



ILC PROJECT CFS PLANNING PROCEDURE in Asian Region

- Tentative Analysis by GDE-CFS Asian Regional Team -

Presented by

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Asian Regional Team

Consultant

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Design
Works

Review & Assist
for CFS Activities

KEK

Plant & Facilities Department
Site Investigation Group

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Technical Review & Comments

Collaboration

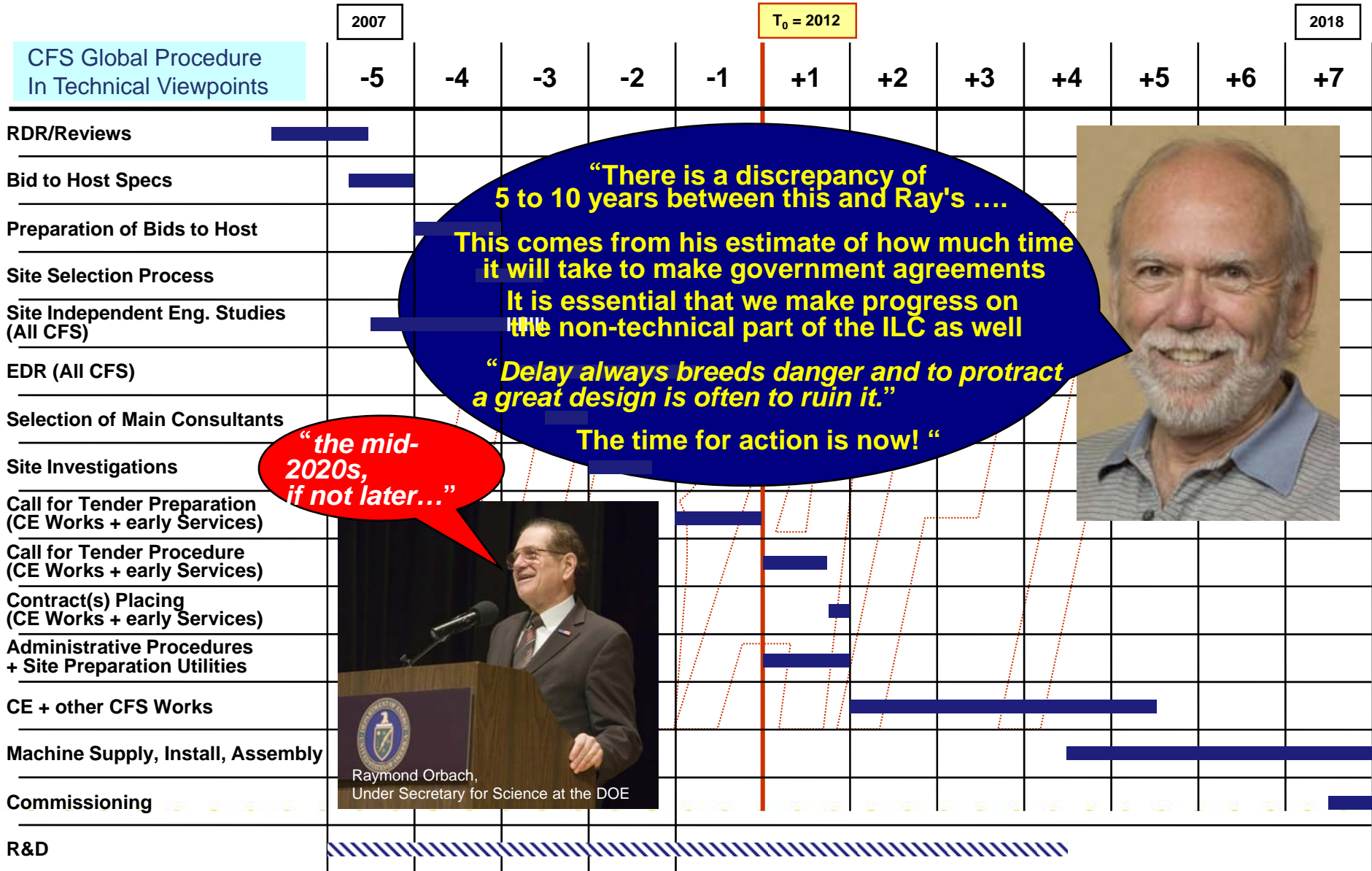
Linear Collider Forum of Japan

Japanese Society of Civil Engineering



After Beijing

- How to see the present phase?



“There is a discrepancy of 5 to 10 years between this and Ray's
 This comes from his estimate of how much time it will take to make government agreements
 It is essential that we make progress on the non-technical part of the ILC as well
 “Delay always breeds danger and to protract a great design is often to ruin it.”
 The time for action is now! “

