



WG-1: Cost Reduction Studies

Nick Walker
John Carwardine
Tetsuo Shidara

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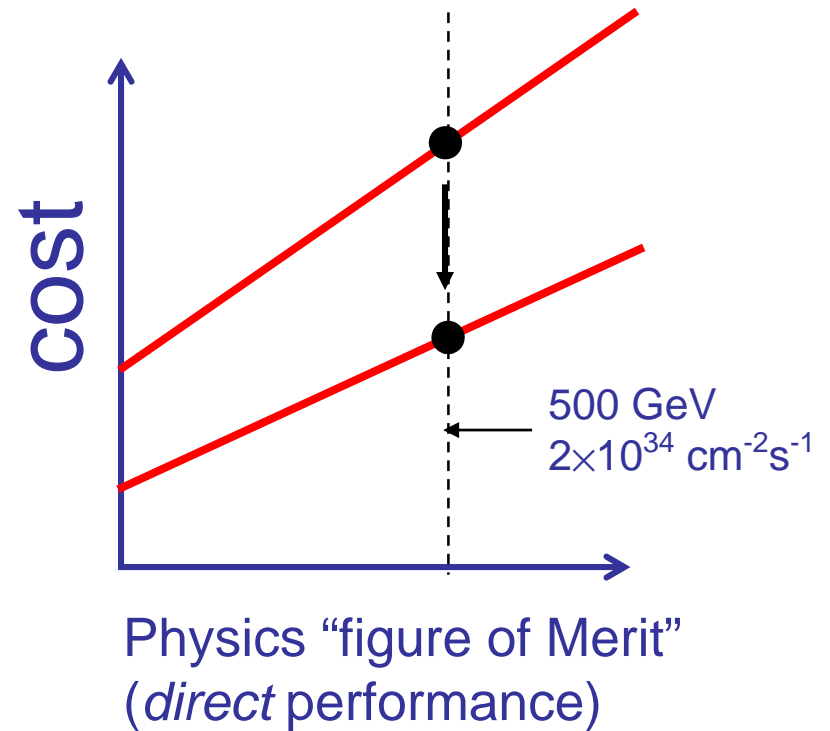
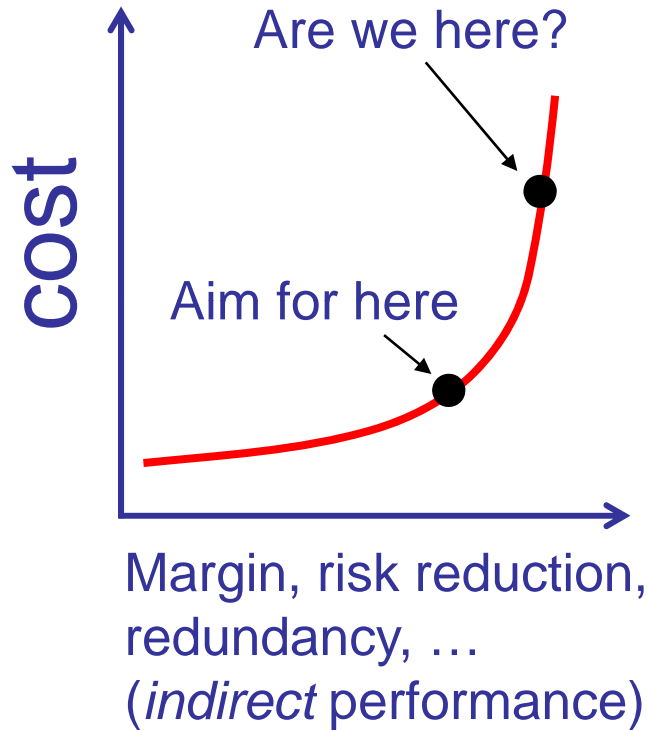
Why Are We Here?

- January EC meeting agreed that “Cost Reduction” should be a strong theme of workshop
- Premise: the cost of the ILC must be reduced by 2010/12.
 - **Important to show we have gone through the process**
 - **The idea of ‘the minimal machine’**
- Expected low(er) attendance for Sendai meeting
 - **Required (complete) technical expertise not available to us**
 - **What we could really achieve has been discussed at several ‘planning meetings’**
 - **Decided to approach initial discussions / brainstorming in ‘small focused groups’**
 - Not necessarily ‘specific technical experts’ but hopefully knowledgeable in a broad-sense
 - Part of our job is to identify ‘who to ask’ for information (see later)
- An experiment!
 - **A forum for discussion (with a method to keep us focused)**

