



**Asia-Pacific  
Economic Cooperation**

**Advancing** Free Trade  
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# Capacity Building on Development of Climate Actions for Sustainable Growth by the use of ISO14080

**APEC Subcommittee on Standards and Conformance**

December 2021





**Asia-Pacific  
Economic Cooperation**

# **Capacity Building on Development of Climate Actions for Sustainable Growth by the use of ISO14080**

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## Executive Summary

APEC needs a platform aiming to integrate the access to technological innovation and sustainable investment to implement climate actions. Until now, climate actions have focused on technical innovation. When understandings of both sides are improved through capacity building activities, financial institutions and investee could reduce financial risk against climate change and ensure the financial stabilities.

ISO14080 is relevant to all stakeholders, including governments, industries, consultants, verification bodies, accreditation bodies, investors and financial institutions, and alignment of their climate action can contribute to achieve the National Determined Contribution (NDC).

It would be effective approach of ISO 14080 if climate actions policy by government calls for participation of all stakeholders autonomously, and each industrial sector can autonomously set climate goals and targets and implement climate actions. When the future revision of ISO14080 would include the requirements and guidance related to this, it would be more beneficial for enhancement of the alignment of climate actions among APEC economies.

In the context of climate change mitigation and adaptation measures, it is relevant to understand how to facilitate transition and the selection of methodologies in the long-term vision. By documenting and recording the priorities, selection and justification of methodologies of climate actions toward transitions. The methodology which is not able to be selected due to financial and technical barrier can be considered next generation for use.

We learned that ISO 14080 can use the reports of climate actions among inter-governments to prepare the Biennial Update Report on Climate Change to UNFCCC, according to the show case presented by the ministry of energy in Chile.

In order to reduce the burden of reporting the non-financial information disclosure in developing economies, it is necessary to align the information disclosure mechanism. ISO and its relevant TC should consider harmonization of the common reporting methods to contribute the discussion on sustainable finance in the process of review and revision of the relevant international standards for climate actions and sustainable finance.

By utilizing Digital MRV and set the measurement points appropriately, GHG information can be collected and managed by automatic measurement, and it would be a great support in particular developing economies in the APEC region. In addition, by using such digital and IoT technologies, the validation and verification of climate actions and/or projects can be simplified by conducting such works remotely, and the activities of accreditation bodies well as validation and verification bodies can be conducted more efficient and cost effective manner.

The blockchain system for GHG registry and GHG projects prevents double counting among climate actions, and the centralized information with methodology profiles, co-benefits of climate actions and ESG information on these block chain platform can support the GHG management and outcome of the climate actions transparent for APEC regions.

## **Project Objectives**

Under the Paris Agreement, each economy shall prepares their own Greenhouse Gas (GHG) reduction target, so called Nationally Determined Contribution (NDC). The purpose of this capacity building project with ISO14080 is to support the achievement of NDC of each economy. ISO14080 can be used as tool to build the basis of management methods of the GHG emission data, which should be quantified by a consistent, comparable and transparent approach. This project also supports voluntary based approaches of the private sector to reduce GHG, because ISO 14080 is a potential tool to incorporate their voluntary activities into the NDC. This project promotes Sustainable Growth by improving environmental integrity and transparency of climate actions.

## **Workshop Objectives**

Two workshops were planned in this project. See Annex 1 for the workshop agenda.

The first workshop in Jakarta aims to raise awareness of climate actions among SMEs, NGOs and the public sector and to encourage them to develop climate actions.

Topics of the first Workshop are as follows:

- Connection of UN SDGs and climate action
- Paris agreement and related actions
- Connection of ISO 14080 and climate action
- Government sectoral approach and NDCs (Nationally Determined Contributions)
- Example of climate actions, including potential actions and regional level action
- Communication of NDC and climate actions
- Climate action and the management of NDCs
- Contribution to UN SDGs and climate change

The second workshop aims to provide information on how to develop effective climate actions for high energy impact industries using innovative technology, and how financial institutions (i.e. climate finance and green project finance) can support them.

Topics of the second Workshop are as follows:

- Data management using digital MRV
- Report and communication exercise to compare climate actions between government and industries
- How to use innovative technology and the green and sustainable finance in related to climate action
- Verification and assessment for climate actions and assurance related green and sustainable finance
- Blockchain and Digital MRV for future efficient and effective verification

## **Conclusion**

### **Challenge of climate actions**

The climate actions toward Paris Agreement vary among private and public actions, and there is no consistent and harmonized approach nor methodologies to compare the outcome of climate actions among national, regional, international initiatives. The existing framework of climate actions with methodologies are not sufficiently transparent.

The relevant GHG data collections and the management for climate actions are technical and financial barrier for SMEs in developing economies in the APEC region. There is a strong need for harmonization of the credible GHG data and GHG emission reduction methodologies.

On the stage of implementing NDCs, the climate actions challenge how to monitor the achievement of NDC target, and how to avoid the double counting. It is highly expected to share how to facilitate transition and the selection of methodologies in the long-term vision for climate mitigation and adaptation measures, in particular the road map of climate action towards 2050.

It is another challenge to investee to understand how to access the incentive over climate actions, in particular, how climate action can be bankable and motivated to sustainable finance.

The documentation and expected information disclosure for climate actions and sustainable finance are technical burden for investee and financial institutions, in particular in developing economies.

Furthermore, it is recognized that the documentation and required information disclosure are not consistent among ISO14080 methodology profile (Annex E), green bonds (ISO14030 series), and the documentation for climate finance (ISO14097).

### **Discussion and Lesson learned over the workshops**

ISO14080 is relevant to all stakeholders, including governments, industries, consultants, verification bodies, accreditation bodies, investors and financial institutions, and alignment of their climate action can contribute to achieve the NDC. It would be effective approach of ISO 14080 if climate actions policy by government calls for participation of all stakeholders autonomously, and each industrial sector can autonomously set climate goals and targets and implement climate actions. When the future revision of ISO14080 would include the requirements and guidance related to this mechanism, it would be more beneficial for enhancement of the alignment of climate actions among APEC economies.

We learned that ISO 14080 can use the reports of climate actions among inter-governments to prepare the Biennial Update Report on Climate Change to UNFCCC, according to the show case presented by the ministry of energy of Chile

In addition to this, ISO 14080 can facilitate consolidating climate actions and also avoiding the double counting by using a suitable methodology profile that can compare with the outcome of climate actions easily, and demonstrate co-benefits of climate action and SDGs actions. The methodology which is not able to be selected due to financial and technical barrier can be considered next generation for use.

ISO 14080 can connect innovation of the climate actions and sustainable finance. Financial institutions can learn that climate actions governed by investee reduce climate risk and increase opportunities. The example can be provided for financial institutions and investees, as well as private funds and governments managing financial supports and incentives for climate actions. The climate actions needs to disclose proper information to financial institutions.

Until now, climate actions have focused on technical innovation. APEC needs a platform aiming to integrate the access to technological innovation and sustainable investment. When understandings of both sides are improved, the financial institutions and investee could reduce financial risk against climate change and ensure the financial stabilities.

It is challenging for climate action's project owners in developing economies to bear the costs for the initial installation required to automatically measure and manage such projects, and these costs shall be covered by sustainable finance.

When the measurement points are set appropriate, GHG information can be collected and managed by digital MRV automatically, and it would be a great support in particular developing economies in the APEC region. For example, when the same methane collection projects can be bundled are implemented in different economies, project management and related GHG management will be easier. And by using digital and IoT technologies, the validation and verification of climate actions and/or projects can be simplified by conducting such works remotely, and the activities of accreditation bodies as well as validation and verification bodies can be conducted more efficient and cost effective manner.

Digital MRV and related blockchain technology support the global scale GHG emission reductions if traded units are real, credible, and not double counted. With such diverse and separate blockchain systems are used under the Paris Agreement, it is difficult to have a clear picture of overall market activity. The Climate Warehouse is testing the use of blockchain to facilitate connections across an economy's or institution's registry system. A key objective is to build transparency and identify double counting risks in the context of decentralized carbon markets.

Lessons learned from the simulation, the blockchain system for GHG registry and GHG projects prevents double counting among climate actions. The centralized information with methodology profiles of Annex E of ISO 14080, co-benefits of climate actions and the ESG information on these block chain platform can support the GHG management and outcome of the climate actions transparent for APEC regions.

## **Recommendations**

APEC needs a platform aiming to integrate the access to technological innovation and sustainable investment to implement climate actions. When understandings of both sides are improved through continuous capacity building activities, financial institutions and climate actions of the investee could reduce financial risk against climate change and ensure the financial stabilities.

ISO 14080 should be reviewed and revised to introduce relevant requirements and provide guidance to mandate stakeholder's dialogues between inter-governments and industrial sectors to develop a strategic plan of climate actions toward long-term visions of NDC.

In order to reduce the burden of reporting the non-financial information disclosure in



developing economies, it is necessary to align the information disclosure mechanism. ISO and its relevant TC should consider harmonization of the common reporting methods to contribute the discussion on sustainable finance in the process of review and revision of the relevant international standards for climate actions and sustainable finance.

## Annex 1: Workshop Agenda

### Agenda of the first workshop

Time	Schedule of Day 1 (Tuesday, 14 January 2020)
8:00-8:30	Registration
8:30-8:40	Opening remarks
8:40-9:00	Agenda 1: Connection of UN SDGs and climate action - Mr Noer Adi Wardoyo, Ministry of Environment and Forestry
9:00-10:20	Agenda 2: Paris agreement and related actions - Mr Kenjiro Suzuki, UNFCCC Secretariat
10:20-10:25	Photo session
10:25-10:40	Coffee break
10:40-12:00	Agenda 3: ISO14080 and climate action - Ms. Chikako Makino, Japan Accreditation Board
12:00-13:00	Lunch
13:00-15:00	Agenda 4: Government sectoral approach and NDCs (Nationally Determined Contributions) 13:00-13:20 - Japan: Mr Takashi Omote, Ministry of Economy, Trade and Industry 13:20-13:50 - Thailand: Mr Pathom Chaiyapruksaton, Thailand Greenhouse Gas Management Organization 13:50-14:20 - Russia: Ms Anna Mudrova, Federal Service for Accreditation 14:20-15:00 - Chile: Mr Francisco Dall'Orso León, Ministry of Energy - China: Mr Liang Sun, China National Institute of Standardization(CNIS)
15:00-15:30	Coffee break
15:30-17:00	Agenda 5: Example of climate actions, including potential actions and regional level actions 15:30-15:50 - Indonesia (LED): Dicky Edwin Hidalgo, Advisor for Indonesia Joint Crediting Mechanism 15:50-16:10 - Indonesia (REDD Plus): Franky Zamzani, Kasubdit REDD+ DirektoratMitigasiPerubahanIklim 16:10-16:40 - Thailand (carbon footprint): Mr Pathom Chaiyapruksaton, Thailand Greenhouse Gas Management Organization 16:40-17:00 - Japan (Biofuel): Ms Chikako Makino, Japan Accreditation Board

Time	Schedule of Day 2 (Wednesday, 15 January 2020)
8:00-8:30	Registration
8:30-12:00	Agenda 6: Profiling of climate actions, using Annex E of ISO14080 (group exercise to make profiling operation models to share among APEC economies)
12:00-13:00	Lunch
13:00-17:00	Agenda 7: Improvement of the profiling Agenda 8: Communication of NDC and climate actions

Time	Schedule of Day 3 (Thursday, 16 January 2020)
8:00-8:30	Registration
8:30-10:00	Agenda 9: Climate action and the management of NDCs

10:00-11:50	Agenda 10: Contribution to UN SDGs and climate change
11:50-12:00	Closing remarks
12:00-13:00	Lunch

### Agenda of the Second Workshop

<b>Part 1</b>	Theme: Climate action and sector action: June
Supplemental Workshop I July 7	Agenda 1: Climate action and access to the sectors, mitigation and adaptation
Virtual Workshop II June 23	Agenda 2: Climate action and value for industries activities among APEC regions Agenda 3: Keidanren's Actions on Climate Change Agenda 4: Example of climate actions, including mitigation, adaptation and resilience by sectors: Steel, Electric, other sectors
Virtual Workshop III June 30	Agenda 5: Contribution to Profiling of sectoral climate actions, using Annex E of ISO14080 (group exercise to make profiling operation models to share among APEC economies) for industries

<b>Part 2</b>	Theme: Climate action and access to sustainable finance: July
Pre-workshop Assignment	Agenda 6: Sustainable finance value in APEC regions Example of governments
	Agenda 7: Sustainable finance in APEC regions Example of financiers (banks and insurances):
Virtual workshop IV July 14	Agenda 8: Climate action and access to sustainable finance: Paris agreement and related actions ISO 14030: Green bonds ISO 14100: Green Finance: Assessment of Green Financial Projects ISO 14097: Climate finance
Virtual workshop V July 22	Agenda 9: Contribution to climate action to sustainable finance (group discussion)

<b>Part 3</b>	Theme: Digital MRV and future verification including block chain: August and September
Virtual workshop VI August 31	Agenda 10: Data management using digital MRV and financial support for climate action • Data management using digital MRV and ISO14080 • Documenting and reporting the climate action • Discussions on the verification approach for the management of NDCs and information disclosure for sustainable finance.
Virtual workshop VII September 8	Agenda 11: Evaluation of climate action and its contribution to Paris agreement and Improvement of the profiling • Assessment of green finance • Expected outcome by accredited verification and related assessment for the actions. • Evaluation of the outcome though climate action for the contribution to Paris agreement. (mitigation and adaptation)

## **Annex 2: Presentations at the Workshops**

### **Climate action and access to the sectors, mitigation and adaptation**

#### **Agenda 2 Keidanren's Actions on Climate Change**

Presented by Mr Masami Hasegawa  
Director, Environment and Energy Policy Bureau  
Japan Business Federation, Keidanren

“Keidanren’s Commitment to a Low Carbon Society” has laid emphasis on CO<sub>2</sub> reductions toward 2030 with a view to contributing to Japan’s mid-term reduction target under the Paris Agreement. As the world’s concerns and expectations become increasingly focused on achieving Carbon Neutrality by 2050, Keidanren has newly positioned the achievement of Carbon Neutrality as the most important target to reach for, and renewed “Keidanren’s Commitment to a Low Carbon Society” as “Keidanren Carbon Neutrality Action Plan” in June 2021. The results of Keidanren Carbon Neutrality Action Plan from 2013-2019; approximately 10.7% reductions in 6 years.

