11:00 - 11:50 Project status

Convener: Dr. Tohru Takeshita (Shinshu University)

11:00 **ILC status and strategy in Japan** *30'*

Speaker: Atsuto Suzuki (KEK)

Toward ILC Construction : Japan Activities

at European Strategy Meeting
Dec. 11, 2012

2012 | 2013 | 2014 | 2015~6

Positive Reference from New Prime Minister

- Set-up JLCB and JLCC
- Establish ILC Pre-J-Lab.
- ILC Pre-Lab.
- ILC -Lab.

HEP Researchers

- Cite Decision
- Design ILC Lab.

- Project Proposal to Science Council of Japan

~2013.9

Formal Message on Hosting ILC in Japan

Cite/Host Establish

- ILC Host Recommendation to Government

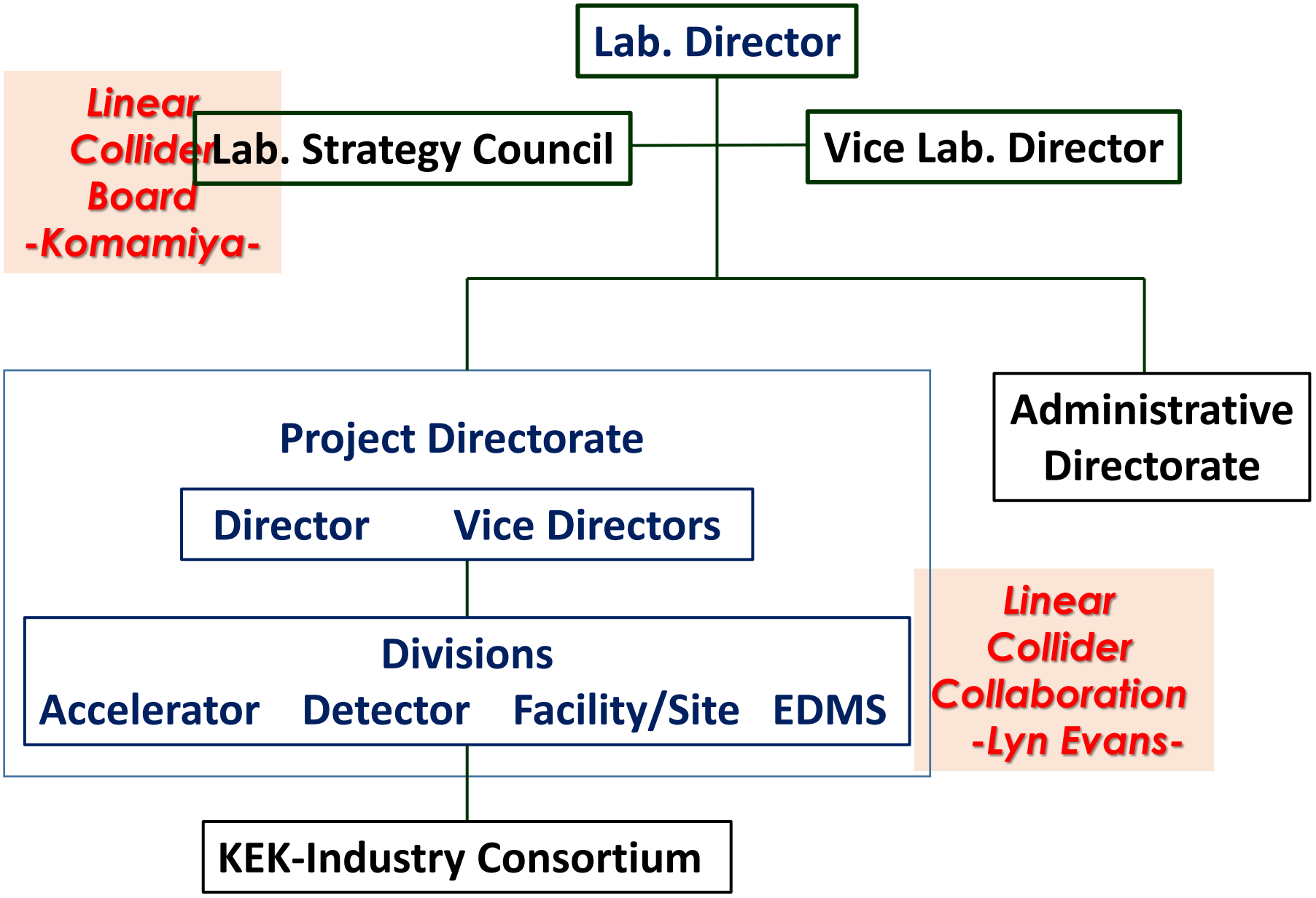
Sept. 28

Formal message on starting diplomatic negotiations of the ILC project by Japanese government

Japan Policy Council

- Detailed Design of International Country

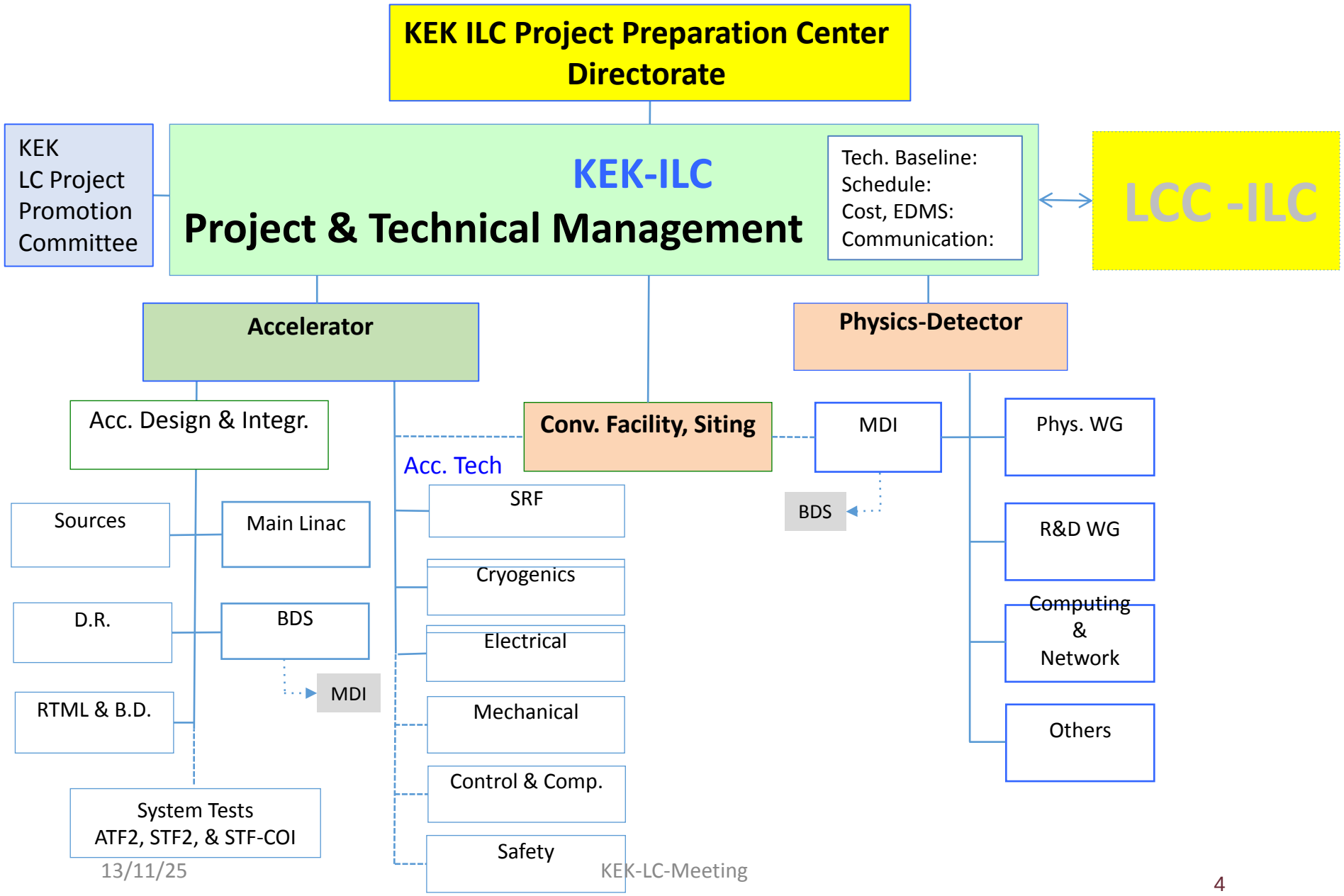
ILC-JPre-Lab. → ILC PreLab.