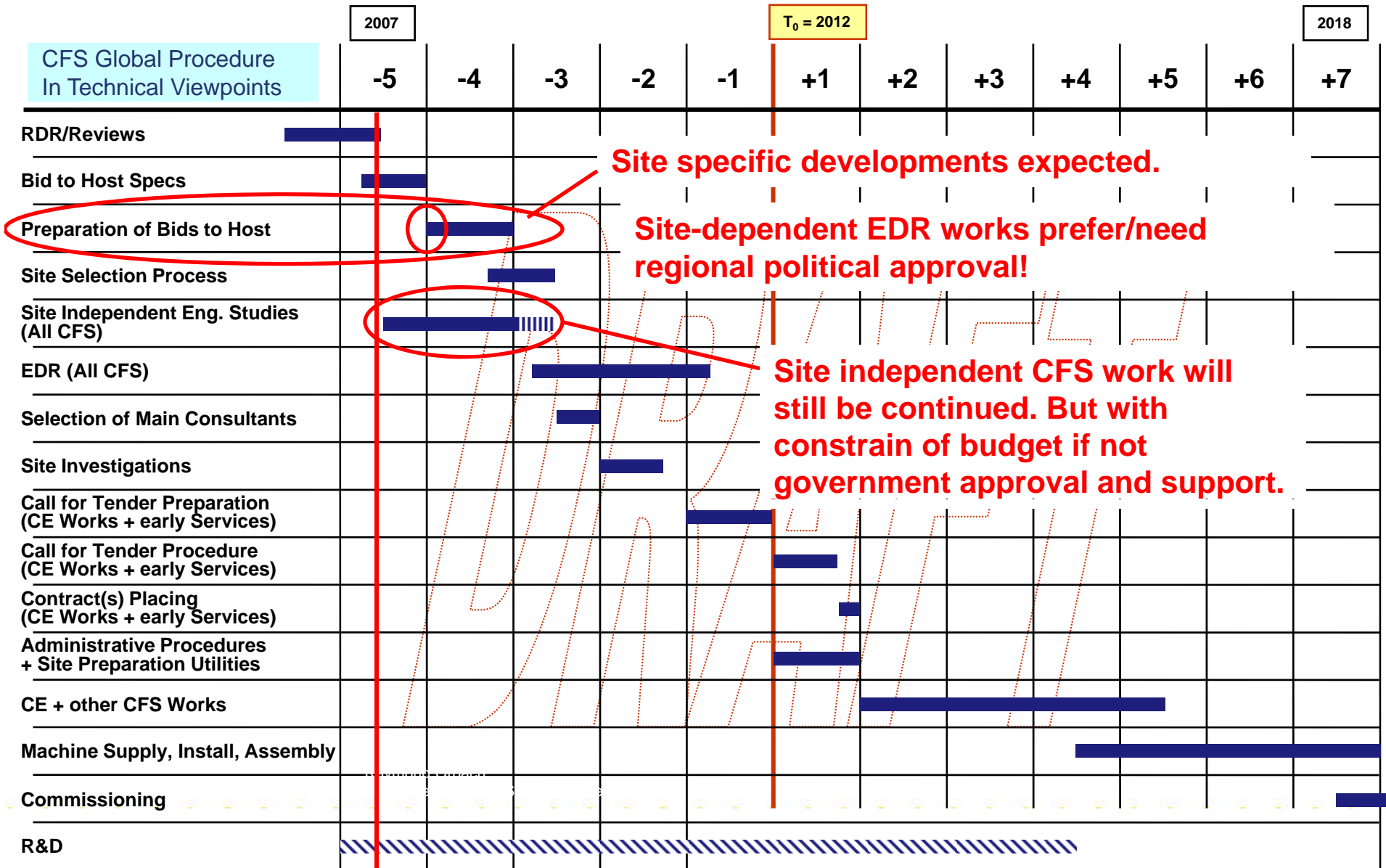


“the mid-2020s, if not later...”





How can Asian CFS EDR phase start?





CURRENT PROJECT STATUS

1. SITE SELECTION

- Not yet selected. Sample Site is not necessarily the final site
- Site selection actions can be started only after government approval

2. GOVERNMENT APPROVAL

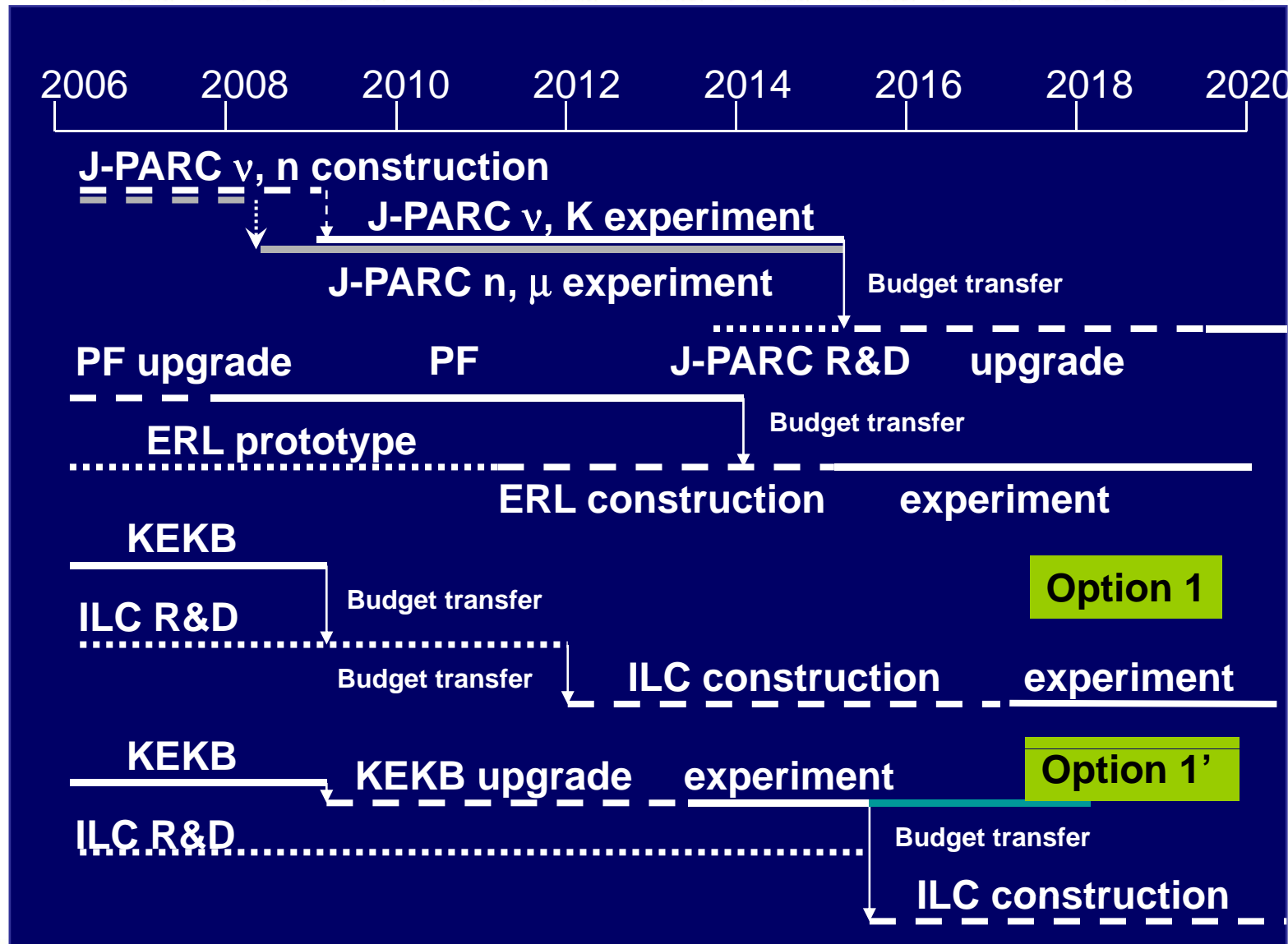
- Not yet granted. Resources for further R&D and engineering development prior to the approval is restricted
- Presumably, two step approvals
- Primary approval by the Ministry for exercise of site selection
- Final approval by the Cabinet and Parliament for running to host and when selected as the host country, to execute investigation, engineering and construction