In June 2020, a comprehensive climate change initiative, “Challenge Zero” (“Challenge Net Zero Carbon Innovation”) was launched to accelerate the construction of a decarbonized society through innovation. Through “Challenge Zero”, Keidanren, in cooperation with the Japanese government, publicizes strongly and encourages innovation actions that companies (including industrial organizations and related organizations) take to realize a decarbonized society, both in Japan and abroad. Keidanren encouraged its members to participate in the Challenge Zero, and on June 8th, Former Chairman Nakanishi announced the launch of Challenge Zero at his press conference. 137 companies and organizations participated and announced 305 challenges then. As of 15 June 2021, 187 participants have announced 392 challenges.

Areas of Challenge Zero are as follows;

- Development of net-zero emission technologies (including transition technologies)
- Dissemination and implementation of net-zero emission technologies
- Finance for companies that are engaged in the above challenges

#### **Agenda 3: Climate action and value for industries activities among APEC regions**

##### **Keidanren’s Commitment for Low Carbon Society ~ An example of ISO-14080 ~**

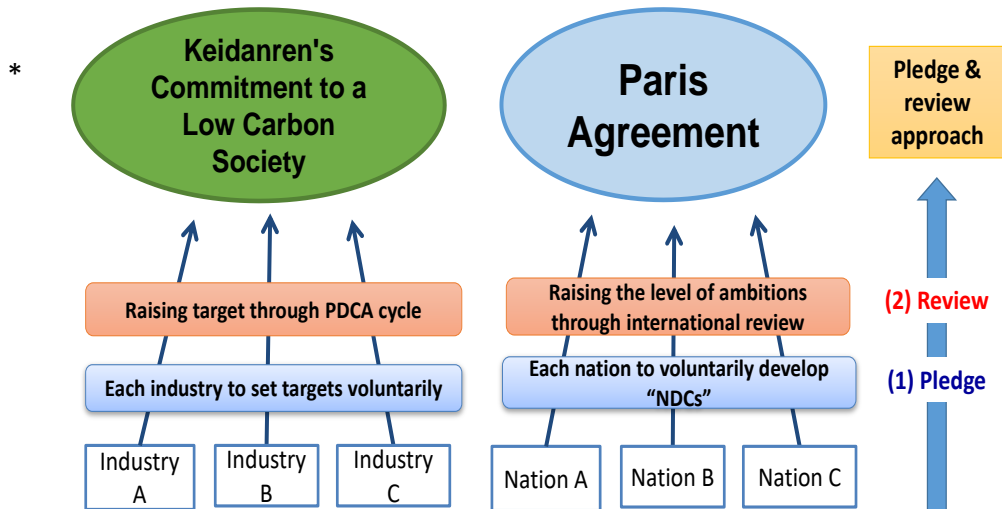
Presented by Mr Hiroyuki Tezuka,  
Fellow & General Manager  
Climate Change Policy Group  
Technology Planning Department  
JFE Steel Corporation

Japanese Government, industries and companies accumulated knowledge and know-how on Climate Actions in Keidanren’s voluntary activities.

Voluntary CO<sub>2</sub> reduction actions by Japanese industrial sector

- 60 industries including steel have pledged to the voluntary CO<sub>2</sub> reduction targets towards 2020 and 2030 under “Commitment to a Low-Carbon Society”
- “Commitment to a Low-Carbon Society” and “Paris Agreement” have the same framework

Japan's NDC for the Paris Agreement has been prepared on a bottom-up basis taking into account specific policies and measures in major sectors, with the contents made clear, which makes it highly transparent and concrete. The government evaluated/verified the plans through advisory councils, in order to ensure the achievement. Follow-up activities were conducted annually.



#### Agenda 4

#### Example of climate actions, including mitigation, adaptation and resilience by sectors

#### Activities of Japanese Steel Industry to Combat Global Warming

Presented by Dr Hitoshi Dohnomae  
 The Chair for International Environmental Strategic Committee  
 The Japan Iron and Steel Federation: Steel sector

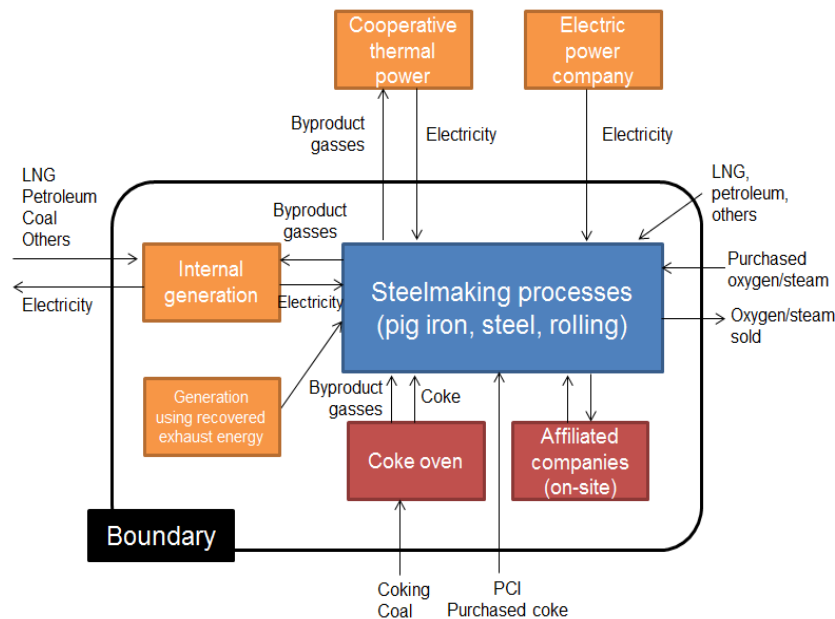
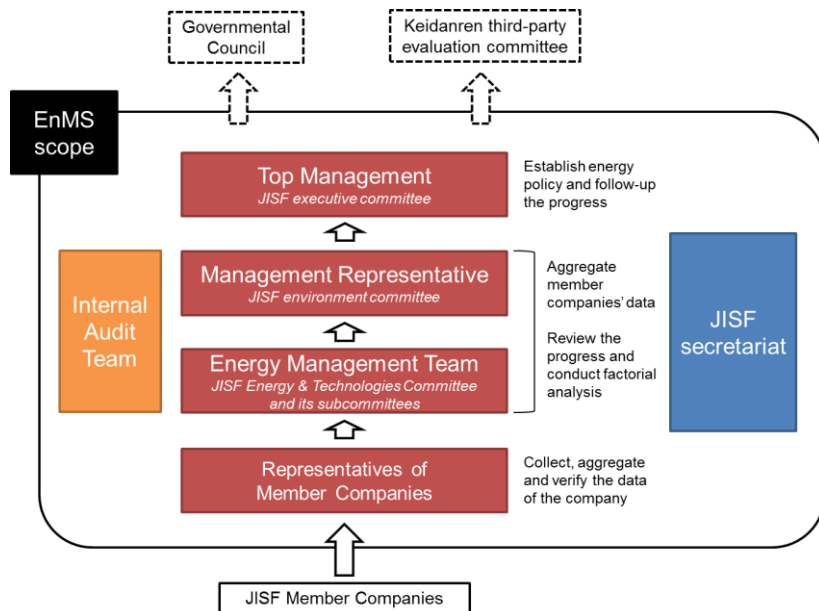
The Japanese steel industry has been promoting Three Ecos measures to combat global warming:  
 The first is Eco Process: efficiency improvement of production process; the second is Eco Solution: global contribution by the transfer of energy conservation technologies and equipment; and the third is Eco Product: contribution from use of high-grade steel in finished products.

#### 1. Eco Process

Eco Process is the initiative applying ISO 14080

JISF's PDCA cycle for CO<sub>2</sub> reduction actions

- CO<sub>2</sub> reduction actions of Japanese steel industry are based on PDCA (Plan, Do, Check and Act) cycle with the aim to improve the energy performance, which complies with ISO50001
- JISF has complied with ISO50001 (Energy Management) since 2014



JISF annually undergoes performance review by the governmental council and Keidanren (Japan Business Federation) for its voluntary CO<sub>2</sub> reduction initiative “JISF’s Commitment to a Low Carbon Society”.

## 2. Eco Solution

The Eco Solution is an initiative to help developing economies combat global warming. It consists of (i) public and private meetings, (ii) Technology Customized List (TCL) and (iii) steel plant diagnosis.

(i) The public-private meetings have been held with China since 2005, with India since 2011, and with ASEAN since 2014, introducing Japanese energy-saving technologies and helping to spread them.

(ii) Technologies Customized List, a technology reference covering recommended technology for individual economies and regions. India version and ASEAN version are available. The benefit of technology implementation is clearly demonstrated:

-Indicate CO<sub>2</sub> reduction effect and payback time for the collaborative economies or region, based on economy-based energy prices, plant installation cost and CO<sub>2</sub> emission factor

-Technologies listed on TCL are reliable. Effects of the technologies are proven through Japanese steelmakers' operating experiences

-Easy to reach out to further information when necessary.

Include in contact detail of supplier companies which have the best available technologies

(iii) Steel plant diagnosis is an activity in which Japanese experts visit steel mills in India and ASEAN to diagnose the actual energy use of steel mills and recommend energy efficiency and conservation technologies listed in the TCL. So far, 12 steel mills in India and 14 steel mills in ASEAN have been diagnosed.

### **Climate Actions of Electric Power Industry in Japan**

Presented by Mr Taku Miyata

General Manager

Siting, Power Generation and Environment Department

The Federation of Electric Power Companies

In 2016, the joint framework led the establishment of the Electric Power Council for a Low Carbon Society (ELCS) with 42 companies. (FEPC is the Secretariat of ELCS.)

ELCS was established as an overall framework of electric power industry, and it has contributed to Japan's policies that are consistent with the current NDC to the Paris Agreement. The framework is not regulated by Government of Japan and all activities in the framework are voluntary under the "pledge and review" system, however, ELCS and its member companies strive to reduce CO<sub>2</sub> emissions, and the outcomes of their climate actions are steadily approaching the 2030 Target. These are successful examples of the framework for climate actions on a voluntary basis, and the effectiveness of such framework is shown by the electric power industry in Japan.

Especially for the power supply in 2030, ELCS sets the following quantitative targets in the Action Plan;

-ELCS contributes to realizing the nationwide average emission factor of approx. 0.37kg-CO<sub>2</sub>/kWh in 2030, which GOJ expected as an ideal emission factor at the user end based on the "Energy Mix". Therefore, the target is consistent with Japan's energy policy.

- Moreover, ELCS estimates CO<sub>2</sub> emissions reductions approx. 11Mt-CO<sub>2</sub> as the maximum reduction potential in 2030 by utilizing the economically achievable best available technologies (BATs) when constructing new thermal power plants.

Cases of methodologies taken by member companies:

— Renewable energy

- Currently almost all member companies operate and/or sell renewable energy such as solar PV, onshore and offshore wind power, hydropower, biomass, geothermal, etc.

