

JAHEP ILC Steering Panel's website: <https://www.jahep-ilc.org/en/>



## Report from JAHEP ILC Steering Panel (\*JAHEP: Japan Association of High Energy Physicists)

## + Report on the Situation in Japan

Satoru Yamashita (University of Tokyo)  
LCWS2021 - March 15, 2021

# Japan Association of High Energy Physicists ILC Steering Panel

New effort to lead the ILC promotional activities in Japan

**Established in 28<sup>th</sup> of October 2020** to discuss strategies and drive the community-wide effort in Japan to realize the ILC project.

## Mandate

- Leading the promotion of the ILC project in the high energy physics community in Japan.
- Coordinating the promotion activities in Japan working with KEK and the ILC International Development Team.
- Cooperating with various bodies in Japan, such as political organizations, government authorities, industry-academia associations, regional governments and organizations, and media, as well as relevant international organizations, towards the realization of the ILC.

## Members:

Shoji Asai (Tokyo)  
Kazunori Hanagaki (KEK)  
Toru Iijima (Nagoya)  
Kiyotomo Kawagoe (Kyushu)  
Sachio Komamiya (Waseda)  
Shinichiro Michizono (KEK)  
Toshinori Mori (Tokyo)  
Hitoshi Murayama (Berkeley/IPMU)  
Yutaka Ushiroda (KEK)  
Hitoshi Yamamoto (Tohoku/Valencia)  
Satoru Yamashita (Tokyo) – Chair

Members from ATLAS, Belle II, and ILC  
Meetings on a weekly ~ biweekly basis

Many support teams: Universities and KEK in working groups, editorial teams, so on..

# Actions by the ILC Steering Panel

- Meetings with individual university groups to encourage collaboration for ILC (WG Leader: M. Kuriki/Hiroshima Univ.)
- First **report** on the progress and situation in Japan for ILC, distributed to the **international research community** (Chief Editor: S. Narita/Iwate Univ.)
- Cooperating as the community for **ILC Pre-Lab** under the leadership by ILC international development team (IDT) and KEK.
- Started **communication with media organizations** to deliver the basic information, progresses and issues in promoting the ILC.
- Preparing of material for communication with **other academic fields**.
- Analyzing the **issues** pointed out by MEXT ILC Advisory Panel (2018) and SCJ Committee on ILC (2018), and the **progress and ways to solve them**.
- Prepare **material** for communicating the project milestones, costs and benefits, to be shared among national authorities, media, regional promotion bodies, industry-academia cooperation as well as political sectors driving the top-down approaches
- **Making strategic plans** as the community in cooperation with regional sectors in Tohoku, local governments, industry and business sectors, opinion leaders and National Diet members.

# As a starting point -- information about ILC promotion in Japan:

Document summarizing the ILC promoting activities in Japan (Jan. 16, 2021):

[http://jahep-ilc.org/files/ILC\\_JP\\_update\\_20210116\\_E.pdf](http://jahep-ilc.org/files/ILC_JP_update_20210116_E.pdf)

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Recent Progress Towards the Realization of the ILC in Japan:  
Cooperative Efforts by Academia, Industry, and Local Region