3. KEK PROJECT

- ILC will be followed regionally ongoing projects...

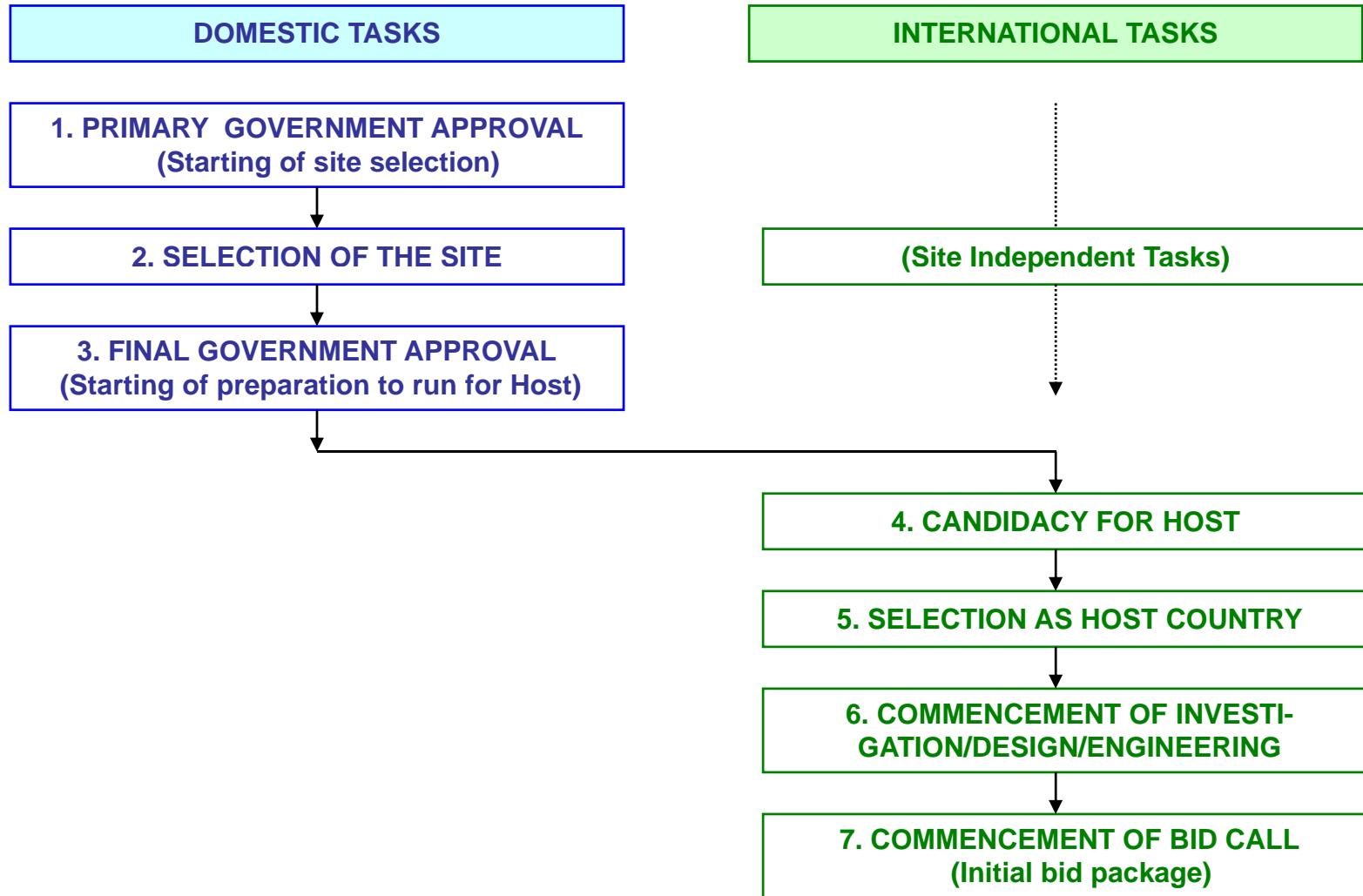


KEK ONGOING & FUTURE PROJECTS



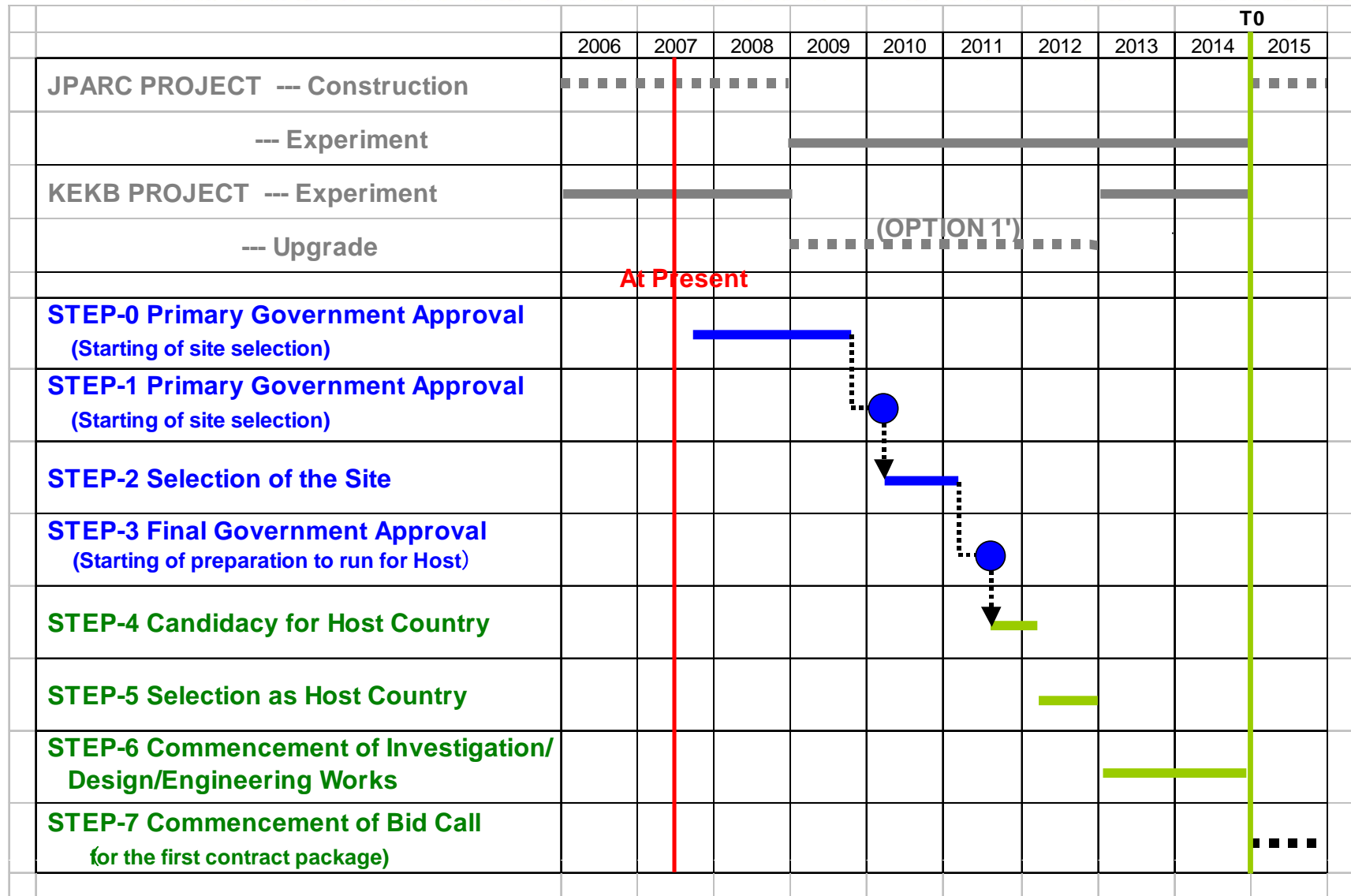


MAJOR CFS MILESTONES