- Some companies are carrying out the R&D projects on the innovative technologies, which secure the stability of power systems even when the large amounts of solar PV and wind power fluctuated by weather are introduced into the power systems.

- Some companies are working on demonstration experiments in which they install the hydrogen generator by electrolysis beside the solar PV systems. They try to convert the surplus electricity into hydrogen for energy storage and utilization as carbon neutral resources.

— Thermal power

- Given the current energy supply and demand structure in Japan, thermal power generation still plays a quite essential role. Therefore, it is especially important and effective for the Electric Power industry to improve the efficiency of thermal power plants.
- Some member companies are striving to maintain and improve the efficiency of thermal power plants. They introduce highly efficient equipment with the latest design when installing new power plants, and they pursue the appropriate operation and maintenance for the existing plants.

— International cooperation

- Some member companies assist developing economies to reduce CO<sub>2</sub> emissions through providing consulting services and supporting cooperation activities.
- Some companies participate and invest in Electric Power businesses abroad, which provide customers with electricity generated by highly efficient thermal power plants with the latest technologies and by renewable energy sources.
- Some companies participate in projects under the Joint Crediting Mechanism (JCM) initiated and operated by GOJ and host economies.
- By implementing these international cooperation, the total amount of CO<sub>2</sub> emissions avoided is estimated to be approx. 13.3Mt-CO<sub>2</sub> per year in 2019.

Progress in ELCS's climate actions

— Industry-wide average CO<sub>2</sub> emission factor

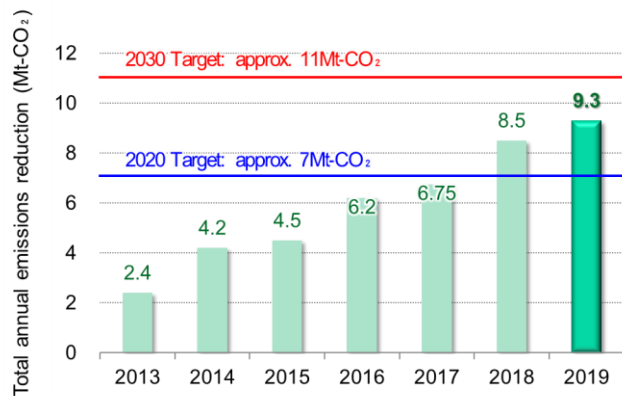
- With regard to the 2030 Target on emission factor (EF), ELCS's average EF at the user end has continuously decreased from 0.567kg-CO<sub>2</sub>/kWh in 2013 to 0.444kg-CO<sub>2</sub>/kWh in 2019 by 22%, steadily approaching the ideal EF in 2030 of approx. 0.37kg-CO<sub>2</sub>/kWh that Government of Japan expects.
- ELCS member companies also decreased their total amount of CO<sub>2</sub> emissions by 148Mt-CO<sub>2</sub> in 2019, a 30% reduction compared to 2013.
- These results are mainly due to the constant voluntary contributions of member companies based on their Corporate Action Plans, such efforts as expanding the use of non-fossil energy sources and improving the efficiency of thermal power plants.

— Emissions reduction by utilizing BATs at thermal power plants

- With regard to another targets, the total annual emissions reduction compared to business as usual (BAU) by utilizing the economically achievable best available technologies (BATs) at the thermal power plants of member companies reached 9.3Mt-CO<sub>2</sub> in 2019.
- The results have already exceeded the 2020 Target of 7Mt-CO<sub>2</sub> as the maximum reduction potential, and they are steadily approaching the 2030 Target of 11Mt-CO<sub>2</sub>.
- These are also due to the constant voluntary contributions of member companies, such efforts as replacing aged power plants, installing high-efficiency equipment when constructing new plants, and retrofitting existing equipment to maintain thermal efficiency as high as possible.



- Annual CO<sub>2</sub> emissions reduction by utilizing BATs



Source: ELCS

## Agenda 6: Sustainable finance value in APEC regions

### Example of Governments

#### **Sustainable Finance and Climate Transition: Green and Transition?**

Presented by Mr Satoshi IKEDA  
 Chief Sustainable Finance Officer  
 Financial Services Agency of Japan (JFSA)

- WEF: Global Risk by Likelihood 2021
- WEF: Global Risk by Impact 2021
- Global Mean Temperature Rise
- Economic Impact of Climate Change on the World
- Hypernorms: Economic Development and Ecological Footprints
- Investment Need for Decarbonization
- Components of Climate Finance
- Overview of EU Sustainable Finance Actions
- Concept of EU Taxonomy
- Application of EU Taxonomy
- New EU Sustainable Finance Action Strategy
- Singapore's Approach: Environmental Objectives & Focus Sectors
- Singapore's Approach: Traffic Light System
- Japan's Approach: Climate Innovation Finance Strategy 2020
- Report by the Expert Panel on Sustainable Finance (Overview):  
 Building a Financial System that Supports a Sustainable Society

**Report by the Expert Panel on Sustainable Finance (Overview)**  
**Building a Financial System that Supports a Sustainable Society**

2021.6.18

**Chapter 1 Basic concept**

**Underlying Principle**

Sustainable finance is an infrastructure that supports sustainable social and economic systems. It should be driven not only by private initiatives but by policy initiatives.

**Overarching Issues**

Consideration of ESG factors is favorable to fulfill fiduciary duties.

A wide range of approaches needs to be sought to raise awareness and accumulate business practices regarding impact finance.

It is important to participate in international discussions on taxonomies for sustainable activities and promote transition finance (including the formulation of roadmaps for high emission industries).

**Chapter 2 Enhance Corporate Disclosure**

Broad discussion needs to be held on appropriate corporate disclosure regarding sustainability for constructive dialogue with investors and financial institutions.

**Sustainability**

Towards **comparable and consistent sustainability reporting standards** worldwide, it is important to actively participate in the process of developing sustainability reporting standards at the IFRS Foundation.

**Climate Change**

Following the revisions of the Corporate Governance Code (June 2021), **the quality and quantity of climate-related disclosure should be enhanced** based on the TCFD recommendations or an equivalent framework. Continued discussion is recommended with close attention paid to international development.

**Chapter 3 Demonstrate Capital Market Functions**

Developing a "green international financial center" can contribute to more loans and investment towards sustainable societies in Asia and rest of the world. Market participants need to play their role to demonstrate capital market functions.

**Institutional Investors**

Institutional investors should enhance **ESG investments and engagement with investees**. They should seek to accumulate knowledge and skills in this regard, for instance by participating in global investors' initiatives that collectively call for decarbonization of invested corporations.

**Opportunity for Retail Investors**

Asset managers should **carefully explain the characteristics of an ESG-related investment trust** at its establishment and distribution, and **be accountable for ESG aspects of the selected issues** on an ongoing basis. The FSA should monitor asset managers in this regard.

**ESG Rating and Data Providers**

FSA is encouraged to promote discussions on issues of **ESG rating and data providers**, including **code of conduct**.

**ESG Platform**

As illustrated by initiatives of foreign securities exchanges, it is encouraged to develop a platform for practical information of ESG-related bonds including green bonds and a mechanism which provides **objective certification of the eligibility of ESG-related bonds**.

**Chapter 4 Financial Institutions' Support for Borrowers and Risk Management**

Financial institutions need to support the transition of the real economy, integrating sustainability opportunities and risks into their business strategies and risk management.

**Support for Borrowers**

To **support loan recipients and investees' climate transition**, financial institutions are expected to accumulate know-how, improve skills, and develop analytical tools.

**Risk Management**

FSA should continue to discuss with financial institutions the effective use of scenario analysis and encourage them to **develop a risk management system for climate change** (supervisory guidance on climate transition support and risk management to be developed).

**Japan's Approach: Climate Transition Finance Guidelines**



**The Basic Guidelines on Climate Transition Finance**  
**FSA, MOE, METI**  
**(7<sup>th</sup> May, 2021)**

- International consistency (Four elements)
- Guide to practice transition finance
- Possible diversity by regions and industries

**Japan's Approach: Basic Guidelines on Climate Transition Finance**

**Japan's Approach: Sector-specific Roadmaps**

**TCFD Consortium of Japan**

**TCFD: Alignment of Transition Plan Elements with TCFD Pillars**

**Features of the Japan's Approach to Green and Transition in Climate**

- A dynamic approach rather than a dichotomy. Encourage energy conservation as well as innovation to achieve carbon neutrality
- Accordingly, accommodate multiple pathways towards carbon net zero as far as being credible and science-based.
- A decentralized system. The system can evolve flexibly over time adjusting to new realities while being anchored by a minimum set of principles and sector-specific roadmaps.

## Climate action and access to sustainable finance

### METI's initiatives

Presented by Ms Motoko Ogawa

Deputy Director of Environmental Economy Office

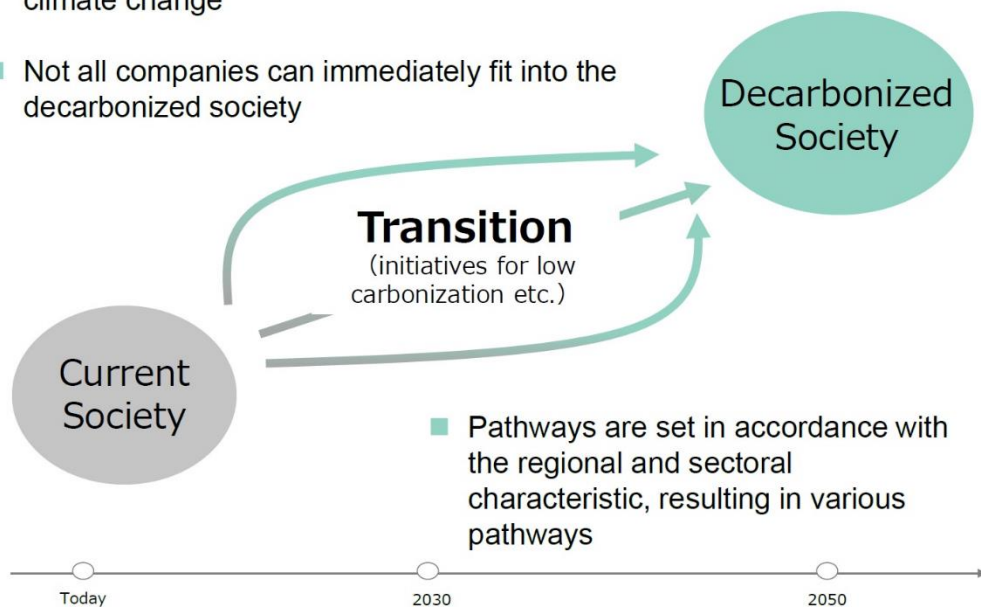
Industrial Science and Technology Policy and Environment Bureau

Ministry of Economy, Trade and Industry, the Government of Japan

Transition finance is an important tool to reach carbon neutrality by 2050

## The Importance of Transition Finance

- Transition can contribute to the mitigation of climate change
- Not all companies can immediately fit into the decarbonized society



## Basic Guidelines on Climate Transition Finance

### What is the Basic Guidelines

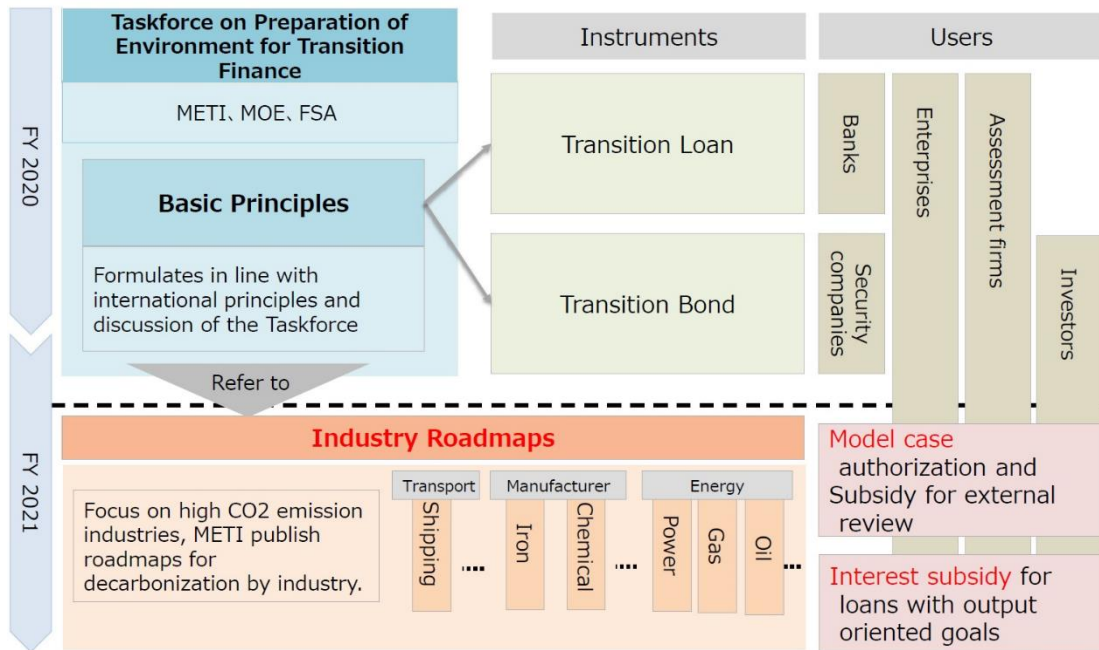
- Consistency with the ICMA Climate Transition Finance Handbook
- A general guide for fundraisers and financial institutions in labeling transition bonds and loans
- The Basic Guidelines does not specify transitional assets nor trajectories of each industry..