KEK-ILC Preparation Organization, proposed

A. Yamamoto

(A. Yamamoto, November, 18, 2013)



KEK ILC-Pre Lab.
(Jan. 2014)

J ILC-Pre Lab.
(June 2014)

ILC Pre. Lab.
(~2015)

P5 Report → Government (Nov. 7)

- The world HEP scientists are strongly disappointed with media remarks about the JSC findings on the ILC project. This damage looks too serious.

- Scientists are deeply concerned that the Japanese government would hesitate to advance the realization of the ILC project.

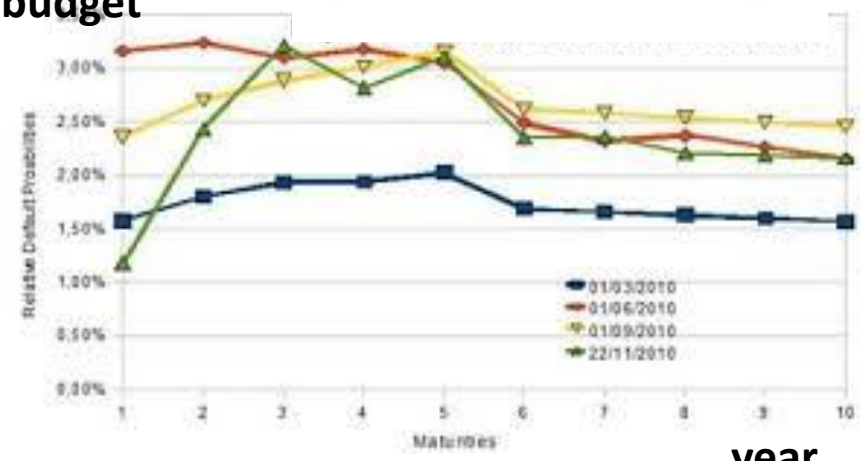
- Given these, it is urgent that the government unfolds its view on the JSC findings.

- The government should now pay much attention on how to define interests to host the ILC in Japan. It is the next step to start governmental discussions about the budget and man-power sharing.

- The world HEP community understands that the next FALC is the best opportunity for the government message.

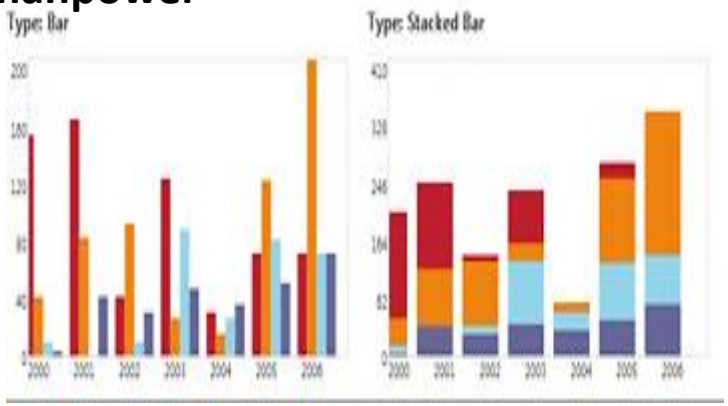
- The Rolf Heuer (CERN), Nigel Lockyer (FNAL) and A.S (KEK) had the consensus that the time-profiles of budget-breakdown (CFS, accelerator, detector ･･･) and man-power-breakdown are essential for the governmental negotiation.

budget



year

manpower



year

Meeting of the U.S. – Japan
Science and Technology
Joint High Level Committee

April 30, 2013
Washington, D.C.

