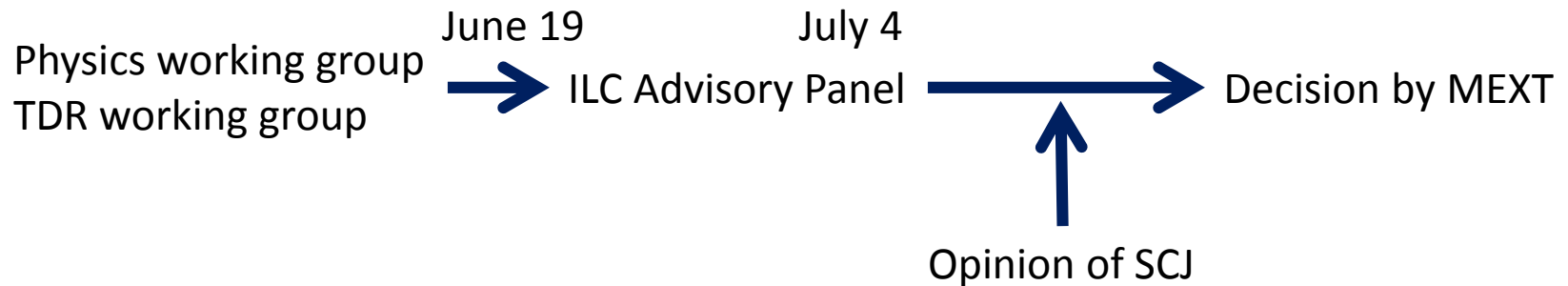


ILC Status in Japan

October 26, 2018
LCWS2018, University of Texas Arlington

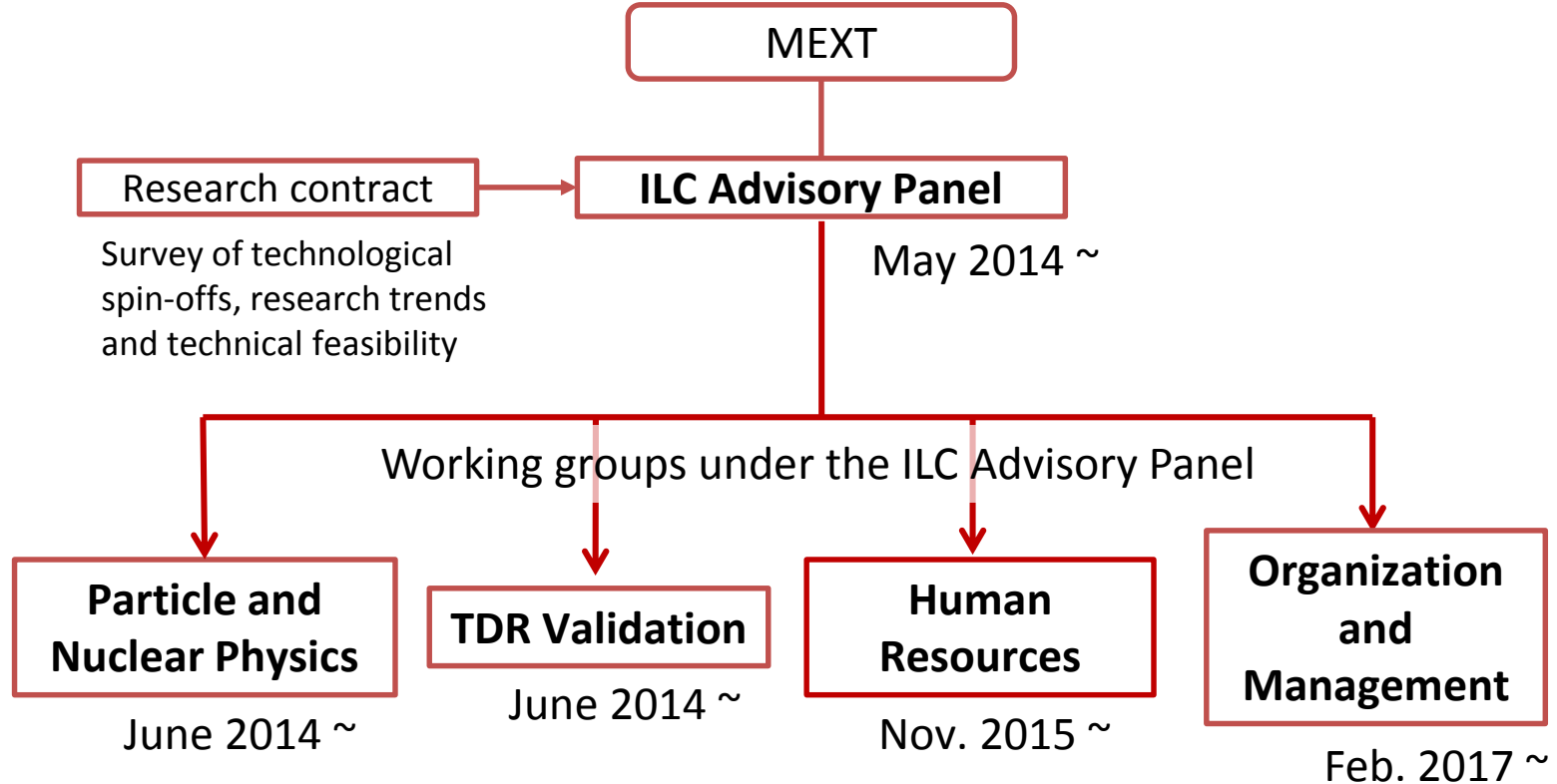
KEK
M.Yamauchi

- MEXT procedure (standard procedure)



- Political process

- ▶ ILC Federation of Diet Members recognizes that the positive sign has to be given by the end of this year, and strong action is being taken to secure budget.



- The Particle and Nuclear Physics WG and TDR Validation WG were reactivated to discuss the ILC250 proposal.
- The reports from the two WG's were received by the ILC Advisory Panel on June 19.
- The final report from the panel was released on July 4.

■ Physics working group

- ▶ Precise measurements of Higgs couplings to the other particles will provide knowledge of the nature of new physics, which will indicate future direction of particle physics.
- ▶ Precise measurements of top quark cannot be done at the 250GeV ILC. Triple Higgs coupling cannot be measured, either.
- ▶ For searches for dark matter and extra dimension, the ILC still remains useful even with 250GeV.
- ▶ Taking all these discussions into account, the purpose of the 250GeV ILC is understood as: It clarifies the direction toward the new physics beyond the Standard Model and its energy scale from the pattern of deviation from the Standard Model in the coupling strengths of Higgs and other particles.