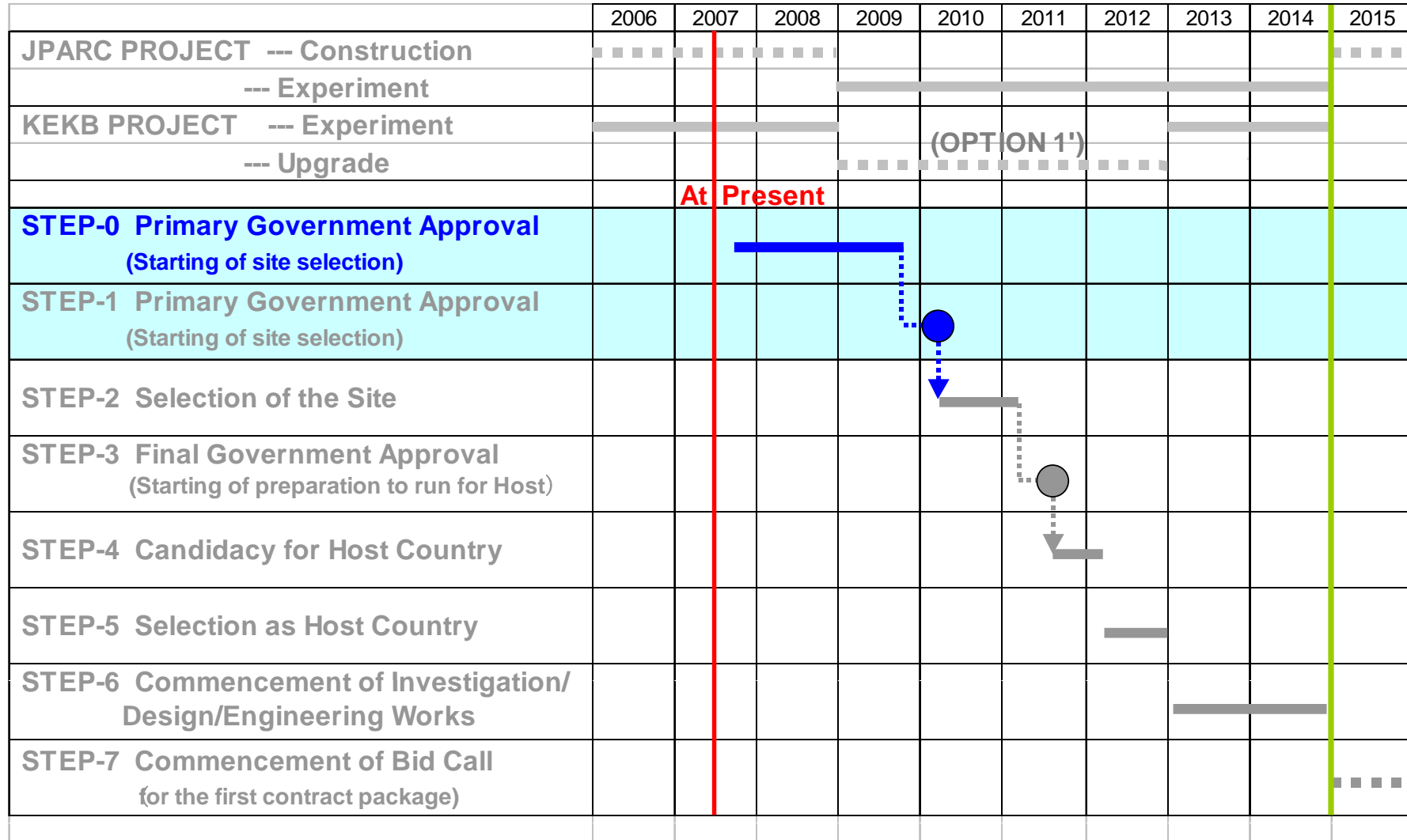


TIME LINE OF MAJOR CFS MILESTONE





STEP 0-1 Until Government Approval





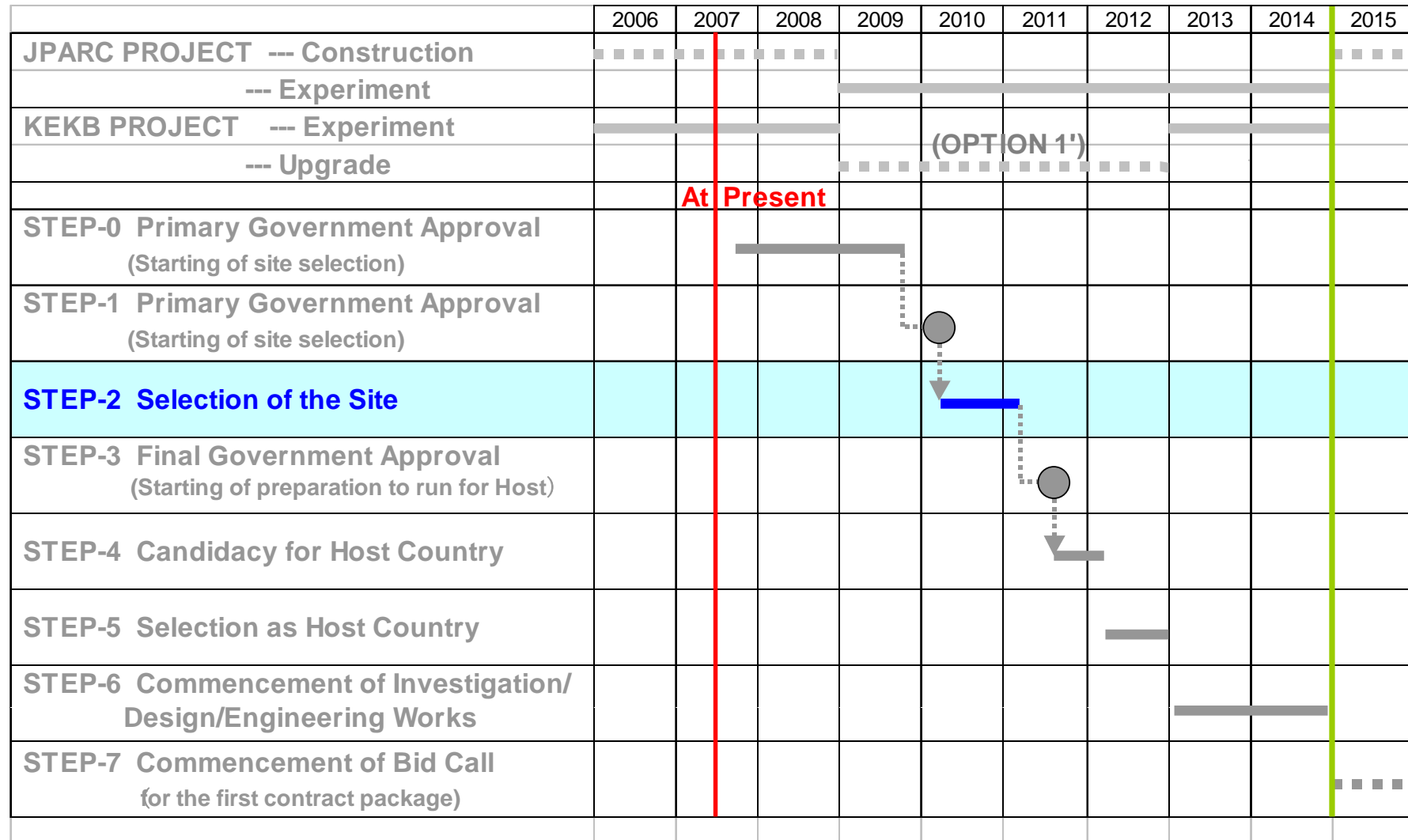
Until Government Approval

STEP 0-1

- 0.1 Preliminary examination of other sites than Sample Site
- 0.2 Limited design/engineering development mainly for site independent matters
- 0.3 Preparation of application for the primary government approval
04. Promotion & lobbying to the officials concerned