January 16, 2021

JAHEP ILC Steering Panel<sup>1</sup>

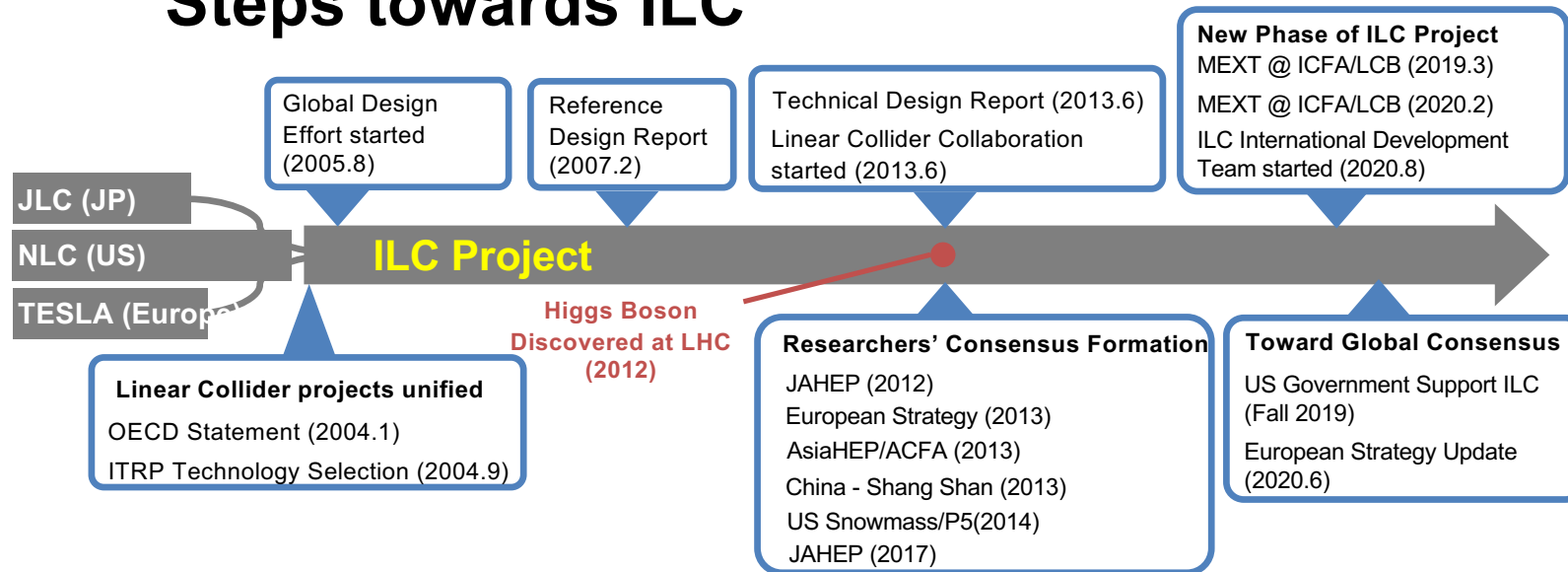
**Introduction**

1. The International Linear Collider (ILC) is a large-scale project that requires global cooperation. In Japan, people not only from the academic sector, but also from the political, industrial, business sectors and local communities of the candidate site for construction and its surrounding areas, are now working together to promote the ILC in Japan and are considering the various preparations needed for the realization of the ILC.  
  
International discussions among governments, and politics-industry-government-academia sectors are also ongoing. Among such international activities, clear support for the ILC sited in Japan shown by the US government since the fall of 2019 has become a great driving force for the realization of the ILC.
2. This report summarizes the latest status of such efforts towards the realization of the ILC in various sectors of Japan. We will continue to report the status in future. We hope that this report will be widely shared by the research communities around the world as useful input information for international discussions.
3. On March 7, 2019, at the Linear Collider Board (LCB) meeting held in Tokyo, the Ministry of Education, Culture, Sports, Science and Technology (MEXT) announced the view of the Japanese government regarding the ILC project. Following this, at the LCB meeting held at SLAC in the United States on February 22, 2020, MEXT and the Federation of Diet Members for the ILC reported on the progress of the project, and the Director of the Office of Science of the U.S. Department of Energy gave a speech on the views from U.S. Based on these presentations, the International Committee for Future Accelerators (ICFA) decided to advance the ILC project to the next phase by establishing the ILC International Development Team (IDT) in August 2020, whose mandate is to make preparations to establish the ILC Pre-Laboratory (Pre-Lab)<sup>2</sup>.

# **Report on the Situation in Japan**

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# Steps towards ILC



In Japan, series of official assessments of ILC from the viewpoints of Academic Project has been done.

## ILC-specific processes

2013 MEXT request Science Council of Japan (SCJ) to discuss  
 2014 SCJ report: Values, Issues, recommend MEXT to investigate  
 2014 MEXT advisory panel:  
 2017 JAHEP proposal of ILC to start from 250 GeV  
 2017 MEXT advisory panel for 250 GeV machine  
 2018 SCJ report: on 250 GeV machine