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What we must do



Minimum cost machine

Understand the performance derivatives

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Our Mission (Approach)

- Begin discussions towards specifying “Cost Reduction Studies”
 - **Initial list (~120 items) has already been generated**
 - **Input / recommendations / advice to PM**
- An experimental approach to promote new and re-newed debate
 - **Ad hoc group (no formal mandate)**
 - **Keywords: Brainstorming, Triage**
 - **Open to all who are willing to engage positively in this process**
 - And who feel they can contribute.
- Each CRS should be considered as an exercise
 - **Promote innovating discussion on items**
 - **Educational (for those in study groups)**
- WG-1 is the start of a process which will conclude at the end of the year
 - **LCWS (November) is an idea goal**



What we will not do

- Propose design modifications which will result in major cost savings
 - We can only hope to open the discussions and perhaps focus / organise the proposal list
 - Ask questions for those items which look interesting
 - Identify what “studies” we think need to be made
 - And by whom
- Note that in many cases we are not “the experts”
 - Our TAG leaders must (and will) be involved
- Identifying ‘expert resources’ (or lack of them) should also be high on our discussion list
 - But this does not stop *this group* of people opening the door to possible fruitful discussions.



Ultimate Goal (TD Phase I & II)

- Produce a set of ‘options’ and engineering solutions with associated
 - **Cost increments**
 - **Risk/impact analysis**
- Have enough information and ‘options’ to be able to discuss exactly what machine we should build
 - **When we know the physics case**
 - **When we know the actual site**
 - **(Some indication of what the world is willing to pay)**
- An open discussion including the Phys & Det groups, when making ‘final decisions’ about the machine to propose
 - **We must have all the relevant information at hand for such discussions**
 - **Today is the start of the process to provide that information.**



The (Initial) Approach for WG1

- Loosely based on “Open Space” Approach
 - **But modified for our purpose**
- Split into study groups of approx. 4, each with one “convener” to act as lead.
- Groups will have access to the CSR (presented by John C.)
- Group coordinator will be given access to VALUE estimate roll-up
 - **A summary of the estimate, not the complete estimate (too detailed for our high-level discussions)**
- The goal for each group (independently)
 - **Identify “top 10” items, i.e. those that you consider should be explored further or have merit**
 - **Identify the “bottom 10”, those that you think are a complete waste of time**
 - **Attempt to assess your choices using ‘category questions’**
 - **Prepare a short presentation of your choices (incl. justification) for discussion Wednesday PM**
- Special group (Ewan) on ‘central injectors / staging’



Rules and Comments (1)

- Make sure you generate your list of 10. Coordinator has 'casting vote' if discussion is deadlocked
 - **But should be noted in close-out**
- Do attempt to make a comment for each category, even if it is 'not applicable'
- Do not try to rank or prioritise your chosen ten.
 - **Unless there is a clear and obvious consensus in your team.**
- Keep your close-out summary for Wednesday short, but provide full information to WG-1 organisers (NW, JC, TS) so we can consolidate all the input
 - **And make some analysis**



Rule and Comments (2)

- If you can, make recommendations for further studies that need to be made
 - **And by whom**
- Don't feel you need to quantify and pass "expert judgement" on all
 - **We are not necessarily the experts**
 - **Ignore items if you really have no 'feel'**
 - **Encouraged to say 'that sounds interesting but I need more information'**
- Many items you may find redundant or related
 - **Please comment: part of exercise is to group and consolidate list**
 - **Can certainly be used as a criteria for a bottom-10 list**
- Note that scope of items in list has a broad spectrum
 - **Ranging from 'shallow site study' to 'adjusting return water temperature'**
 - **(One of the category questions is to comment on this scope)**
 - **For this initial pass, ignore the obvious correlations between these things.**



Primary Cost-Reduction Categories

1. Estimate Capitol Cost Saving
 - *Is this a cost reduction at all?*
2. Direct physics parameter Impact
 - *Initial capability*
 - *Maximum Reach*
3. Staging → SG-1
 - *Can impact be later mitigated with an “upgrade”?*
4. Risk impact
 - *on reaching nominal performance*
5. Scope of proposed modification
 - *Major layout change to plug-compatible component change*
6. Technical systems overhead
7. Impact on operations
8. Machine reliability
9. Scope of necessary R&D programme
10. Impact on TD phase planning
11. Impact on construction schedule
12. Site dependency issues
13. Initial study effort (primary required resources)

In the form of questions to be quantified (where applicable)

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