■ TDR validation working group

- ▶ Cost of the 250GeV ILC based on the estimation by LCC/KEK (all the numbers are in unit of 10^8 JPY ~ US\$0.9M)
 - ✓ Accelerator (+ civil const. + labor) 6350 - 7028
 - ✓ Detector (+ labor) 1005
 - ✓ Annual operation cost 366 - 392
 - ✓ Preparation phase 233
 - ✓ Others: 25% uncertainty, 10% contingency, decommission=2 x annual operation etc.
- ▶ Technical issues still remain in beam dump, positron source, beam control and injection system of the damping ring. They have to be cleared in the preparation phase.

- The ILC advisory panel of MEXT has finished its discussion in July 2018, and released a report “Summary of the ILC Advisory Panel's Discussions to Date after Revision”.
(http://www.mext.go.jp/component/b_menu/shingi/toushin/__icsFiles/afielldfile/2018/09/20/1409220_2_1.pdf)
- The report reviews the ILC project in detail.
 - ▶ Scientific potentials
 - ▶ Cost and technical feasibility
 - ▶ Human resources educational program
 - ▶ Organization and management
 - ▶ International cooperation
 - ▶ Discussion of the 250GeV ILC
- All these points are reviewed with positive flavor in the report, but it does NOT give any recommendation.
- It requests the Science Council of Japan to discuss the 250GeV ILC, based on the evaluation given in the panel report.