## Regular process of academic large projects under SCJ

2019 SCJ master plan

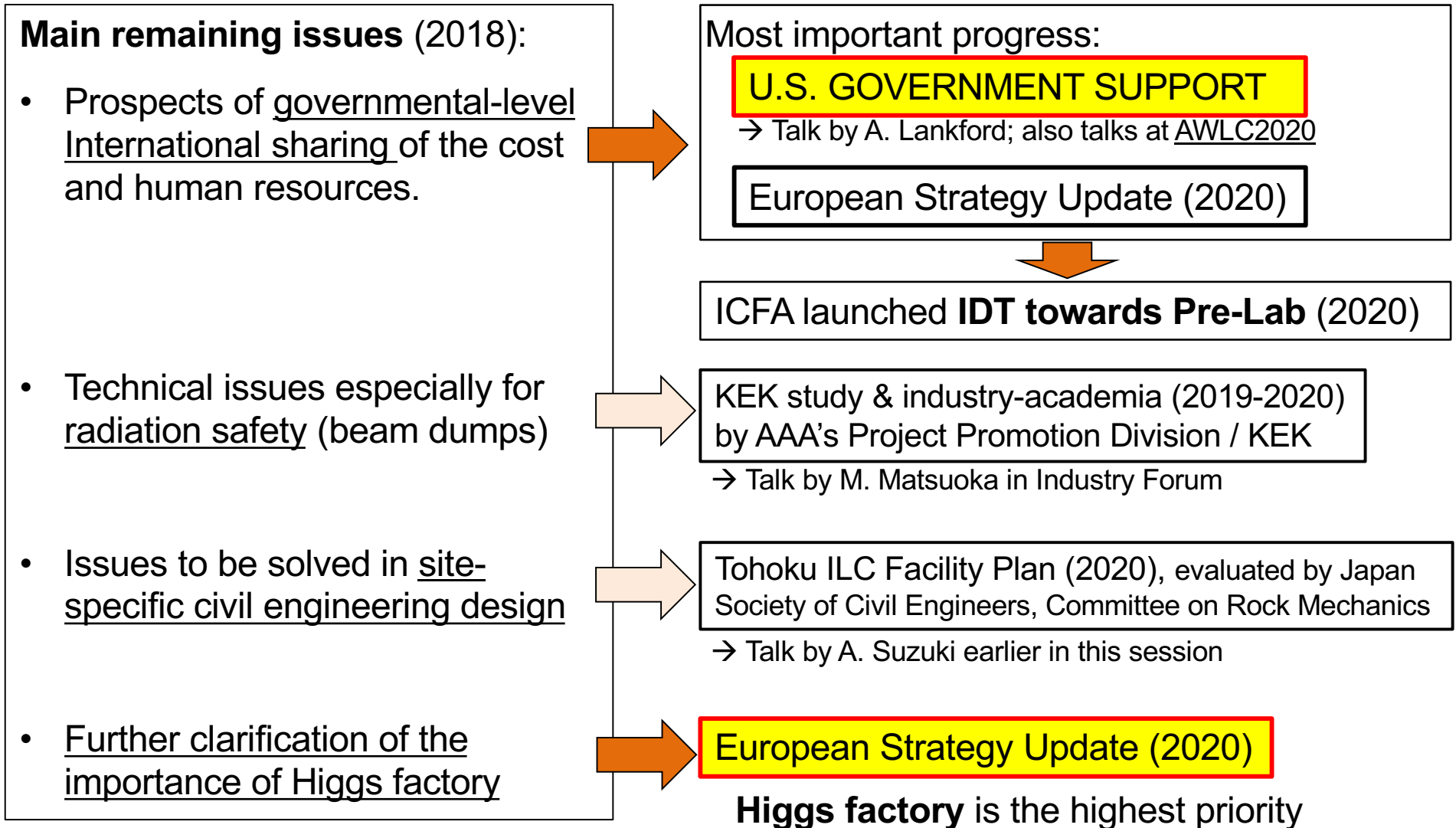
The academic value of the project has been evaluated to be high.

## Main remaining issues (2018):

- Prospects of governmental-level International sharing of the cost and human resources.
- Technical issues especially for radiation safety (beam dumps)
- Issues to be solved in site-specific civil engineering design
- Further clarification of the importance of Higgs factory

Broad understanding among the public & understanding of other fields

# Progress since 2019



Note: Since 2017, the evaluations in Japan focused on the 250 GeV machine. This led to big **misunderstandings** among the media and national authorities (also some researchers) that the ILC is only at 250 GeV and has no future.  
→ Communications have restarted. → We find that most media and opinion leaders love the **energy extendibility.**

## Progress since 2019 (2)

### Japanese Government: “Interest in the ILC project”

- Mar. 7, 2019: Ministry of Education, Culture, Sports, Science and Technology (MEXT) Presentation at ICFA/LCB meeting @ Tokyo  
“will continue to discuss the ILC project with other governments while having an interest in the ILC project”
- Feb. 20, 2020: MEXT Update Statement at ICFA/LCB meeting @ SLAC
  - Response by ICFA: [https://icfa.fnal.gov/wp-content/uploads/ICFA\\_Statement\\_22Feb2020.pdf](https://icfa.fnal.gov/wp-content/uploads/ICFA_Statement_22Feb2020.pdf)



ILC International Development Team (IDT) established in Aug. 2020 to plan for the ILC Pre-Laboratory (Pre-Lab)

In the **National Diet Committees**, ILC has been subjects of Q&A many time and MEXT Ministers and other ministries have described on ILC. **MEXT Minister** Hagiuda’s comments are highly **encouraging**, and issues pointed out is **valuable** to proceed. Now pre-lab is also on the subjects in the National Diet.

### “Act Partially Amending the Act for Establishment of the Reconstruction Agency and Other Laws” (2020)

Reconstruction from the great eastern earthquake in 2011 is a domestic issue in Japan.

During the discussion of the bill to extend the Reconstruction Agency, the ILC project appeared explicitly as a supplementary resolution by both Houses of the parliament.

It is the first time for ILC to explicitly appear in the National Diet resolution. Also significant is the fact that ILC “in Tohoku” was clearly stated.