US-Japan Advanced Science and Technology Symposium

This symposium gathers US and Japanese leaders from policy makers for the field of science and innovation, academia and industry. With the International Linear Collider (ILC) as an example, the discussion will cover the US-Japan co-operation in science and technology, working together for innovation and the realization of economic growth as well as methods and policies for the development of scientific and technical human resources.

Toward ILC Construction : International Activities

2012 | 2013 | 2014 | 2015~6

GDE
RD

Linear Collider Directorate (LCD)
- Accelerator/Detector R&D
- Site Recommendation
- Detailed Design for Construction
- Project Proposal

ILCSC

Linear Collider Board (LCB)
- Detailed Design for ILC Lab.
- Chart-out of Approval Process
  for instance, ICFA→IUPAP→ OECD
  → Governmental Board

In the next LCB : Proposal of Starting 2 WGs

Project Design Guideline toward ILC

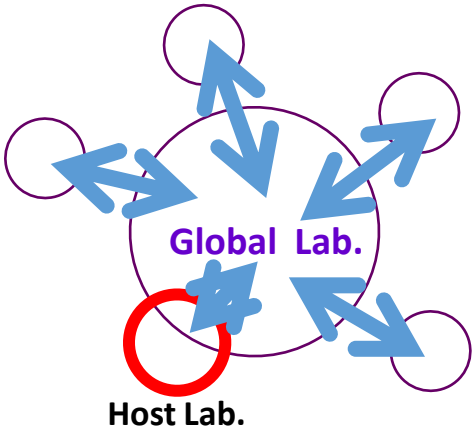
Contents

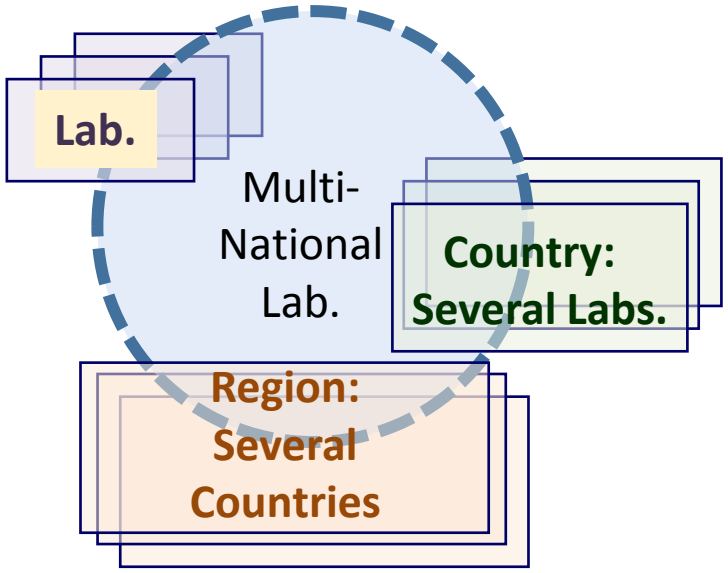
ILC Project Implementation Planning

March 2012
Revision A

Contents

Possibility 2 : Multi-National Lab.





Energy Frontier Projects
(HL-LHC ILC)

先端加速器科学技術推進協議会

AAA

Advanced Accelerator Association Promoting Science & Technology

Proposal to Build-up ILC Sustainable Facility

第34回技術部会

日　時：2013年12月16日（月曜日）15:00 –18:00
場　所：秋葉原UDX 6F Room D

Atsuto Suzuki (KEK)

INTER-UNIVERSITY RESEARCH INSTITUTE CORPORATION
HIGH ENERGY ACCELERATOR RESEARCH ORGANIZATION

2nd Workshop
Energy for Sustainable Science
at Research Infrastructures

23-25 October 2013
CERN
Europe/Zurich timezone

Energy Management in Japan, Consequences for Research Infrastructures

Masakazu Yoshioka (KEK)