- Intensive reviews are being made by the Review Panel and the Technology Subpanel. The review panel is chaired by Dr. Iye, condensed matter physicist who chaired the previous ILC committee in 2013.

- 8 Review Panel meetings in 2.5 months: Aug. 10 (J), Aug.21, Aug.29, Sep. 11 (closed meeting), Sep.18 (J), Oct. 1, Oct. 10 (J, partially closed meeting) and Oct. 16 (J, partially closed meeting) J:Joint meeting with the subpanel
 - ▶ Physics at ILC250 (Keisuke Fujii), ILC250 accelerator (Shin Michizono), LCB statement (Tatsuya Nakada), Report from the working groups at MEXT , ILC organization described at ILC-PIP (MY), Future plan of KEK and ILC (MY), Consensus on ILC at the Japanese HEP community (Hiroaki Aihara)...
 - ▶ Summary of the discussions was released on Sep. 18.
 - ✓ Strategy of research in case deviation from the Standard Model is not observed in Higgs decays
 - ✓ Is precision measurements of Higgs really the most important topics in particle physics?
 - ✓ Is ILC an attractive research infrastructure 20 years later?
 - ✓ Is there a consensus in the Japanese HEP community?
 - ✓ Has KEK discussed its future program and priorities in detail?

- Another series of intensive reviews are being made by the Technology Subpanel. The subpanel consists of experts of civil engineering, environmental science, accelerator (light source) etc.

- 8 Subpanel meetings in 2.5 months: Aug. 10 (J), Aug.20, Aug.23, Sep.13, Sep.18 (J), Oct. 2, Oct. 10 (J, partially closed meeting) and Oct. 16 (J, partially closed meeting) J:Joint meeting with the panel
 - ▶ Shin Michizono, Akira Yamamoto, Masanobu Miyahara, Kaoru Yokoya, Nobuhiro Terunuma et al. answered many questions from the subpanel (including nasty ones).

- We received support letters from you, which were useful to convince the panel members that our claim is endorsed by the international community. I am sure the Txas Statement will have a similar effect.

- The SCJ understand well that their conclusion has to be released before the end of 2018.

Liberal Democratic Party Coordination Council for Realization of ILC

Courtesy
S. Yamashita

Unified HQ for
Implementing
Regional
Revitalization

Head: Hon. Takeo
KAWAMURA

HQ for Promoting
National Land
Resilience

Head: Hon.
Toshihiro NIKAI

Research Council
for Strategy on
Science, Technology
and Innovation

Chair: Hon.
Kisaburo TOKAI

HQ for Accelerating
Reconstruction
from Great East
Japan Earthquake

Head: Hon.
Fukushiro
NUKAGA

Research Council
for Strategy on
Intellectual
Property

Chair: Hon. Akira
AMARI

Liberal Democratic Party

Coordination Council for Realization of ILC

(Representative: Hon. Takeo KAWAMURA)

(Across-party
group) Science and
Technology Group

Chair: Hon.
Hiroyuki HOSODA

Advanced
Accelerator Assoc.
Promoting Science
and Technology

Chair: Mr. Takashi
NISHIOKA

ILC 100 People
Committee

Knowledgeable
Advisors

Hon. Hiroya
MASUDA (former
Minister for Internal
Affairs)
Prof. Satoshi FUJII
(Counselor, Cabinet
Secretariat)
Prof. Atsushi
SUNAMI
(Vice President,
GRIPS)

Tohoku ILC
Promotion Council

Representative: Mr.
Hiroaki
TAKAHASHI,
Prof. Hideo OHNO

ILC Supporters

(Across-party
group)
Federation of Diet
Members in
Support of ILC

Chair: Hon. Takeo
KAWAMURA
Secretary General:
Hon. Ryu
SHIONOYA

September 18, 2018

- To position ILC as a cross-policy “national project”, covering not only science, technology and innovation but also many challenges faced by the national government;
- To secure the financial resources for the realization of ILC (beyond the Olympic Games) outside the ordinary science and technology, academic or university budgets; and in addition,
- To make sure that, as for the international agreement of ILC, certain critical decisions, such as the share of oversea investments be roughly half, be satisfied before the international agreement necessary for the start of construction of ILC is reached.