### Content

- Comprehensive judgement based on strategies
- In addition to scenarios widely recognized in the international community, **NDC and roadmaps formulated by public organizations can be referred to.**

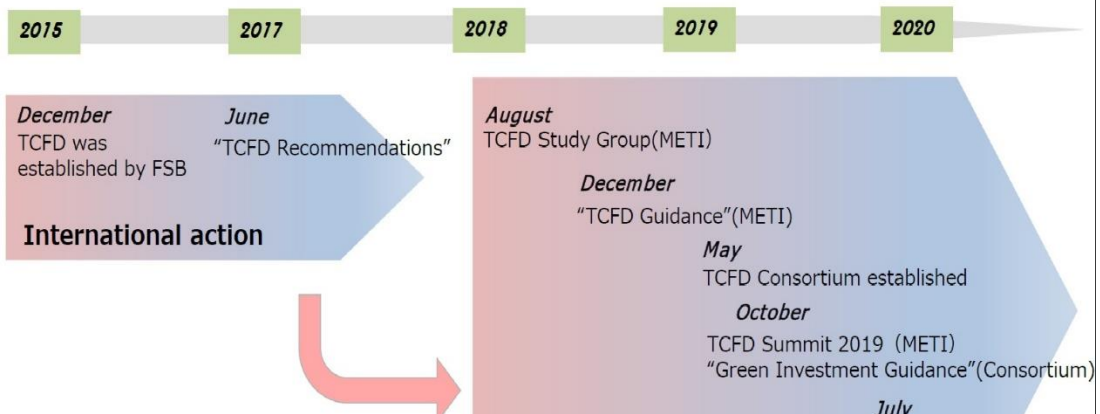


## Taskforce on Preparation of the Environment for Transition Finance, Basic Principles and Roadmaps



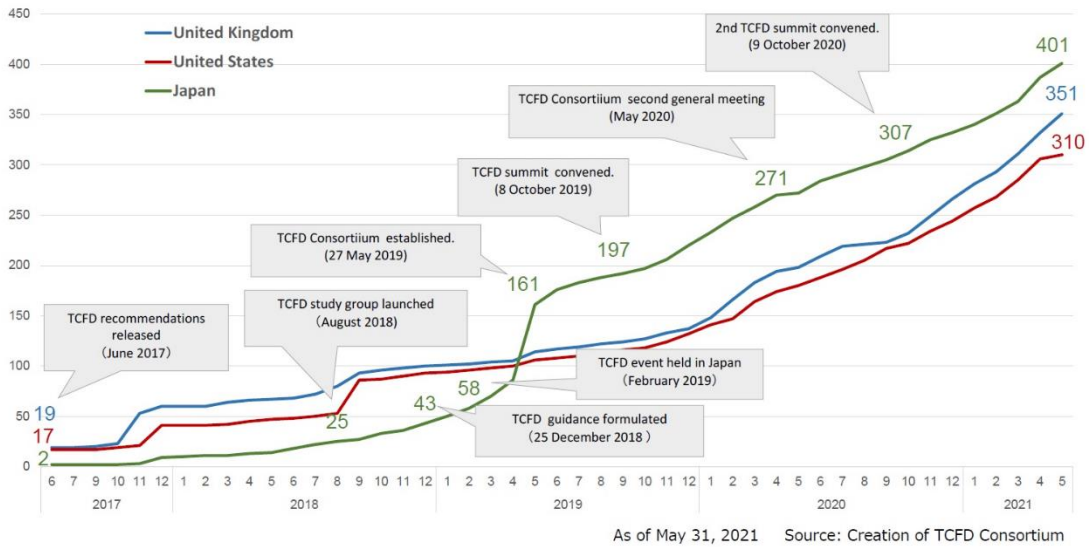
## TCFD and Japan

- “TCFD Recommendations” were released in 2017, following FSB’s initiative.
- In Japan METI set up TCFD Study Group and released “TCFD Guidance” in December 2018.
- Activities were succeeded by the Consortium (“Green Investment Guidance”, “TCFD Guidance 2.0”)



## Trends in TCFD supporters

- The number of organizations supporting TCFD in Japan reached the highest level in the world at the time of establishment of the TCFD Consortium, and has steadily increased since then due to various measures such as the TCFD.

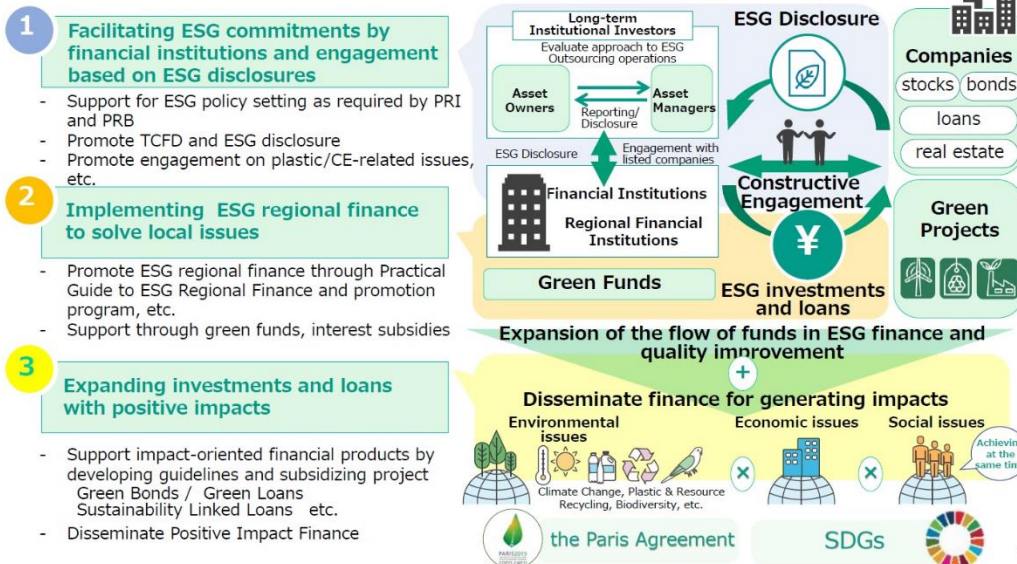


## Policy Update on ESG Finance

Presented by Mr Takashi Kondo  
 Director, Environment and Economy Division,  
 Ministry of the Environment, the Government of Japan

### Key Measures to Promote ESG Finance

- The ministry promotes ESG finance in order to further increase the flow of funds taking into account ESG factors and generate impacts through ESG investments and loans. This will create a financial mechanism to fund business and Green Projects to align with the Paris Agreement and the SDGs, thus creating the virtuous cycle of the environment and growth.



## Development of Guidelines to Promote ESG Finance




■ **Developing tools, such as guidelines, to support investors to improve their autonomous ESG investment practices and practical skills.**

	For Investors	For Financial Institutions	Information Disclosure
Developed so far	"The basic concepts of ESG investment" (Compiled in January 2017)	"Collection of knowledge for working on Environmental Rating Loans" (Compiled in March 2015)	"Environmental Reporting Guidelines" (Developed in 2000, most recently revised in 2018)
	Organizing ideas for using environmental information for corporate values (Compiled in May 2019)		"TCFD Guidance" (Compiled by METI in December 2018)
	"Evaluation axis and evaluation perspective on environmentally sustainable companies" (Compiled in July 2019)		"Practical Guide for Scenario Analysis in Line with the TCFD Recommendations (Banking Sector)" (Compiled in March 2021)
Newly Developing	"Guidance for Utilizing Climate-related Information to Promote Green Investments" (Compiled by the TCFD Consortium in October 2019)		<b>Green Finance Instruments</b>
	"Practical Guide to ESG Regional Finance (v2.0)", a guide for regional financial institutions to examine ESG factors in their lending and other activities (Updated in April 2021)		"Green Bond Guidelines" (Compiled in March 2017)
	<b>Guide to Green Impact Finance</b> (Compiled in March 2021)		"Green Bond Guidelines" Revised Version (Revised in March 2020)
			"Green Loan and Sustainability Linked Loan Guidelines" (Compiled in March 2020)

## Progress of TCFD Scenario Analysis Support Project



- Since FY 2018, the ministry **supports the practice of scenario analysis, which is a particular challenge in information disclosure in line with the TCFD recommendations**
- In FY 2019, we released **"the Practical guide for Scenario Analysis incorporating Climate-Related Risks and Opportunities ver. 2.0"** on March 30, 2020 (On the release of the guide, a roundtable discussion was held with the TCFD Consortium to disseminate information)
- **The guide was updated in FY2020 while continuing to diversify the target for support,** emphasizing the perspective of preparedness for infectious diseases and natural disasters, which are also physical risks of climate change. Additionally, FY 2020 program supported FIs for the first time.

	FY 2019	FY 2020														
<b>Support scenario analysis practices</b>	Supporting scenario analysis of 12 companies, adding to 6 new companies in 2018, and accumulating knowledge from diverse industries	Continue to support the practice while keeping in mind the trend of TCFD														
	<table border="1"> <thead> <tr> <th>sector</th> <th>support number</th> </tr> </thead> <tbody> <tr> <td>Financial</td> <td>Banking 1</td> </tr> <tr> <td rowspan="10">Non-Financial</td> <td>Energy 2</td> </tr> <tr> <td>Transportation 3</td> </tr> <tr> <td>construction and forestry 3</td> </tr> <tr> <td>construction materials 1</td> </tr> <tr> <td>materials 2</td> </tr> <tr> <td>food 3</td> </tr> <tr> <td>machinery 1</td> </tr> <tr> <td>retail 1</td> </tr> <tr> <td>general consumer goods 1</td> </tr> </tbody> </table>	sector	support number	Financial	Banking 1	Non-Financial	Energy 2	Transportation 3	construction and forestry 3	construction materials 1	materials 2	food 3	machinery 1	retail 1	general consumer goods 1	<p><b>(Support for Scenario Analysis)</b>                      [Non-Financial]                      Support for scenario analysis and disclosure in diverse industries                      [Financial]                      Focus on supporting the business impact assessment of the scenario</p> <p><b>(Other Studies and Examination)</b></p> <ul style="list-style-type: none"> <li>• Tracking trends in the TCFD</li> <li>• Collection of domestic and international good practices</li> <li>• Collecting more useful data</li> <li>• Examination of the deployment of scenario analysis to regional units and SMEs etc.</li> </ul>
sector	support number															
Financial	Banking 1															
Non-Financial	Energy 2															
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	machinery 1															
	retail 1															
	general consumer goods 1															
		<p><b>Revise the Practical Guide for Scenario Analysis</b></p> <p>Based on the results of the support program, etc., the guide published in 2018 has been revised by compiling key points of analysis, examples, and data that can be used for analysis. (released on March 30, 2020)</p>  <p><a href="https://www.env.go.jp/policy/tcdf.html">https://www.env.go.jp/policy/tcdf.html</a></p>														

3

## Practical Guide for Scenario Analysis In Line with the TCFD Recommendations (Banking Sector)



- In FY2020, The ministry executed a program which supports Regional Banks to implement their TCFD scenario analyses.
- The experience and lessons learned in the program were compiled as the “Practical Guide”, with step-by-step explanation for each process of quantitative assessment of the financial impact of transition/physical risk.
- **This year, a new program to support FIs to execute “Portfolio Carbon Analysis” will come up.**

Contents of the Practical Guide	
Title	Summary
1 Assess materiality of climate-related risks	■ Examining climate change impacts ■ Listing risks and opportunities and tentatively assess their importance
2 Identify and define range of scenarios	■ Choice of scenarios, obtaining forecast information on parameters
3 Evaluate Qualitative Business Impact	■ Analyzing the impacts of the climate change on the portfolio (risk and opportunity)
4 Quantitative assessment of transition risk	■ Basic concept of assessing financial impact of transition risk (e.g., carbon tax)
5 Quantitative assessment of physical risk	■ Quantification of physical risk, especially flood risk using open information such as hazard maps
6 Documentation and Disclosure	■ Points and examples of disclosure

## Promoting Regional ESG finance and “Practical Guide 2.0”

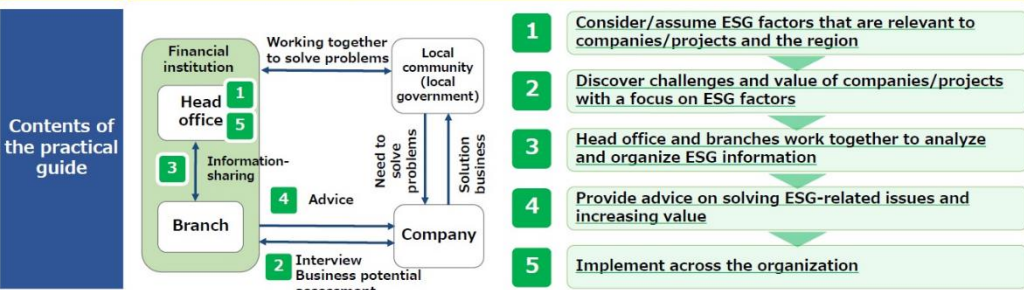


- To further expand the establishment of a sustainable society and economy in regions, regional financial institutions are expected to provide necessary support such as provision of appropriate insights and finance as financial institutions with considerations for ESG factors according to the characteristics of the regions where they are located.
- Our “Promotion program” provides regional FIs consultation to support their implementation of ESG finance. The lessons learned from the program are compiled as “**Practical Guide to ESG Regional Finance**”. The latest version (2.0) was released in April 2021, with actual examples.