# Bottom-up approach and Top-down approach in Japan

Purely Academic Projects: institute based → Bottom-up

Scale: ~10-100 M US\$/year

SuperKEKB HL-LHC J-PARC  
Subaru Telescope  
KAGRA (Gravitational Wave)  
Hyper-Kamiokande, etc.

## MEXT processes

- SCJ (Science Council of Japan) Master Plan
- MEXT Roadmap process

*Japanese contribution to LHC (~1995) is in between the bottom-up and top-down approaches*

Big International Projects: INTER-GOVERNMENT → **TOP-DOWN (+ Bottom-up)** approaches

Top-level dialogues  
& political decision

Scale of Japanese contribution: ~200-1000 M US\$/year

Artemis Program

ITER

ISS (International Space Station)

## Prime Minister, Cabinet, Inter-Ministry

Japan has contributed to many projects.  
So far, no such projects hosted by Japan.

## ILC in Japan

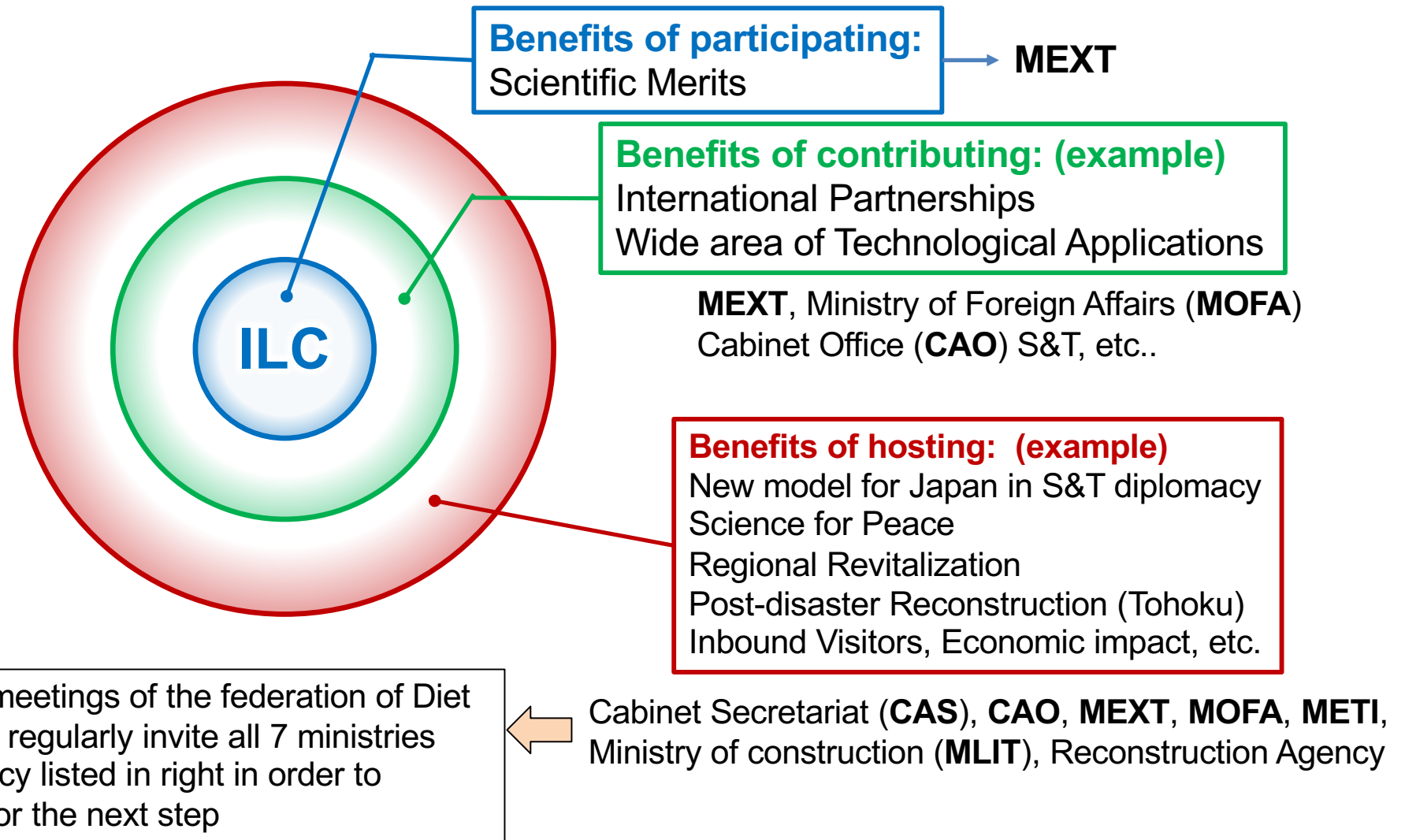
First academic **bottom-up**, then step up to **top-down**

Purpose of the project is purely academic → **MEXT bottom-up approach** ← KEK, community