ILC Promotion bodies in Japan

Courtesy
S. Yamashita

Japan: Parliamentary cabinet system

Government

National Diet (Parliament)
Representatives ~480
Councillors ~240

Cabinet (Prime Minister's office)

Political
Federation of the Diet Members for ILC (2006, 2008~)

Ministries

- MEXT** (Education, Culture, Sports, S&T)
- CAO** (Cabinet office) – S&T Council (**CSTI**)
- MOFA** (Foreign Affairs) -- **Embassy**
- MLIT** (Civil, Sightseeing, Transport)
- METI** (Economy, Trade, Industry)
- + ...
- MOF** (Ministry of Finance)

Founded by LDP in 2006 → Multi-parties in 2008. Now ~150 Members

Industry & Academia
Business sector

AAA
Advanced Accelerator Association (2008~)
(2014~ incorporated company)

Central activity in **Researchers**

KEK
ILC Promotion Office
(led by KEK DG, 2014~)

KEK JAEA, QST, JAXA, RIKEN,
Universities,,

SCJ
Science Council of Japan

Industry-Academia cooperation
Led by Executives of Leading Companies and KEK DG

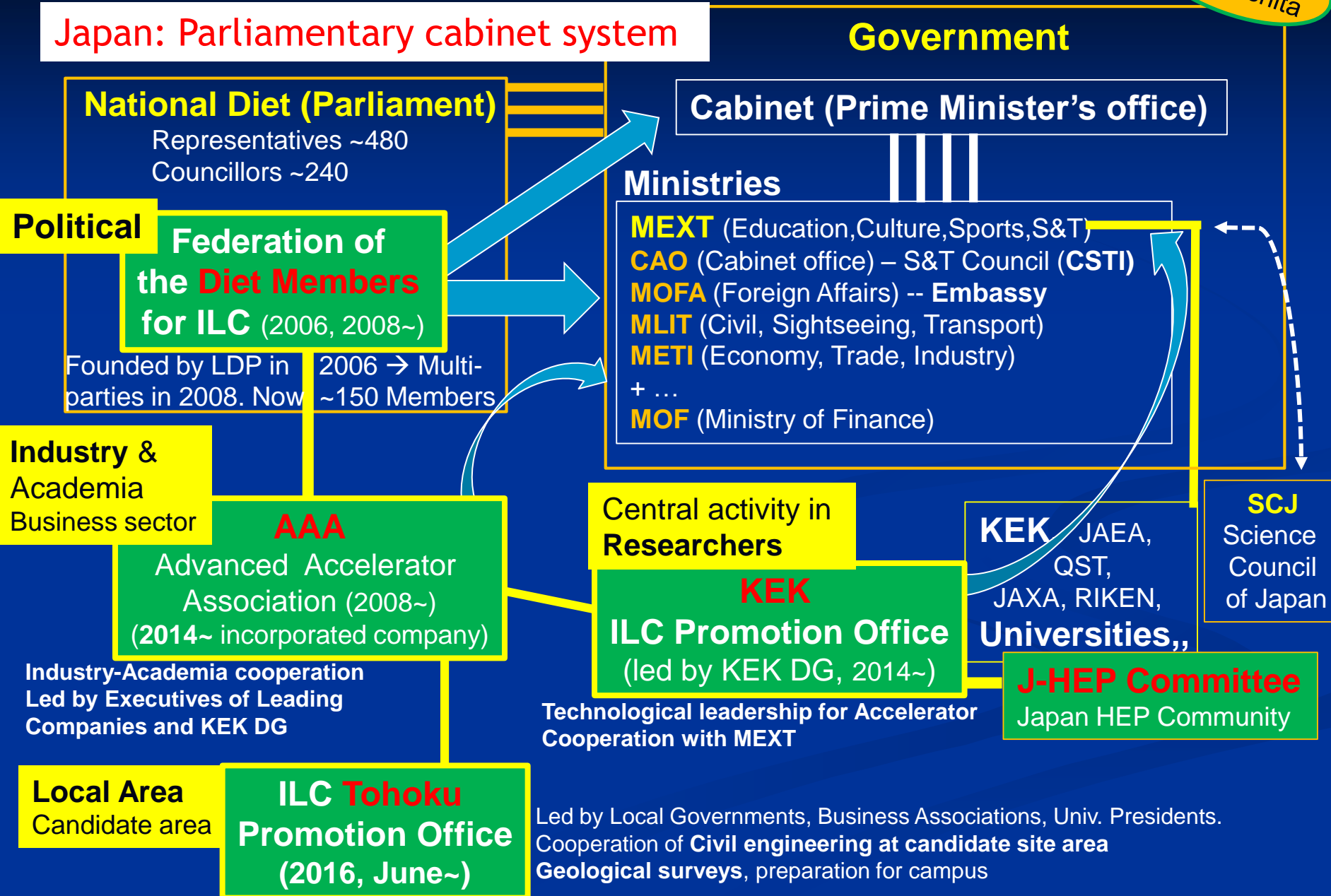
Technological leadership for Accelerator
Cooperation with MEXT