### Overview of the Practical Guide to ESG Regional Finance

**Essence of Regional ESG Finance**

- ✓ Identify regional resources and issues, and assess the impact of ESG factors on local economies and companies (ESG risks and opportunities) over the medium to long term.
- ✓ Tap into companies with a focus on ESG factors from such a medium- to long-term perspective, and assess the potential of their business in light of the issues they face, their value and local needs before providing them with loans or support for their core business lines.



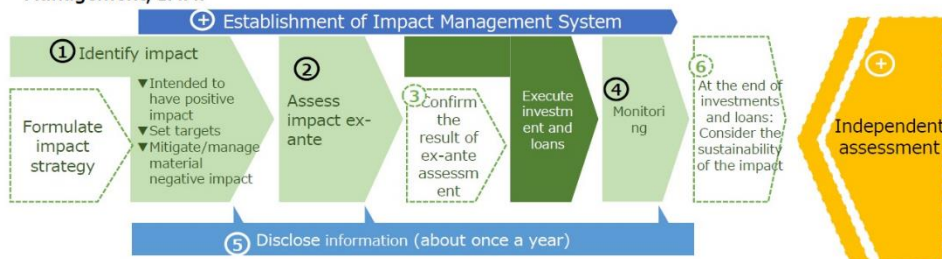
**Effects of regional ESG finance**

- ✓ Contributes to the creation of a Local SDGs and Ecological Sphere as well as the sustainable development of local economies
- ✓ Also helps regional financial institutions build sustainable business models

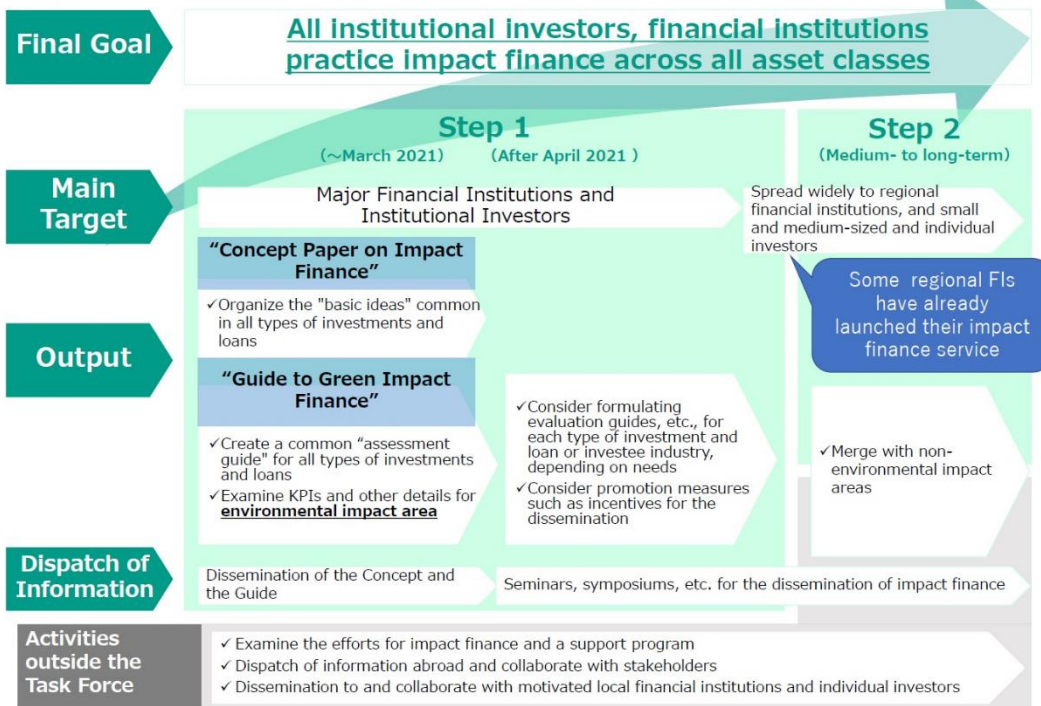
## Overview for “Guide to Green Impact Finance” (March 2021 Positive Impact Finance Task Force)

- Based on the “Concept Paper on Impact Finance”(July 2020), the guide has been formulated to summarize **certain approaches to and methods for impact assessment**, for which various efforts are being made internationally, **with reference to international initiatives, etc.**
- To achieve the SDGs and realize carbon neutral by 2050, large amount of private funds will be involved.

- Purpose**
- ✓ **To provide specific procedures for impact assessment** based on the approaches and tools presented by various international initiatives
  - ✓ **To aim for the mainstreaming of impact finance, which aims to have a positive impact on the environment, society and the economy with a clear intention** by making it easier for a wider range of actors to handle
- Points**
- ✓ **Focusing especially on impacts related to the green (environment) aspect, the basic procedures** are explained in the "Basic Flow of Impact Finance" (Figure below).
  - ✓ Ensure the appropriate tools is used according to the nature of each investment and loan, **the characteristics of the existing tools identified in each initiative and how they can be used in the impact assessment** are described.
  - ✓ **Enriched appendix** such as examples of metrics, usage of typical tools, examples of impact finance assessment.
  - ✓ Consistent with the discussions on the importance of not only measuring impact (measurement) but also managing it appropriately (management) in impact assessment; i.e., **Impact Measurement & Management, IMM.**



## Roadmap for the Dissemination of Impact Finance



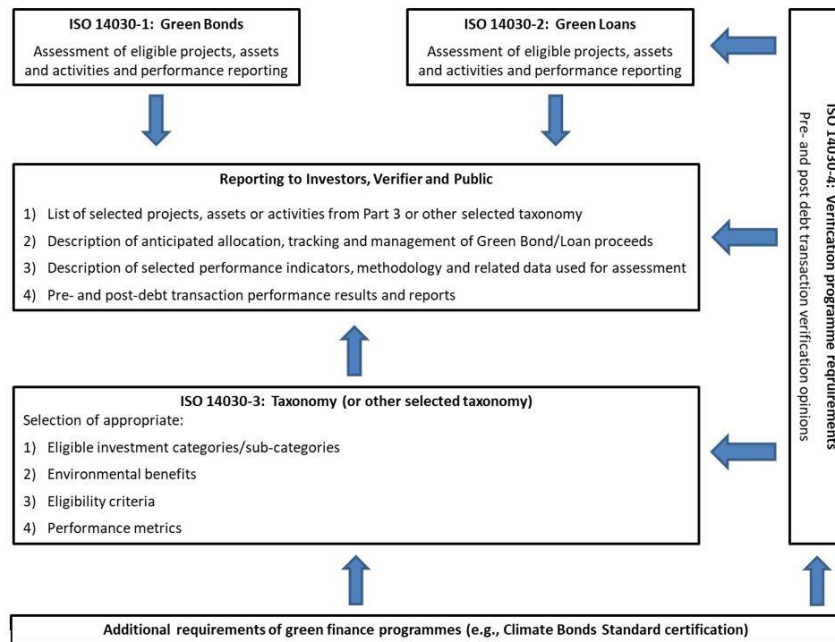


## ISO 14030 Environmental performance evaluation — Green debt instruments —

### ISO Standards In Support of Green Finance

Presented by John C. Shideler, Ph D, Chair of ISO TC207/SC4 and Convenor of WG7 on Green Debt Instruments

#### Relationships among the Four Parts



#### Requirements Common to ISO14030-1 and ISO14030-2

- Determination of eligibility of projects, assets and activities
- Management of proceeds
- Environmental performance tracking
- Impact reporting
- Verification

#### Specialized and Standardized Loans

Either the borrower or the lender may fulfill the requirement of ISO 14030-2

- The borrower when obtaining funds through a “specialized” loan
- The lender when developing a “standardized” loan product for such purposes as rooftop solar panel installations

#### Eligibility Using a Taxonomy

- ISO14030-3 will provide categories and subcategories of eligible green investments
- ISO 14030-1 and ISO14030-2 authorize the use of alternate taxonomies
  - Annexes to ISO 14030-1 and ISO14030-2 provide guidance on the selection of other taxonomies, including verification of their suitability for use

#### Eligibility Using Validation

- For projects, assets or activities not identified in Part 3 or in an alternate taxonomy, issuers/lenders/borrowers may substitute an “eligibility process test”
- These projects, assets or activities must be independently validated

### **Environmental Objectives for Eligible Projects**

- All eligible projects, assets and activities must positively contribute to at least one environmental objective
  - Climate change mitigation or adaptation
  - Sustainable use and protection of water and marine resources
  - Waste prevention and recycling
  - Transition to a circular economy
  - Control and prevention of pollution
  - Protection and restoration of ecosystems

### **Environmental Performance**

- Issuers/borrowers/lenders:
  - Evaluate material environmental risks and impacts
  - Define environmental performance indicators
  - Collect environmental information
  - Report on progress toward fulfilling objectives and the expected impacts of the projects, assets and activities

### **Verification Programme Requirements**

- ISO 14030-4 applies when bodies verify claims of conformity by issuers, borrowers or lenders to ISO 14030 Parts 1-3
- Verification and validation bodies performing engagements related to green debt instruments shall:
  - Be accredited in accordance with ISO/IEC 17011
  - Follow process requirements found in ISO 14065:2020

### **ISO 14100 Guidance on Environmental Criteria for Projects, Assets, and Activities to Support the Development of Green Finance**

Presented Dr Li Pengcheng, China National Institute Of Standardization  
ISO TC207/ SC4/JWG1 Convener

#### **The value of the standard ISO 14100**

- To support the development of green finance by assisting borrowers and financiers to take into account environmental impacts or performance of the project, asset, or activity for which funds are sought.
- To avoid, minimize, reduce, and mitigate adverse environmental impacts and risks, as well as to identify opportunities to optimize environmental performance.
- Key concepts involved in identifying and assessing relevant criteria, including significance, context, materiality and 'double materiality', as well as 'do no significant harm' are examined and examples presented.
- This guidance is designed to be flexible. Intended users can determine the application that best suits their internal and external context. This may include, but is not limited to, their policies, processes, systems, operating environments, economic constraints, stakeholder needs and relevant regulatory requirements.

#### **Information and communication**

- This document supports the exchange of information and communication between borrowers and financiers on the relevant environmental aspects and impacts, and the related risks and opportunities, of projects, assets, and activities in the context of seeking or providing finance.

- Being knowledgeable about and understanding what are the environmental aspects and impacts is important as they pose known or possible socio-economic consequences. These are of increasing interest to owners and managers seeking finance on one side and financiers, be they investors, lenders, or insurers, on the other side.
- The information expectations of the financier and the borrower should take into account a number of factors in order to require the cooperation of both parties.
- As a financier will be concerned with more than just one request for green financing, there is a need for a consistent process for evaluation and due diligence. The financier needs information that enables the assessment of the relative risk of one request against the others they receive.