Big International Projects: INTER-GOVERNMENT → **TOP-DOWN**

Special benefits and roles in hosting the project: INTER-MINISTRY = **TOP-DOWN**

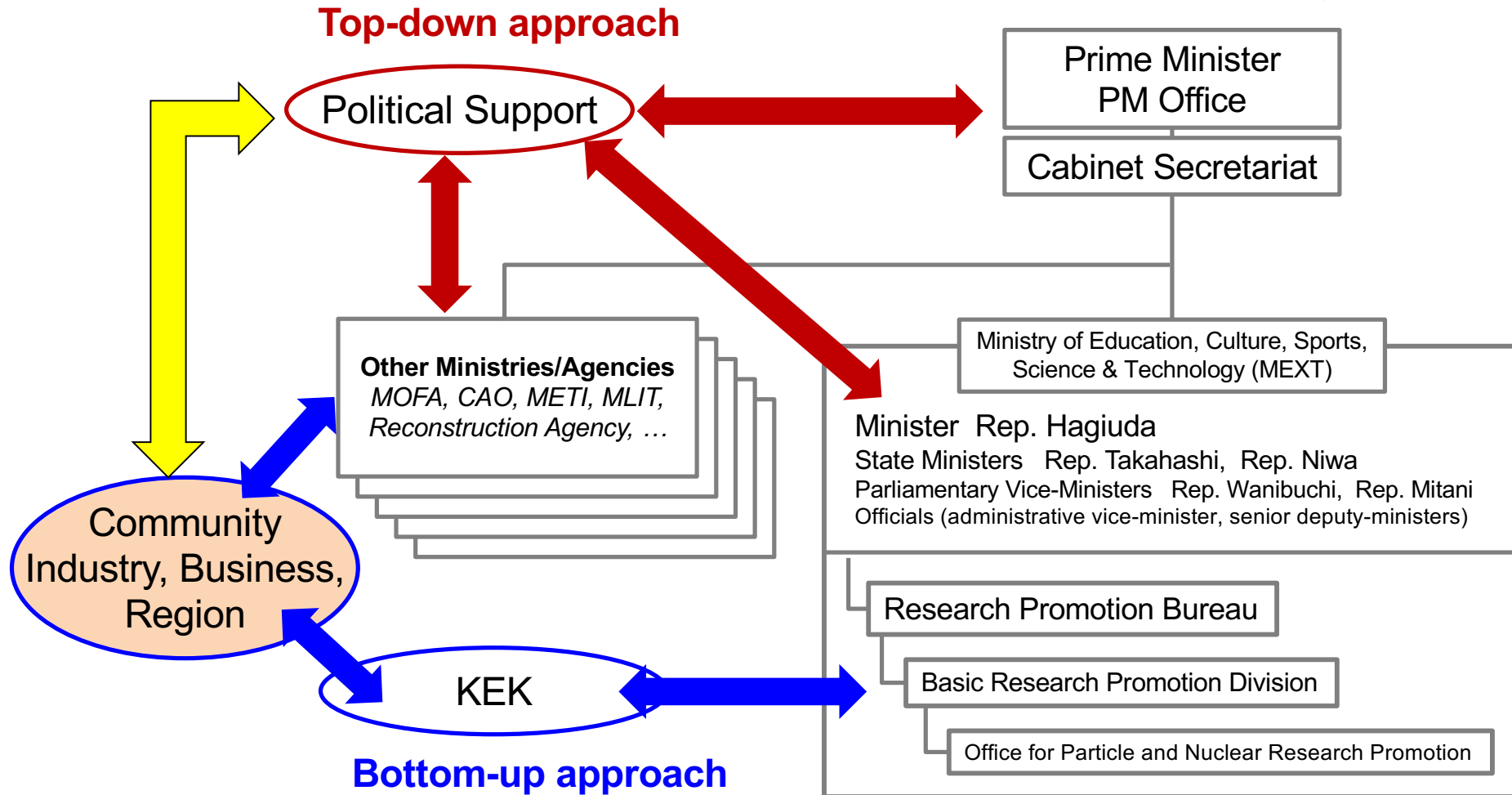
# Benefits of the ILC Project for Japan to host (views from outside of researchers community)



The decision to host the ILC requires a comprehensive analysis of the costs and benefits from the **inter-ministry's** views. ← top-down approach through political support is necessary.