J-HEP Committee
Japan HEP Community

Local Area
Candidate area

ILC Tohoku Promotion Office
(2016, June~)

Led by Local Governments, Business Associations, Univ. Presidents.
Cooperation of **Civil engineering** at candidate site area
Geological surveys, preparation for campus



- Hon. Paul Dabbar, Under Secretary for Science, US DOE, visited Japan at the beginning of October.
- He visited KEK to talk with us on the various accelerator project, and ILC.
- He also visited the meeting of the Coordination Council for the Realization of ILC in Liberal Democratic Party, and expressed strong interest in the ILC, and said that he would act as a positive advocator in US government and congress provided the Japanese government makes the decision.
- This meeting was an excellent occasion to share strong motivations for the ILC between US and Japan.



- A group of MEXT officials led by Deputy Director of Research Promotion Bureau, MEXT, had a video meeting with French MESRI on March 16.
- “Given the results of LHC, feeling among researchers in France is that 500GeV ILC will not be able to find signs of new physics beyond Standard Model. 250GeV ILC now has a certain scientific merit, because it can make clear precision measurements of the Higgs particle. In general, it is necessary to balance cost of the project with its expected scientific outcome.”
- “For the large research infrastructure, MESRI has its own decision making process, based on the prioritization given by the domestic scientific community. Possible French contribution to ILC will have to be considered in this process.”

- A group of MEXT officials led by Deputy Director of Research Promotion Bureau, MEXT, had a video meeting with German BMBF on May 9.
- “German researchers have scientific interests in the ILC project, however there is a prudent opinion that the change from 500GeV to 250GeV will restrict the project’s capability, and that it is, therefore, questionable whether it will really open up the way to new physics.”
- “It is a problem that in past cases, the initial cost estimate of a large-scale project often turned out to be quite different from the actual cost, causing unexpected additional cost. In addition, professional project management based on past experience and know-how is required to commission and operate such a large scale project.”
- “For the large research infrastructure, German Government has its own decision making process, based on the prioritization given by the domestic scientific community. Possible German contribution to ILC will have to be considered in this process.”

- The ILC proposal is being intensively studied by the ILC Panel at the Science Council of Japan. KEK and Japanese HEP community are making all the possible reactions to the questions given by the Panels, so that the ILC is correctly understood by them.
- We anticipate that a report will be given by the Panel in ~ a month.
- Japanese Politicians organized the ILC Coordination Council, which published a resolution and push the project strongly.
- Statement from the Japanese government is expected by the end of 2018. Outcome from the SCJ + Result of the political efforts = Governmental statement from Japan.