking for consistency, errors and omissions	All
	Layout editing, style editing, editing for consistency	WP2
September 30	1 st complete edited draft.	WP2
During October	Corrections	WP2 + All
October 30	2 nd complete edited draft	WP2
December 1	Submission to EU (pre-Christmas)  	WP1
January 2022	Online publication (and printed copy?) once approved by EU.	WP1/2
Later 2022	Journal submission	WP1/2



Thank you!

CompactLight@elettra.eu

www.CompactLight.eu



CompactLight is funded by the European Union's Horizon2020 research and innovation programme under Grant Agreement No. 777431.