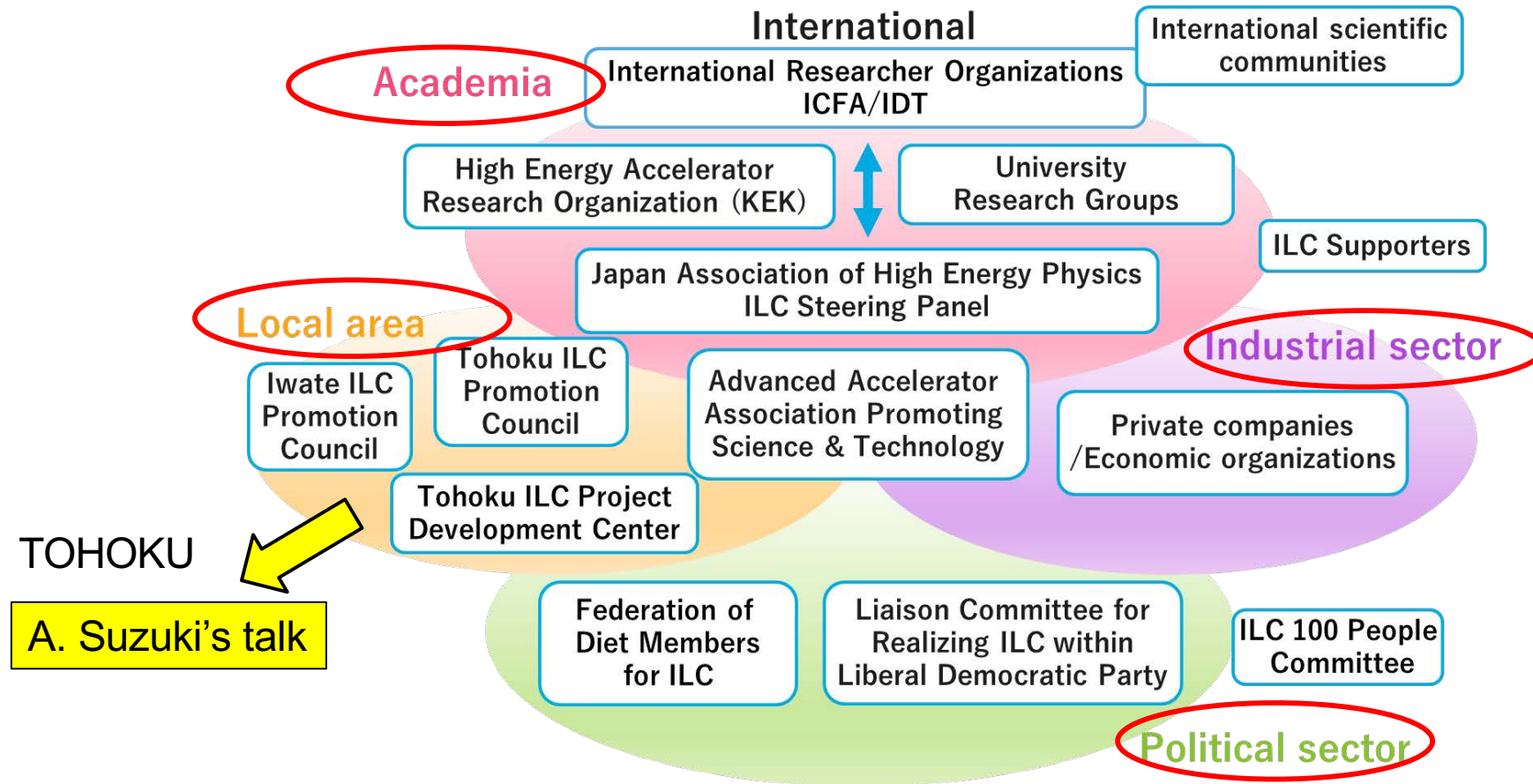
# Top-down & Bottom-up Approaches

Parliamentary Cabinet System



COVID-19 made us suspend the actions to go for the top-down approach. For these months, we have been prepared to synchronize with bottom-up efforts by KEK. **Now it's time** to start the synchronous approaches both from top-down and bottom-up

# Organizations Promoting ILC in Japan



There are many organizations in Japan which are actively promoting the ILC project. Coordination of the various sectors are key to the realization of the ILC.