1. Electric power supply in Japan, before and after March 11, 2011 earthquake
   - High efficiency and "almost" environmental pollution-free electricity generators can save Japan, and contribute to reduce global CO_2 problem
2. KEK Electricity contract as an example of large-scale RIs
3. Accelerator design by considering optimization of luminosity/electricity demand
   - Example: Super-KEKB
   - ILC
4. Accelerator component design by considering high power-efficiency
   - Klystron
   - Availability based on MTBF and MTTR
5. Summary

ILC: an amazing energy transformer

FROM eV TO TeV:

THE GREEN ILC

Energy Management at KEK, Strategy on Energy Management, Efficiency, Sustainability

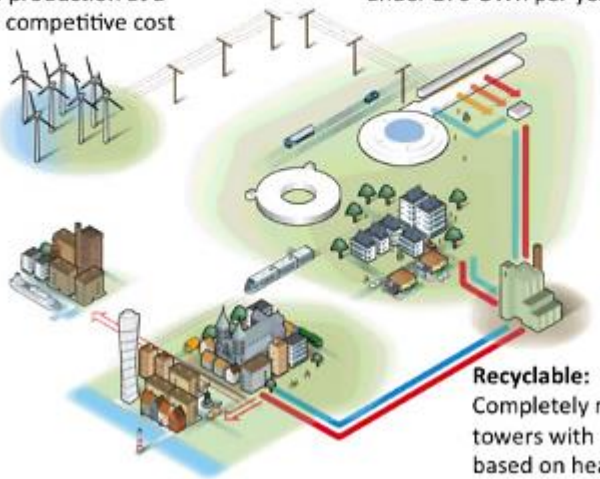
Atsuto Suzuki (KEK)

INTER-UNIVERSITY RESEARCH INSTITUTE CORPORATION
HIGH ENERGY ACCELERATOR RESEARCH ORGANIZATION

The ESS Energy Concept

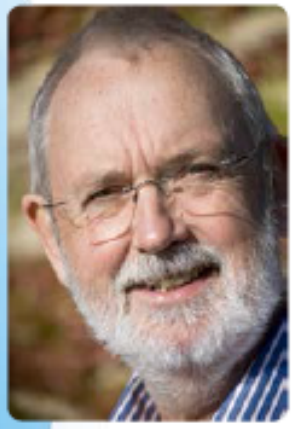
Renewable:
All energy from new, dedicated renewable production at a stable and competitive cost

Responsible:
Reduce energy use to under 270 GWh per year



Recyclable:
Completely replace
towers with a cooli
based on heat recy

Foreword from the CEO of ESS



Not so long ago – but before it was settled that the European Spallation Source, ESS will be built in Lund, Sweden – two scientists, of which I had the fortune of being one, were discussing over lunch how to power such a facility in an environmentally friendly manner. On a napkin, that I still have in my drawer, we wrote down the outline to what has now been refined and will make ESS not only the world's leading research facility using neutrons, but also the first large-scale research facility that will be environmentally sustainable.

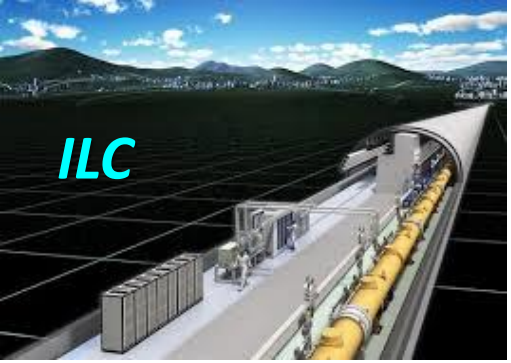
Back then, six years ago, society had recognised the necessity of using new methods in industry to prevent global warming. Since humans have tended to use more and more electricity over time, big hopes were set on technical development and scientific breakthroughs. Facilities like ESS would, in the future, enable scientists to understand and create new materials that, in turn, would ensure future products left a smaller environmental impact than products of the day.