STEP 2 Site Selection Exercise





Site Selection Exercise

- After Primary Government Approval -

STEP 2

2.1 Evaluation of candidate sites

2.2 Narrow down the sites to one

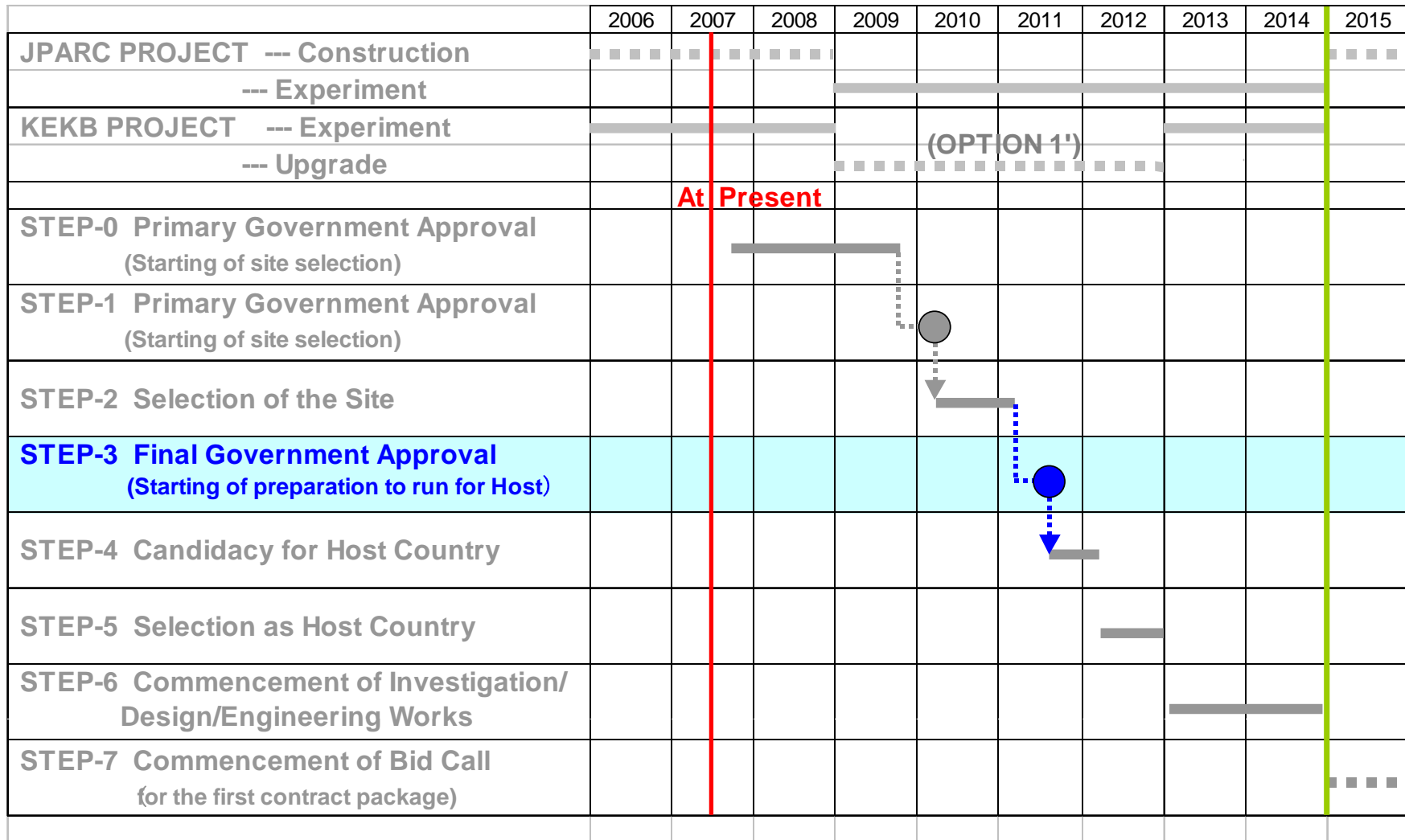
2.3 Schematic facility layout on final candidate site