### **Criteria for determining the environmental aspects and impacts of projects, assets, and activities**

Understanding context is an important concept when determining those environmental aspects and environmental impacts that need to be taken into account when assessing projects, assets, or activities (PAA). Context includes objective evidence and assumptions that include internal and external issues such as:

- Environmental conditions related to climate, air quality, water quality, land use, existing contamination, natural resource availability and biodiversity, that can either affect the organization's purpose, or be affected by its environmental aspects;
- The external cultural, social, political, legal, regulatory, financial, technological, economic, natural and competitive circumstances, whether international, national, regional or local;
- The internal characteristics of the organization, such as its activities, products and services, strategic direction, culture and capabilities.

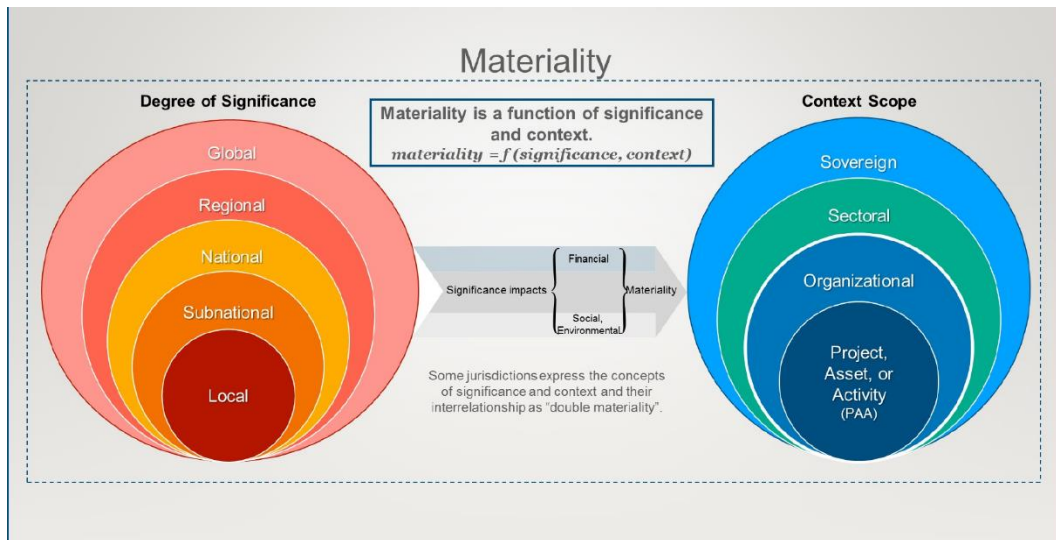
### **Determination of the environmental aspects and impacts of projects, assets, and activities**

- The borrower should identify the benefits associated with environment aspects that may be of concern or interest in the proposed project, assets, or activity, and the financier should confirm that the identified environmental benefits are real and achievable.
- Projects, assets, and activities may be affected by phenomena such as extreme weather or natural disaster events (conditions); or consumption of natural resources, or emissions to air, water and soil.
- To determine the environmental aspects of projects, assets, and activities and how they may impact the environment, it may be helpful to engage with interested parties (stakeholders).

### **Environmental Aspects, Environmental Impacts, Environment Performance, Significance, Context and Materiality**

- Both need to have a robust understanding of the synergy that addresses:
  - the interactions between environmental aspects and impacts,
  - their environmental significance,
  - the context in which these occur, and
  - the cumulative effect these have on materiality.
- Unless all these are addressed from a systems perspective, assertions that a financial product or service is green risks being exposed as greenwash.

- A deep understanding of these interrelationships and their interactions can enable opportunity that is beneficial to both the borrower and the financier.



#### Degree of Significance

- **Global**  
This degree of significance generates global environmental impacts, which is reflected in the potential for contextual issues to be global in scope.
- **Regional**  
This degree of significance generates regional, often transboundary, environmental impacts, which is reflected in the potential for contextual issues to be regional in scope.
- **National**  
This degree of significance generates mostly national, seldom transboundary, environmental impacts, which are likely most relevant to context within the "sectoral" and below.
- **Subnational**  
This degree of significance generates mostly domestic and regionalized environmental impacts, which are likely most relevant to context within the "organizational" scope and below.
- **Local**  
This degree of significance generates mostly domestic and local environmental impacts, which are likely most relevant to context at that the level concerning "asset" and below. (Asset in the table represents projects, activities and assets.)

Note: It should be understood that the issues affecting context do not limit the degree of environmental significance determined by the borrower or the financier. Each element can be determined individually, although the product of their interactions can affect materiality in profound ways.

#### Context Scope

- **Sovereign**  
The context scope takes into account internal and external issues that have global, or system wide consequences, whether acute or chronic, and processes that can affect any financial public or private stakeholders, lenders and borrowers, in some shape or form.
- **Sectoral**  
The context scope takes into account internal and external issues that have specific sector-related consequences, whether acute or chronic, and processes that can affect any public or private financial stakeholders, lenders and borrowers, in some sector-wide shape or form.
- **Organizational**  
The context scope takes into account internal and external issues, whether acute or chronic, and processes that can affect any public or private financial stakeholders', lenders and borrowers, which emanate from and around an organizational portfolio or structure.
- **Project, Asset, or Activity (PAA)**  
The context scope takes into account internal and external issues, whether acute or chronic, and processes that can affect any public or private financial stakeholders', lenders and borrowers, but are predominately focused on a specific asset without directly or substantially affecting or impacting other projects, assets, or activities.

Materiality is a function of significance and context. <i>materiality = f(significance, context)</i>					
Examples		Context Scope			
		Sovereign	Sectoral	Organizational	Project, Asset, or Activity
Degree of Significance	Global	Climate change and global pandemics (e.g. Covid-19) affect all economic activities in significant ways	Global flight restrictions because of public health concerns or fuel shortages will affect the entire aviation sector	A hotel chain with a diversified asset (PAA) portfolio will only be proportionally hit by sea-level rises	A hotel company with mostly beach front assets (PAA) will be disproportionately affected by sea-level rises
	Regional	Regional events (e.g. Amazon fires) or pandemics (e.g. Ebola outbreaks)	Interregional weather-related disasters (e.g. Monsoon) or environmental pollution (e.g. oil spills affecting fishing or tourism)	Interregional weather-related disasters / environmental pollution affecting a systemic share of an organisation's activities (PAA)	Interregional disasters or events only affecting individual assets (PAA) without threatening organisation as a whole
	National	National events (e.g. California/Australia wildfires) or deforestation (e.g. Congo, Indonesia)	Wildfires affecting electric utilities (e.g. California), timber industry (e.g. Australia), tourism (e.g. South Europe)	National weather-related disasters or environmental pollution affecting a systemic share of an organisation's activities (PAA)	National disasters or events only affecting individual assets (PAA) without threatening organisation as a whole
	Subnational	Subnational air pollution in vicinity of large cities (e.g. London, Beijing, Cairo)	Subnational city-level air pollution affecting transportation sector with policy measures taken to lower particle and GHG emissions.	Subnational weather-related disasters or environmental pollution affecting a systemic portion of activities (PAA)	Subnational disasters or events only affecting individual assets (PAA) without threatening organisation as a whole
	Local	Local soil contamination on agricultural lands by excessive pesticide and fertiliser use.	Local authorities or legal remedial conditions impose clean-up measures or agricultural sector.	Local weather-related disasters or environmental pollution affecting a systemic portion of activities (PAA)	Local disasters or events only affecting individual assets (PAA) without threatening organisation as a whole

### Determination of relevant criteria

- The criteria for assessing actual or potential environmental impacts and environmental performance of projects, assets, or activities should be determined in consideration of their risks and opportunities.
- A request for financing should address what is significant and material. It should identify the environmental objectives to which the projects, assets, or activities contribute as well as any potential adverse impacts or effects. This evaluation should consider:
  - The sourcing of raw materials;
  - Processing and manufacturing operations to produce the product and co-products;
  - Any relevant transportation;
  - The use of the product or service; and
  - The end-of-life fate of the waste materials or final product, whether this is recovery, reuse, remanufacture, recycling or disposal.
- The criteria may include:
  - Eligibility criteria, such as a taxonomy that characterizes the environmental benefits of project, assets, or activities;
  - Performance criteria, such as minimum energy performance standards for appliances;
  - Relevant standards, regulations, guidelines and best available technology (BAT) lists for each economy/region;

### Information related to environmental aspects and impact to be included in the request for financing

- The request for financing should include:
  - A description of the project, asset, or activity, including identified environmental aspects and related impacts;
  - Compliance obligations, such as regulation, regional, national or international agreements;
  - Globally applied standards such as ISO or other green finance related protocols;
  - Other relevant information concerning present and future conditions, such as technical, economic, environmental, geographic, site-specific and temporal assumptions or projections;

- The criteria used to determine the significance and materiality of the project, asset, or activity as well as the financial data to support the borrower's assertion of its environmental benefits.
- Borrowers need to support their request for financing with as much evidence as possible and reasonable. Financiers need to adjust their expectations to reflect the value of the funds sought.

### **Scope of the assessment of environmental aspects and impacts of projects, assets, and activities**

- The conditions and status of the project, asset, or activity, such as its purpose, boundary, technologies used or to be acquired, and context;
- Operational indicators;
- The proposed financing scheme and/or financing instrument;
- The presence of government grants or loans;
- Consideration of applicable taxonomies;
- Relevant standards, regulations, guidelines and best available technology (BAT) lists for each economy/region;
- The environmental aspects and associated environmental impacts;
- Comparison with environmental performance with respect to other similar projects, assets, or activities, or baselines, when available;
- The environmental risks and opportunities related to the socio-economic consequences of the financing in question;
- Monetized and non-monetized as well as internalized or externalized effects;
- The presence of covenants or environmental covenants;
- Specific UN sustainable development goals (SDGs) as relevant.

### **The sources and types of information**

- Existing environmental management system (EMS) data from operations as well as similar projects, assets, or activities realized earlier within or outside the borrowers.
- Environmental, engineering or economic feasibility studies, which have been carried out/performed in preparation of the proposed projects, assets, and activities.
- Technical and economic information of the project, asset, and activities, including adopted technologies, products, services and the expected level of activity;
- Environmental statistics, databases and reports.
- Compliance obligations that are relevant, including policy(ies), regulation(s) and standard(s);
- Environmental conditions, such as high tide, temperature, humidity, a pollen release;
- Environmental risks and opportunities;
- Societal needs and stakeholder expectations;
- Availability and design of green financing instrument.

### **Stakeholder (Interested Parties) engagement**

- The need to engage interested parties is based on a number of variables.

- Stakeholder input should be included for larger requests for a project, asset, or activity, such as an infrastructure project, which could affect citizenry or pose a significant impact or material risk or opportunity for the financier.
- The plan for a stakeholder engagement should be clearly described including who, what, when, why and how the engagement will be undertaken for the life of the project, asset, and activity.

### **Assessment of environmental impacts and environmental performance**

- The environmental impacts of proposed projects, assets, or activities and their significance should be described, and when appropriate documented.
- Significant environmental impacts that are material can affect the financier's decision when determine the viability of the request for financing. They can affect the risk of the project, asset, or activity and the reputation or credibility of the borrower and the financier.
- Determining significance first serves as an important baseline for a project, asset, or activity that is being considered, as this will affect the financier's determination of materiality fundamentally.

### **Assessment of environmental performance**

- The proposal from a potential borrower seeking green finance for a project, asset, or activity should address the potential for significant environmental performance improvement, measurably reduce the associated significant and adverse impacts, or provide evidence that it offers environmental benefits that make it unique or distinctive, commensurate with the opportunity.
- The objective evidence that indicates or proves that the project, asset, or activity will enable or has improved environmental performance could be determined through comparison between existing projects, assets, and activities or a baseline scenario. If the request for financing is for new technology, the assessment may benefit from a report that provides evidence of the stated benefits.
- When developing a baseline scenario, which attributes the assumptions, values and procedures used, care should be applied to select appropriate criteria to ensure that environmental performance improvements and reduction of adverse environmental impacts, are not over-estimated.

## **Assessment of environmental and associated risks and opportunities**

Negative effects of a construction project on the economic viability of neighbouring businesses

Cost overruns, requiring an extension of a loan, or additional financing

Competition from similar projects

Changes in regulation, such as changes issued by central banks or security commissions

Failure to meet growth targets, such as sales, market share or profitability

Changes in trade agreements, such as the imposition of tariffs

Subsidies or government grants

Increase in habitat preservation through improvements in environmental impacts

### **Credibility of Information**

- Borrowers should consider methods to assure the credibility of information they provide. The methods may include one of these options, but are not limited to:
- Third party assurance report;
- Internal auditing report;
- External auditing report;
- Inclusion of Environmental Covenants in the debt contract.