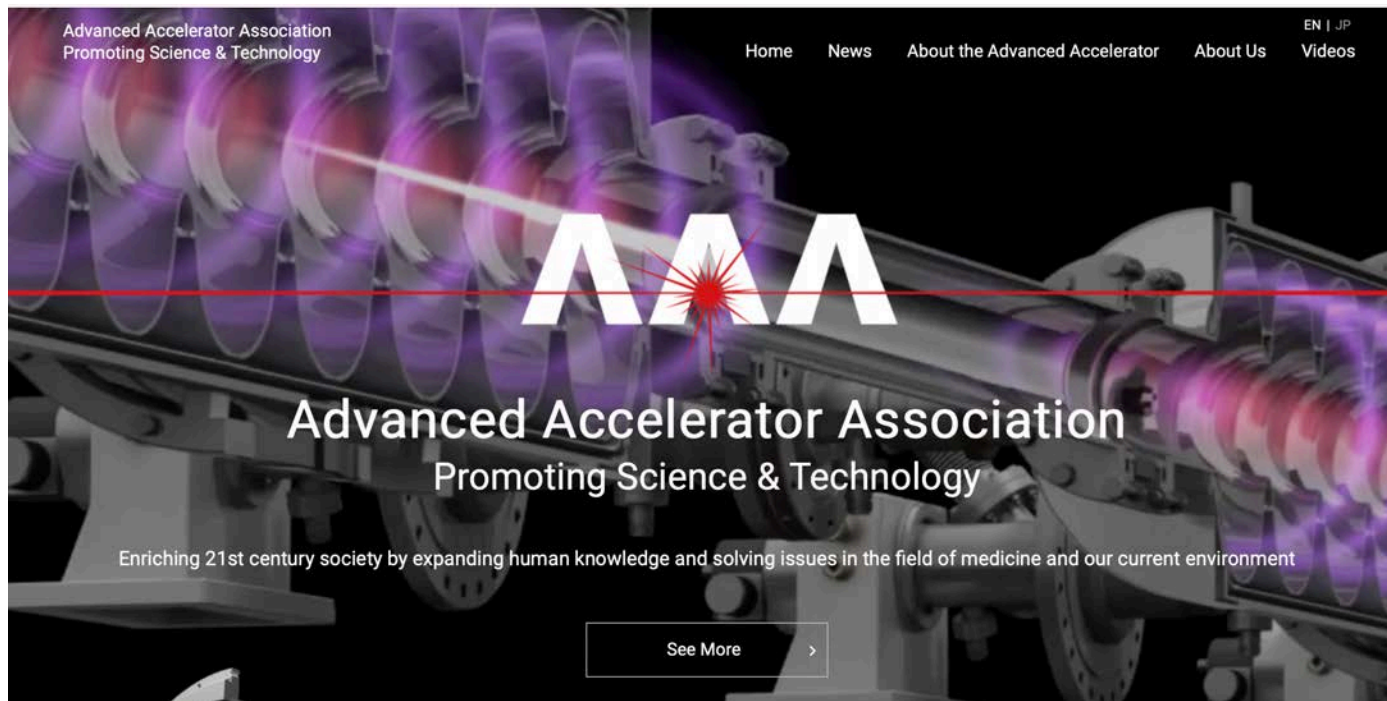
# Advanced Accelerator Association Promoting Science and Technology (AAA)

Industry-Academia organization to promote ILC

Chair: Takashi Nishioka (Former MHI CEO and Chair of the Board)

Members: 112 companies

Supporting Members: 41 institutes (as of Feb. 2020)



<https://aaa-sentan.org>

Main Divisions

1. Project Promotion
2. Technology
3. Outreach



LCWS Industry Forum  
AAA Secretary-General  
Mr. Matsuoka's talk

Established in 2008 and be General incorporated association since 2014

AAA is the driving force to promote ILC in the industrial sector with academia, led by large companies and research institutes in Japan.



# Political Sector: Federation of Diet Members for the ILC

Over 100 members of National Diet of Japan

Founded in June 2006  
with LDP members



Founder & First Chair  
Hon. YOSANO Kaoru



July 2008: Became Multi-Party Federation



February 2013:  
Hon. KAWAMURA Takeo becomes Chair



**June 30, 2009, At Prime Minister's Office  
ILC Seminar attended by 7 Ministers**

(Lecture by Prof. M. Koshiba, 2002 Nobel Prize in Physics )



YOSANO Kaoru	Minister of Finance
NAKASONE Hirofumi	Minister of Foreign Affairs
KAWAMURA Takeo	Chief Cabinet Secretary
SHIONOYA Ryu	Minister of Education, Culture, Sports, Science & Technology
NODA Seiko	State Minister in Charge of Science & Technology Policy
NIKAI Toshihiro	Minister of Economy, Trade and Industry
KANEKO Kazuyoshi	Minister of Land, Infrastructure and Transportation

*(Position at the time)*

The Federation of Diet Members for the ILC started with members of Liberal Democratic Party (LDP) and became a multi-party federation.