Less thought has been given, however, on how to power research facilities, since they will actually need large amounts of electricity. If we connect them to the electrical grid without considering the source of the power, and if we just vent their waste heat out in the air or into water, a serious paradox appears: meeting the need for new and better products with increased air pollution and CO_2 emissions would clearly contradict the aim of the science performed at the research facilities.

When it came to deciding where to place ESS, the preferred bid, from Lund, would give the facility an environmentally sustainable design, using available knowledge and innovative techniques to make it CO_2 neutral within its life expectancy. This would also have a positive impact on operational costs, giving us more science for each euro spent.

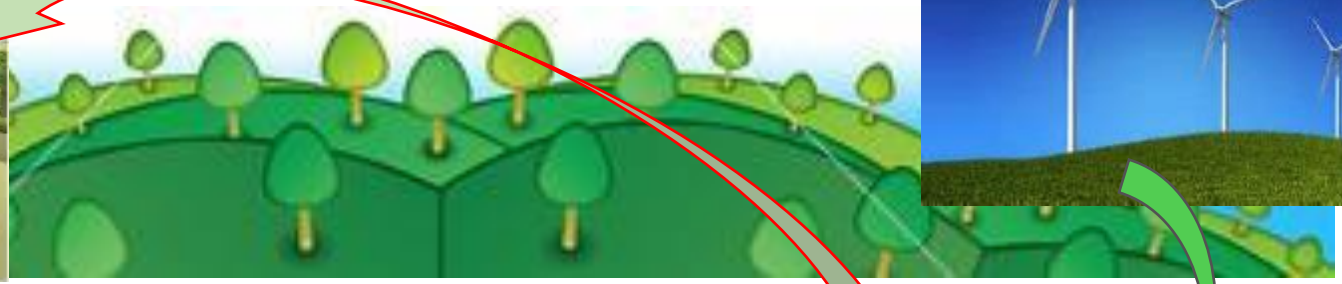
To make this possible we have partnered two energy companies, one local and one global (Lunds Energi and E.ON) who have shared their knowledge and expertise

Before it is settled that the ESS will be built in Lund, Sweden・・・We discussed how to power such a facility in an environmentally friendly manner・・・and wrote down to what will make ESS not only the world's leading research facility, but also the first large-scale research facility that will be environmentally sustainable.



Deliverable of GREEN ILC

Reuse Energy

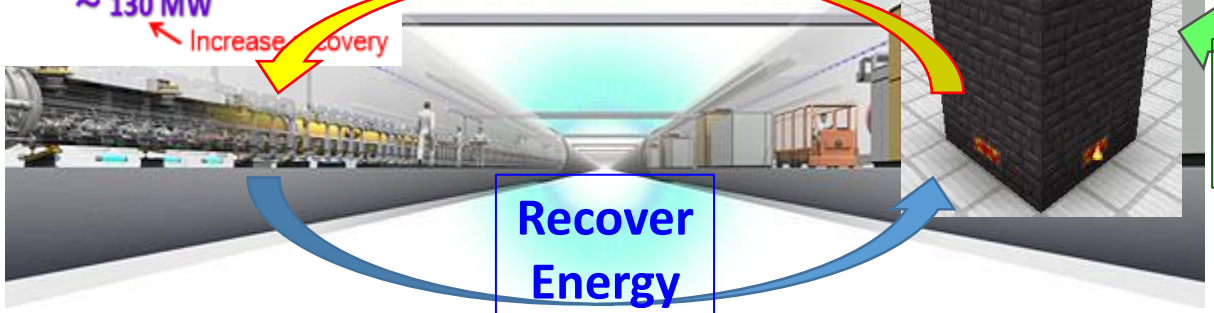


Ross Rate

Infrastructure : 50 MW	50 % : 25 MW
RF System : 70 MW	40 % : 28 MW
Cryogenics : 70 MW	100 % : 70 MW
Beam Dump : 10 MW	100 % : 10 MW
	~ 130 MW

Increase Recovery

Reuse Energy



Improve Efficiency

Recover Energy

Stand Alone Energy System