### **ISO 14097:2021**

#### **Greenhouse gas management and related activities — Framework including principles and requirements for assessing and reporting investments and financing activities related to climate change**

Presented by Dr Massamba Thioye  
ISO TC207/SC7/WG10 Convener

#### **ISO 14097 enables financiers to:**

- Establish a climate strategy and plan to achieve its climate objectives
- Identify climate actions that support the achievement of their objectives
- Identify, assess and manage exposure to climate change related risks and opportunities
- Be recognized by making an evidence-based claim about their mitigation/adaptation impact in the economy

#### **Disclosing FINANCIAL RISKS AND OPPORTUNITIES**

ISO 14097 provides recommendations on what to include in disclosures related to:

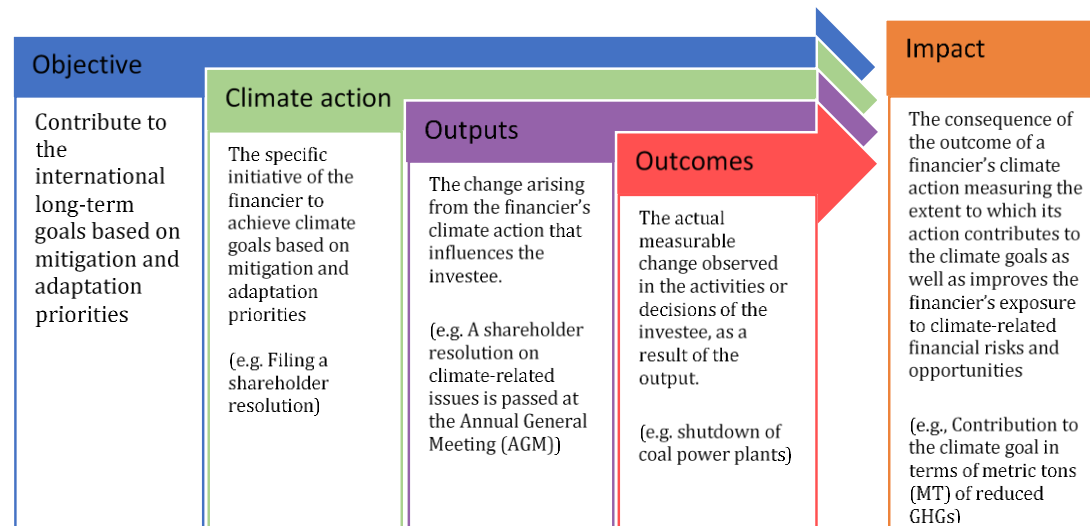
1. **Governance** of climate risks and opportunities
2. **Business, strategy** and financial planning over the short, medium, and long term
3. **Management** of climate risks and opportunities
4. **Metrics**, methodologies used and **targets** set over the short, medium, and long term

It **complements** the TCFD with recommended disclosure on:

- Identification of climate risks and opportunities over the short, medium, and long term
- Investees' exposure to climate risks and opportunities



## Climate action & theory of change



### Setting a climate objective

- Establish and document a strategy and a policy demonstrating commitment to:
  - o ensuring consistency of financial flows with climate goals
  - o measuring the extent to which its climate action(s) contribute(s) to achieving the climate goals
- Establish a plan to achieve the strategic objectives (with expected outputs, outcomes and impact) and describe the means to be mobilized to achieve the objectives

### Defining a Climate action

Before the action takes place, the financier needs to consider:

- The general characteristics of the action
  - o asset class(es) concerned, targeted investee(s), decision(s) of the investees the financiers want to influence
- The link between the climate action and the financiers' climate strategy and targets
- The lever(s) of influence that will be used for the climate action
- Other available climate actions (incl. individual or collective) and the rationale behind the chosen one
  - o External factors that could lead to a change in investees' behaviour

### Expected outputs of the climate action

Before the action takes place, the financier needs to consider:

- An estimate of the expected output of the financier's actions
  - Quantitative or (if not possible), qualitative
  - % votes supporting a shareholder resolution, # bilateral meetings, definition of loans conditions and scope of clients "covered"
- The relevance of the expected output as a factor of influence on the investee and its estimation
- The conditions and external factors necessary to achieve the expected output
- The timeline for the output to materialize

### Expected Outcomes of the climate action

Before the action takes place, the financier needs to consider:

- A forward-looking estimation of the expected results from the investee's actions the financier is planning to influence (i.e. outcome)
- The different scopes of the expected outcome(s)
- The external factors affecting the achievement of the expected outcome(s)
- How the expected outcome(s) relate to the international climate goals by understanding its alignment with investee science-based targets or indicative targets
- The timeline for the outcome to materialize

### **Expected Impact of the climate action**

Before the action takes place, the financier needs to consider:

- The expected impact:
- For climate mitigation: the difference between the baseline emissions trajectory of the investee and the expected GHG emissions trajectory associated with the expected outcome.
- For climate adaptation: The expected levels of climate resilience development in the short, medium and long term compared to resilience if no action was taken.
- The link between the expected impact and the financier's targets and strategic objectives
- The timeline for the impact to materialize

### **Monitoring, Assessing & Reporting**

- Once the climate action starts to take place, the financier needs to consider:
- **Monitoring**
  - Monitor and document results as per the monitoring plan that was established
- **Assessment**
  - Assess progress against expected output, outcomes and impact
  - Quantify the impact observed
  - Document the **causal relationship or the linkage** between the climate action, the actual output, actual outcome and actual impact
  - The link between the actual impact, the achievement of the financier's climate targets and strategic objectives.
- **Reporting**
- Publicly report on the climate action(s) including its outputs, outcomes, and impact
- The reporting can be integrated into annual financial reports, CSR reports or in a standalone report

### **Financiers without climate objectives**

**They need to consider GHG accounting requirements, including the:**

- Quantification and reporting of the emissions reductions or increase of **the investees** in the financier's portfolio annually covering a 1-year timeframe
- Reporting of emission changes in absolute and percentage terms, including the scope of emissions, the portfolios considered, the % of the universe covered and, why the full emissions and portfolio are not covered.
- Identification of investees with significant increases or decreases in emissions, the reason for the change, and any action taken in relation to that investee (e.g., capital allocation, changes in mandates, proxy voting)
- Reporting on any intention to conduct climate actions or integrate climate change considerations in the future.

### **Document retention and record-keeping**

The financier shall develop, establish and maintain procedures for document retention and record-keeping.

The financier shall retain and maintain all documentation supporting the determination, monitoring, assessment and reporting of the climate action for verification needs. The documentation shall be handled in accordance with the financier's information management procedures for document retention and record-keeping

### **Verification and validation**

The financier shall ensure the accuracy of historical information and the reasonableness of forecast or projected information. A programme of verification and validation should comprise an element of the financier's quality assurance and quality control procedures. The financier should include in its programme of verification:

- a) results of the financier's climate action;
- b) required disclosures.

Information that is forecast or projected should be validated.

NOTE Further information about verification and validation can be found in ISO 14064-3:2019.

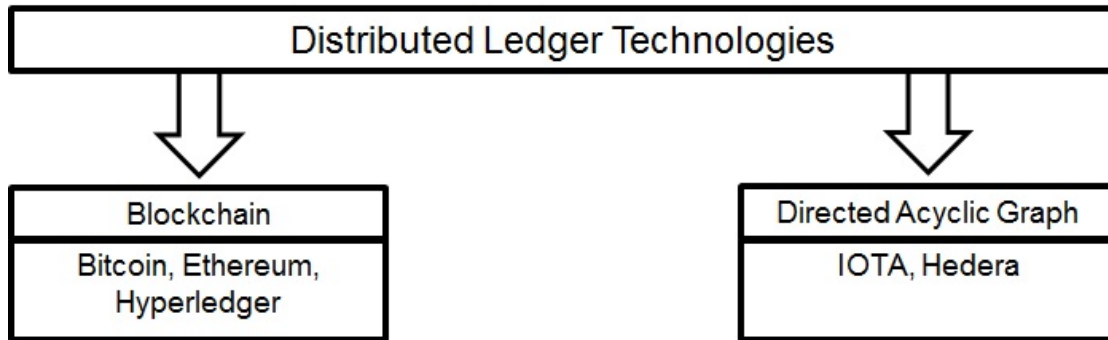
### **Benefits of using ISO 14097**

- Financiers can measure and report the impact of their climate actions on the GHG emissions of the real economy
- Financiers can set climate objectives and establish a climate strategy and plan to achieve them
- The standard supports the identification of impactful climate actions
- The impact of financiers' actions related to initiatives such as Climate Action 100+ as well as vote to replace Board members with Directors prone to enhanced climate actions can be measured.
- The standard supports the identification, assessment and management of financiers' exposure to climate change related risks and opportunities

### **Agenda 10: Data management using digital MRV and financial support for climate action**

- Data management using digital MRV and ISO14080 and its methodology profiles
- Digital documenting and reporting the climate action
- Digital MRV and verification approach for the management of NDCs
- Expected outcome by accredited verification and related assessment for the actions.

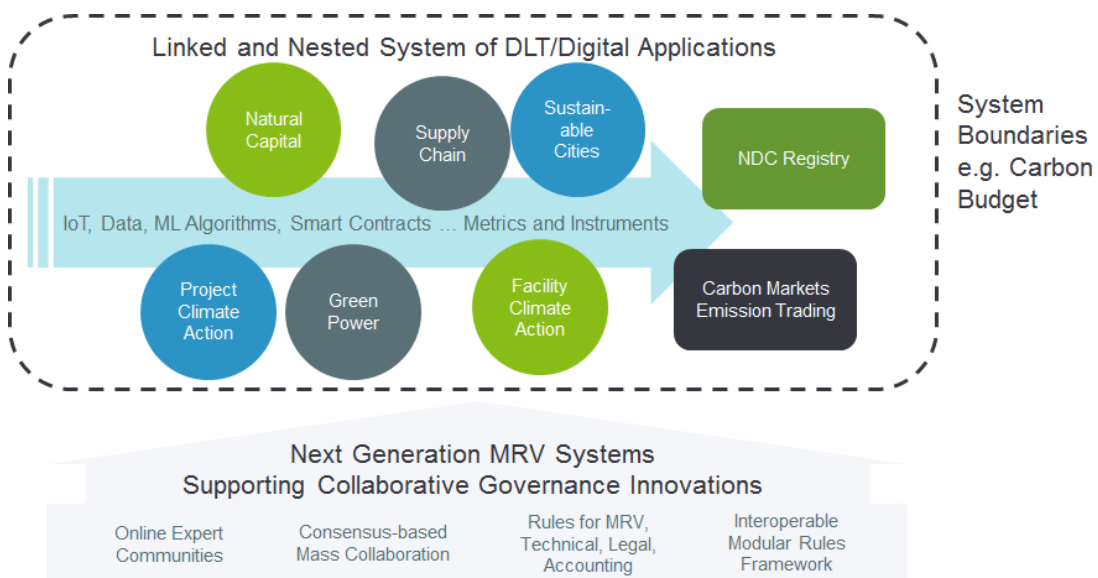
### **Overview of Different DLTs/Blockchains**

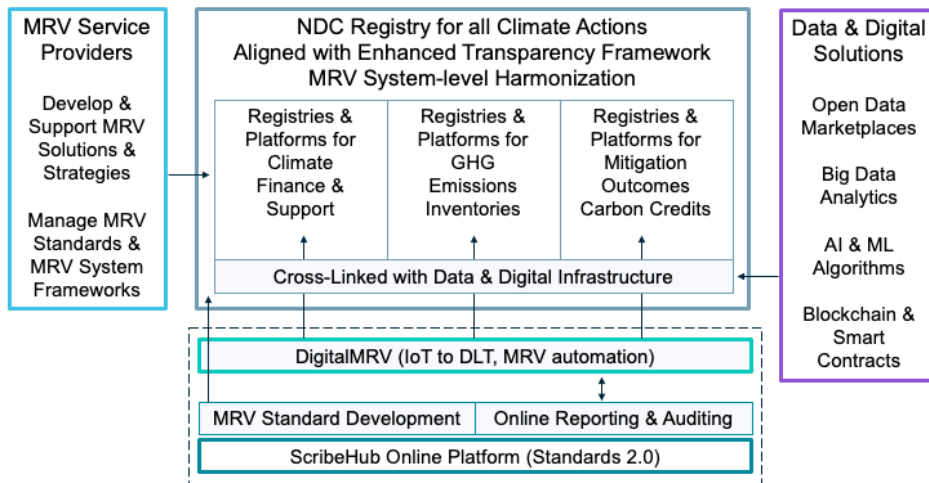


### Bitcoin vs Blockchain vs DLT

Examples of DLTs	Explanation
Bitcoin	Blockchain as a Digital Currency, i.e. a financial application
Ethereum	Blockchain with Smart Contracts, more than digital currency applications, e.g. supply chains
IOTA	Not a blockchain, uses a directed acyclic graph (DAG) called the "Tangle" which is a blockless distributed ledger to support the IoT Data Economy; can link with other DLTs