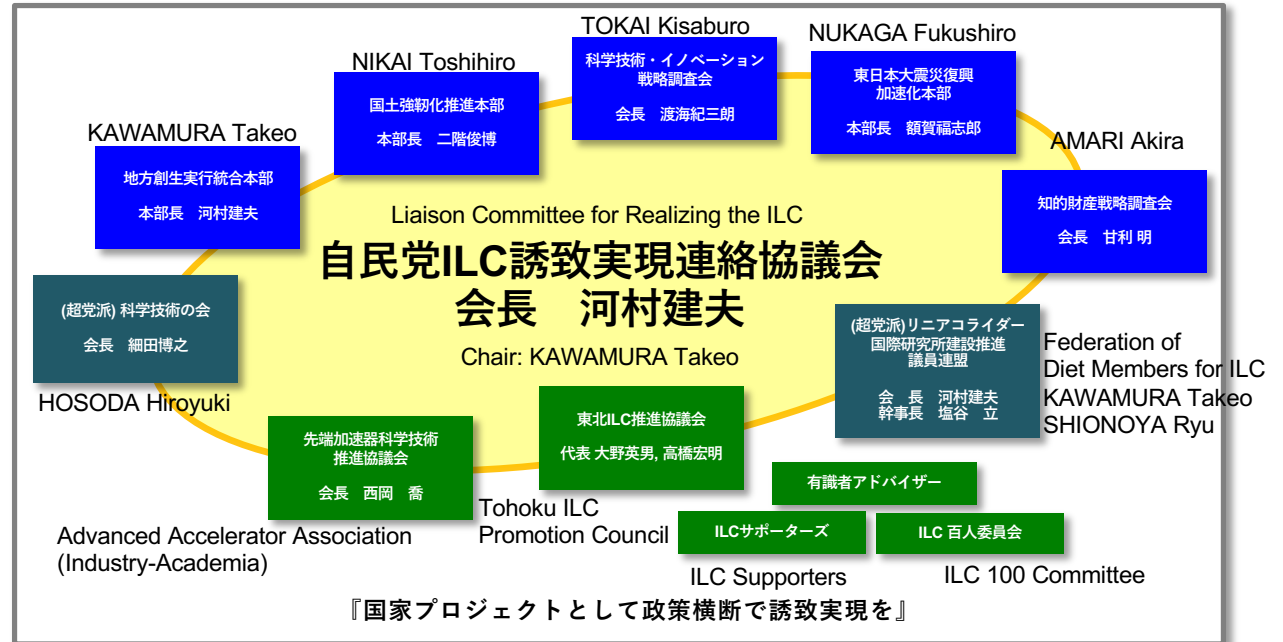
In 2009, during Prime Minister ASO Taro, an ILC Seminar was held at Prime Minister's Office building, which was attended by 7 Cabinet members.

Our current milestone is to reach this level again, which is important for the timely realization of ILC.

# Political Sector: Liaison Committee for Realizing the ILC

Liaison Committee for Realizing the ILC inaugurated on Sep. 18, 2018 with key members of Liberal Democratic Party

(Position at the time)



## Federation & Liaison Committee: Three Major Goals

### INTERNATIONAL:

- Parliament/government-level dialogues for promoting ILC

### DOMESTIC:

- Minister-level dialogues & negotiations
- Cross-ministry coordination: 8 ministries/agencies are invited to join meetings of Federation & Liaison Committee



July 5, 2018: Meeting with PM Abe

The Liaison Committee for Realizing the ILC is an organization consisting of Diet members in Liberal Democratic Party. Many influential politicians are leading the efforts for the realization of the ILC.

Japan adopts the parliament cabinet system. It is therefore important to gain support of ruling party members.

## Check list for moving ahead with the top-down approach:

- Preparation and readiness to receive the proposal of the Pre-Lab

Strong support by Diet Members (multi-party federation, LDP ruling party)  
Strong support and collaboration by industry and business sectors  
Strong support and preparations by Tohoku region  
Strengthen community-wide promotion bodies  
Desired timeline is shared among the community and various sectors

- Directions and issues are shared within the bottom-up approach

In close communication by KEK with MEXT

- Pre-Lab Proposal

First report of the IDT on the Pre-Lab Proposal is expected to come soon

### **KEY POINTS** for political and other sectors to move ahead with the **top-down approach**

- Most essential: **U.S.** direction for ILC and Pre-Lab under the new administration
- Communication with **media** (Japanese media and **abroad**)
- Synchronization with **international activities** through IDT and KEK

Very important:

- Communications with **other academic fields**



# Summary

- New effort in the Japan HEP community has launched: JAHEP ILC Steering Panel
- Strategic cooperation among politics, industry, local regions, etc. are key to the realization of the ILC. A **strong alliance is established** and is preparing for the **next step**.
- **Significant progress** has been made in **2019-2020**.
  - We are very much encouraged by the strong support expressed by the **US Government**. This is an essential pillar for Japan to move to the next step.
  - **ESPPU**: Higgs factory as the top priority → Clarified the importance of the physics. We understand that timely and clear moves of the ILC is key for the European community.
  - Extensive progress in technical and civil engineering designs through cooperation of int'l researchers, **industry-academia** collaboration and Tohoku **regional efforts**.
- Many challenges are being solved. Some will be solved during the Pre-Lab phase.
  - It is appreciated that the bottom-up efforts (KEK-MEXT) have achieved the recognition of the academic importance of the ILC and the ILC Pre-Lab. The remaining issues are being clarified.
  - The first report of the IDT on the Pre-Lab Proposal (to come soon) is highly anticipated.
- **Next big milestone** in Japan is to proceed with the **top-down** approach, synchronized with the **bottom-up** approach. We now have a good environment to move to the next step.