2.4 Preliminary environmental impact survey

2.5 Negotiation with local authorities & population



STEP 3 Final Approval





Action To Obtain Final Government Approval

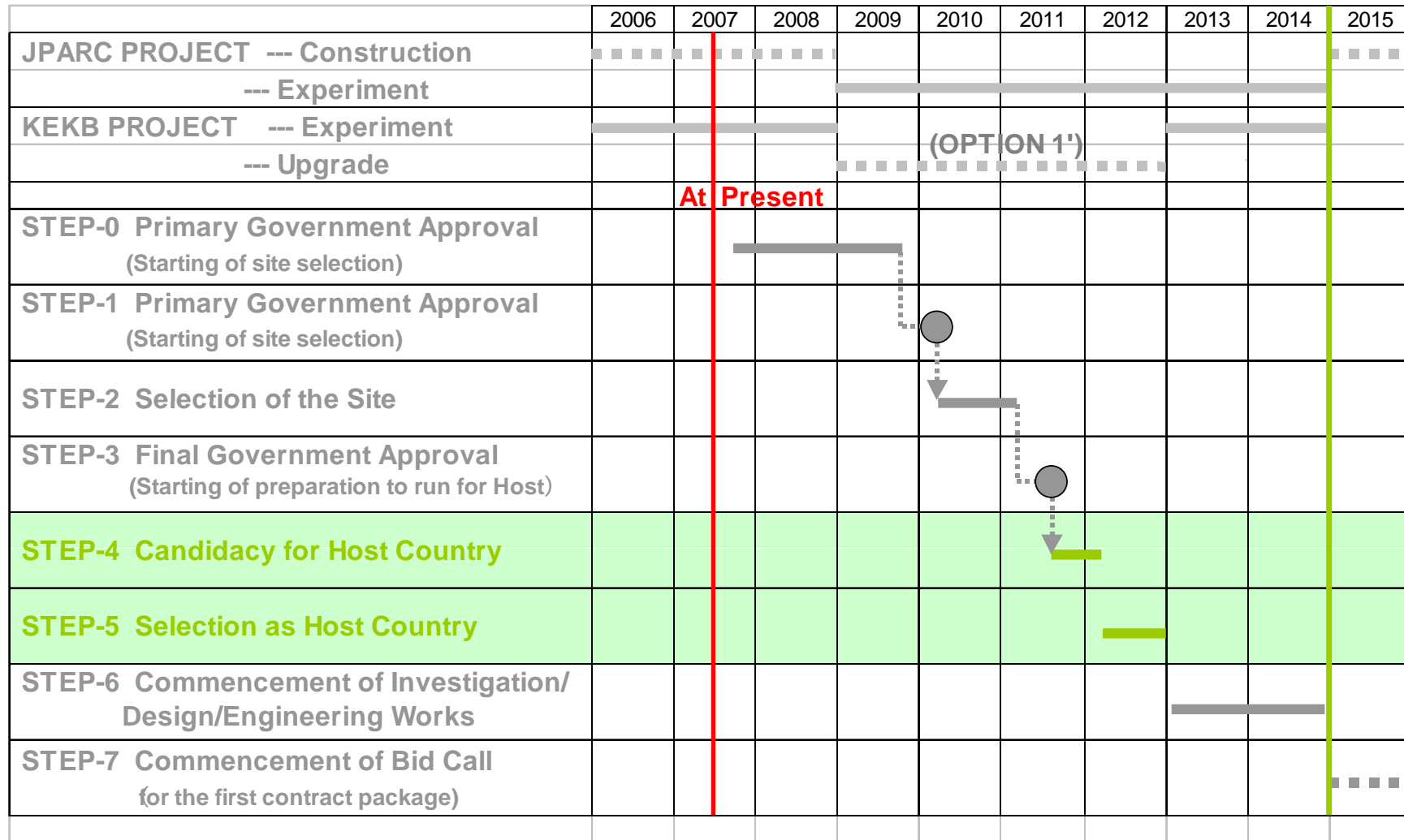
STEP 3

3.1 Preparation of project scenario & budget
(Objective, project description, implementation plan, budget, etc.)

3.2 Consultation with officials concerned



STEP 4-5 Selection of Host





STEP 4-5 Selection of Host

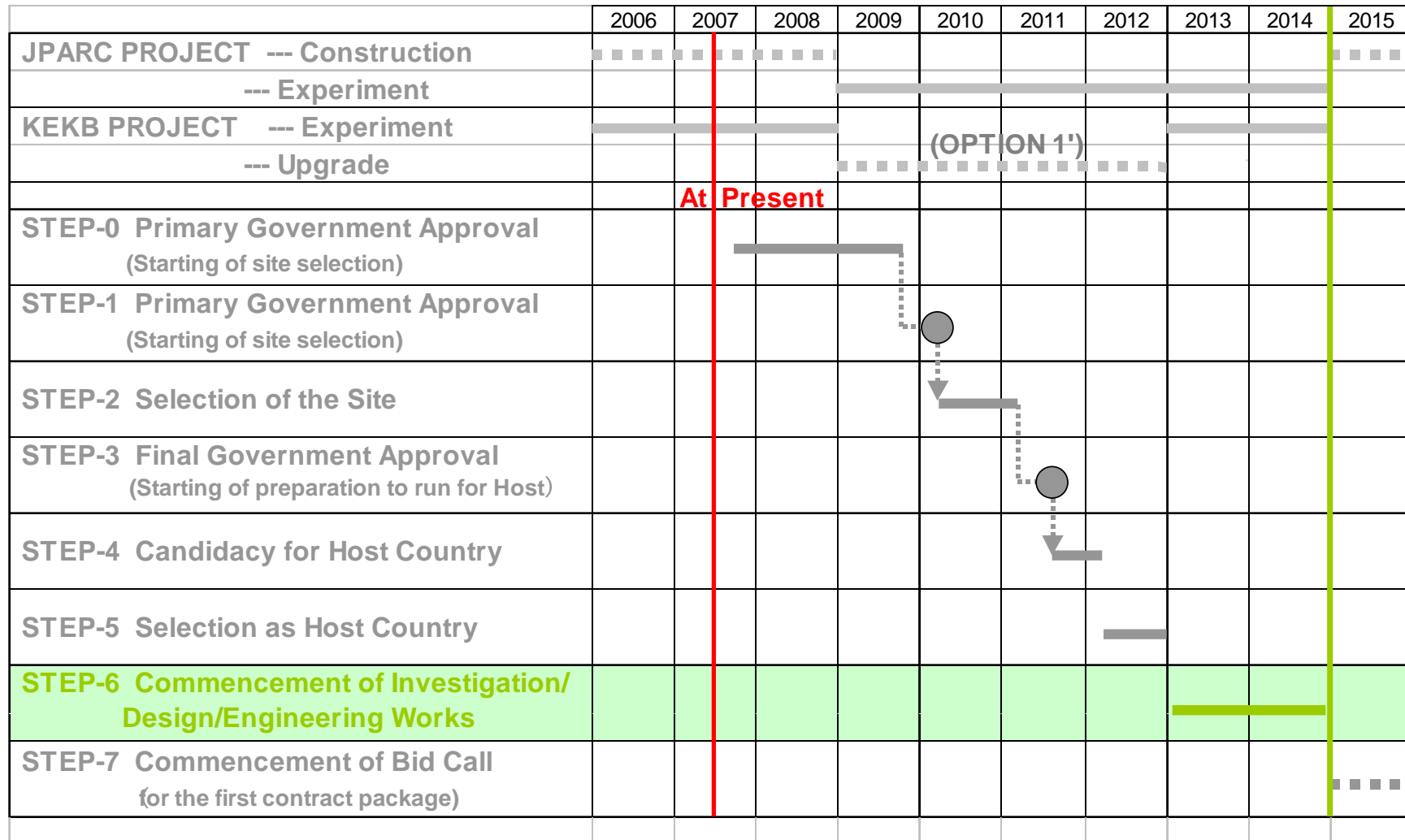
STEP 4-5

4.1 Preparation of bid to host after final government approval

5.1 Selection Process of Host Country



STEP-6 Detailed Design/Engineering Works & Administrative Procedures





Detailed Design/Engineering Works & Administrative Procedures

STEP 6

- 6.1 Employment of consultants
- 6.2 Site survey, soil investigation
- 6.3 Environmental impact survey & analysis
- 6.4 Decision on construction contract method
- 6.5 Detailed design/engineering works for initial bidding package (site preparation, underground facilities, early services, surface structure layout, etc.)
- 6.6 Design review & approval by regional authorities
- 6.8 Approval of funding agency
- 6.9 Bid documents (PQ form, bid invitation, bid instruction, conditions of contract, form of contract, etc.)
- 6.10 Approval of ILC Board



Summary Table of PLANNING PROCEDURE – ASIA

CFS Planning Procedure up to Initial Bid Call-Asian Region

	T0								
	2007	2008	2009	2010	2011	2012	2013	2014	2015
J-PARC v. n construction									
K experiment, μ experiment									
KEKB upgrade experiment									
0.1 Preliminary examination of other sites than Sample Site		—							
0.2 Limited design development for site independent items		—							
0.3 Preparation of application to the officials concerned		—							
03 Promotion and lobbying to the officials concerned		—	—						
1. Primary Government Approval				●					
1.1 Evaluation of candidate sites				—					
1.2 Narrow down the sites to one				—					
1.3 Schematic facility layout				—					
1.4 Preliminary environmental survey				—					
1.5 Negotiation with local authorities & population				—					
2. Selection of the Site					●				
2.1 Preparation of project scenario & budget					—				
2.2 Consultation with officials concerned					—				
3. Final Government Approval						●			
3.1 Preparation of bid to host					—				
4. Candidacy for Host Country							●		
4.1 Selection process						—			
5. Selection as Host Country								●	
6. Commencement of Investigation/Design/Engineering									●