Platform	kWh consumed for 1 transaction	Electricity cost for 1 transaction	kg CO <sub>2</sub> e emitted for 1 transaction	How long it would power my house (kWh per year)	
Bitcoin	980	\$147.00	44.1	22.4	days
Ethereum	77	\$11.55	3.5	42.3	hours
MasterCard	0.0006	\$0.00009	0.00003	1.2	seconds
IOTA	0.0000016	\$0.0000002	0.00000007	3.2	milli-seconds



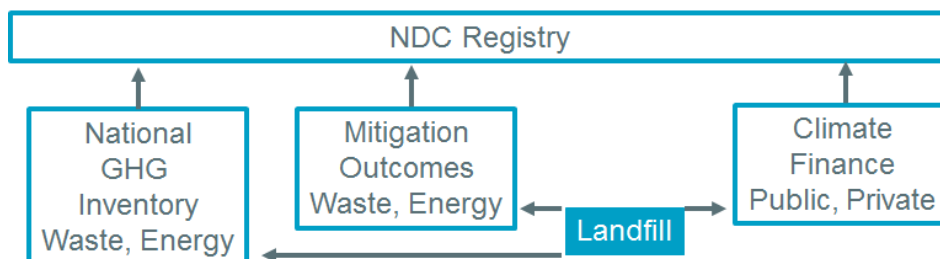


### Digital MRV Project Case Study

- Chile-Canada Bilateral Agreement on Environmental Cooperation, part of the Free Trade Agreement
- \$7M CAD financial by Environment and Climate Change Canada to support implementation of Chile's NDC
- Canada-Chile Reciclo Organicos Program, 2017 – 2022
  - Landfill gas to clean energy production
  - Composting and organic waste management
  - Anaerobic digestion (biodigester)
  - MRV innovations (methodologies and digitization)

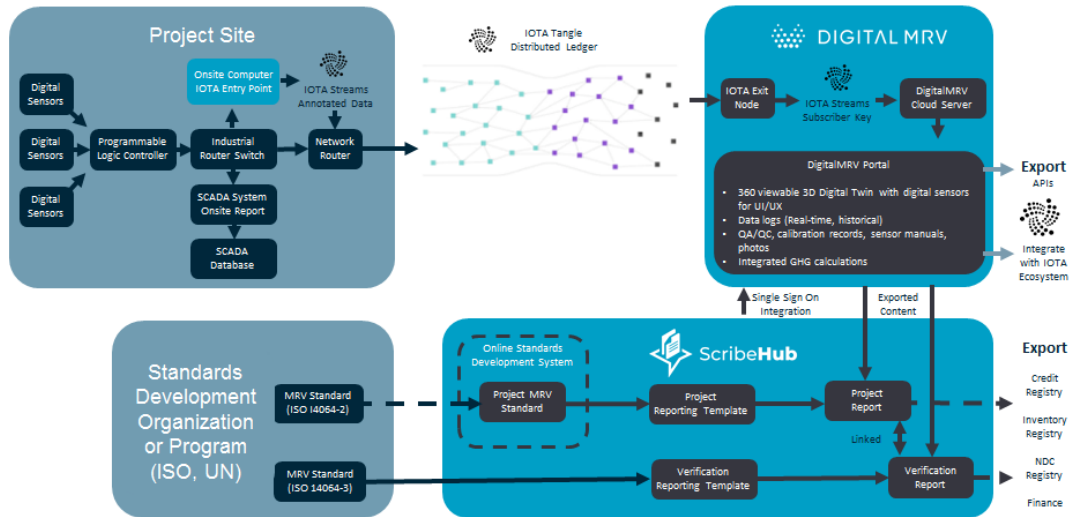
### Chile Project Site Rationale

1. Proven, mature technologies (low scientific risk)
2. New build site, modern equipment
3. Digital sensors and data management system enable quick connect for Digital MRV (no additional costs)
4. Chile LFG MRV methodology development
5. Site is relevant to different stakeholders (mitigation, inventories, finance)



1. Cost Effectiveness: Reduces costs of annual site visits; software subscriptions are low cost; IOTA transactions are feeless
2. Intellectual Property: IOTA is open-source software (others can build a solution like DigitalMRV for any climate action)
3. Usability: Multilingual (English, French, Spanish) and online access
4. Business Case: Local and global partnerships to enable end-to-end solutions for return on investment (DigitalMRV > Registry > Exchange)
5. Sustainability: IOTA is very low energy use and emissions; avoid travel emissions
6. Replication to other LFG sites: Low cost to replicate to other LFG sites
7. Interoperability :Customizable forms for different MRV methodologies and connected with global community of MRV professionals

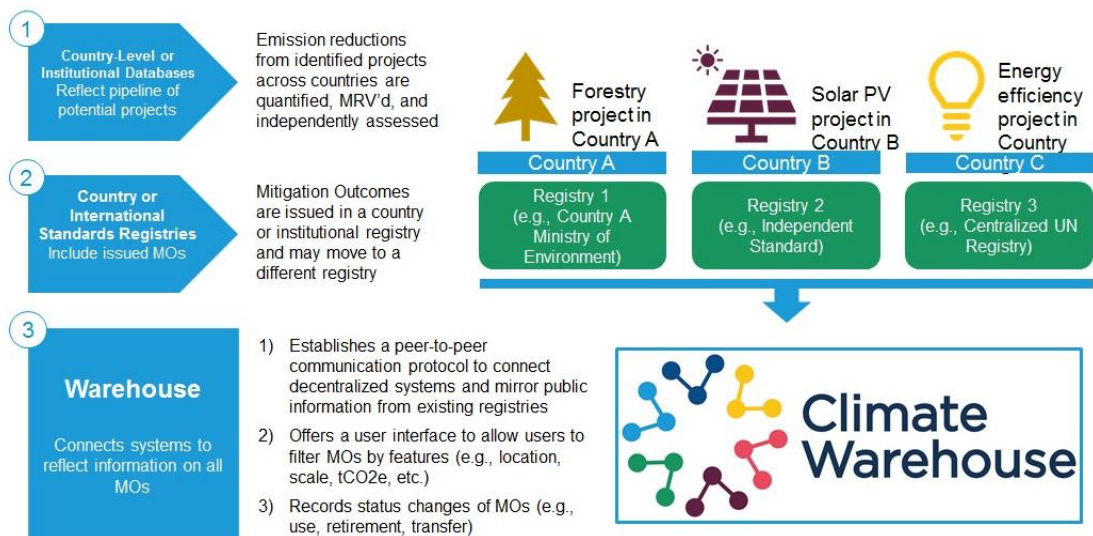
# Software Overview



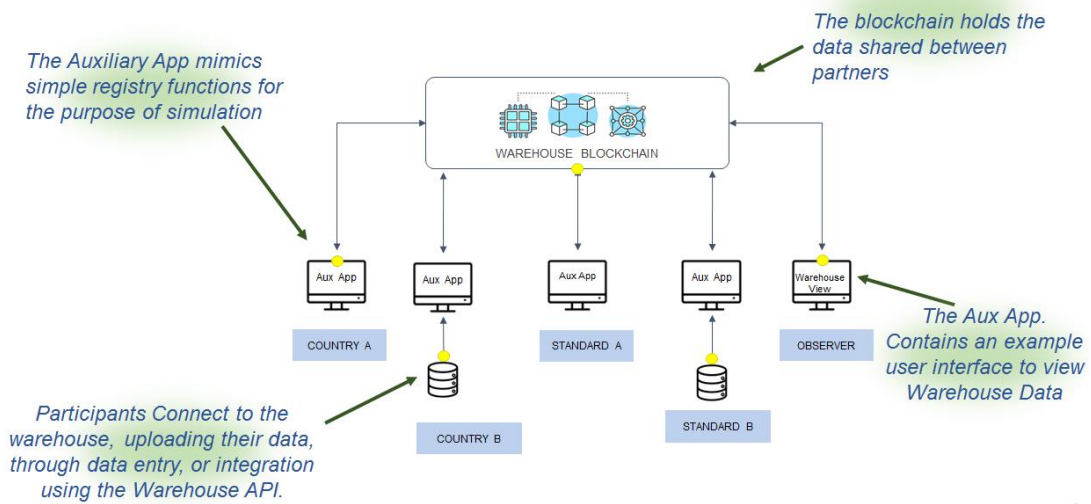
1. ScribeHub supports credibility of standards development
  - Open and transparent, accessible and participatory online process
  - Online reporting and auditing (linked to standards)
  - Smart standards (integrated into to digital MRV)
2. DigitalMRV supports credibility of standards implementation
  - Data quality and integrity
  - MRV standards integration via ScribeHub
  - Data utility and cohesiveness supports other digital applications
  - Data into Knowledge into Action into Value via IOTA

## Agenda 11: Digital MRV and future verification including block chain

### Climate Warehouse Simulation 2.0 -Process, Functions and Demonstration



## Simulation Prototype Phase 2 Components



## Climate Warehouse Prototype Functions



### Warehouse View

- Find, filter and view project and unit information
- View status and transfer history for units
- View conflicts or potential double counting risks



### Auxiliary App Registry Functions

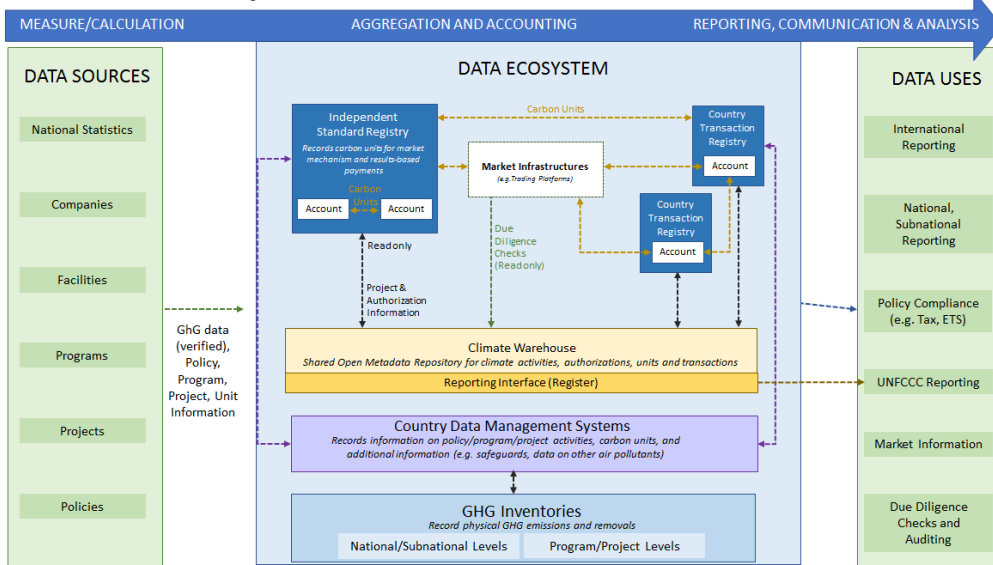
#### Project Level Functions:

- Add or edit project information, including related projects and rating information
- Change the status of a project
- Add labels, authorizations or other types of qualifications to a project

#### Unit Level Functions:

- Add units to the project (Issuances)
- Edit unit information, including status information for unit blocks, and status of corresponding adjustments taken for the units.
- Assign labels, authorizations or other types of qualifications to units associated with the project
- Break unit serial number blocks of units into two
- Record the transfer of unit blocks to other registry systems
- Copy incoming transferred unit information, creating a linkage between units in different registry systems.

## Climate Warehouse Ecosystem



## Reference

**Chile 4th Biennial Update Report on Climate Change:**

[https://unfccc.int/sites/default/files/resource/Chile\\_4th%20BUR\\_2020.pdf](https://unfccc.int/sites/default/files/resource/Chile_4th%20BUR_2020.pdf)

**Challenge Net Zero Carbon Innovation:**

<https://www.challenge-zero.jp/en/>

**Technologies Customized List:**

<https://www.jisf.or.jp/en/activity/climate/Technologies/index.html>

**Guidance for Utilizing Climate-related Information to Promote Green Investment 2.0 (Green Investment Guidance 2.0)**

[https://tcf-consortium.jp/pdf/news/21100501/green\\_investment\\_guidance20-e.pdf](https://tcf-consortium.jp/pdf/news/21100501/green_investment_guidance20-e.pdf)