6.1 Employment of consultants							—		
6.2 Site survey, soil investigation							—		
6.3 Environmental impact survey & analysis							—		
6.4 Decision on construction contract method							—		
6.5 Detailed design/engineering works							—		
6.7 Design review and award of approval by regional authorities							—		
6.8 Approval of funding agency							—		
6.9 Bid documents (invitation, instructions, condition of contract)							—		
6.10 Approval of ILC Board							—		
7. Bid Call for the Initial Contract Package									●
7.1 Bidding and contracting procedure									—



EXPECTED OUTSOURCING ENGINEERING COST

Splitting of Outsourced Engineering Cost for Pre & Post Initial Bidding , Asian Region

Cost in MM

Category	Work	Construction cost	Cost	Pre-T0 (Pre initial bidding)	Post-T0 (Post initial bidding)
Investigation	Site exploration				
	Soil investigation				
	Environmental analysis		Total 2,000	80%: 1,600	20%: 400
Design & supervision	Site development	21,005	1,050	50% of design work = 30% of total cost: 315	50% of design work and 100% of supervision = 70% of total cost: 735
	Underground facilities	116,585	9,659	90% of engineering work = 54% of total cost: 5,216	10% of engineering work and 100% of supervision = 46% of total cost: 4,443
	Architectural	29,826	1,491	20% of design work = 12% of total cost: 179	90% of design work and 100% of supervision = 94% of total cost: 1,312
	<i>Total of Civil Engineering incl. investigation</i>	<i>167,416</i>	<i>14,200</i>	<i>7,310</i>	<i>6,890</i>
	Electrical	47,150	2,357	20% of engineering work = 12% of total cost: 283	80% of engineering work and 100% of supervision = 88% of total cost: 2,074
	Mechanical (air, pipe & water)	46,410	3,524	20% of engineering work = 12% of total cost: 423	80% of engineering work and 100% of supervision = 88% of total cost: 3,101
	Handling equipment	3,617	14	0%	100% 14
	Safety equipment	3,362	168	40% of planning = 24% of total cost: 40	60% of planning and 100% of supervision = 76% of total cost: 128
	Survey & alignment	3,104	6,855	0%	100% 6,855
	Total		270,609	27,118	8,056 (30%)

Proportion of fee for engineering and supervision is assumed as 60% - 40%



Summary

- Based on the technical process of CFS, necessary Asian regional tasks were discussed.
- Narrowing domestic potential sites is next important step.
- Government approval is needed for site narrowing and obtaining enough budget for EDR phase.
- The government approval will be obtainable in conjunction with the present projects and the future plan of KEK.