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Global Infrastructure Basel

Technical Document

Developing a Carbon Neutral Infrastructure Framework and Implementation Guidelines along the Belt and Road

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Lead technical partner
Global Infrastructure Basel Foundation

Stakeholders invited to contribute to the consultation process

Financial Sector
Asian Infrastructure Investment Bank
Asian Development Bank
China Development Bank

Corporate and private sector
China International Contracts Association (CHINCA)

Government/Public Sector
People's Republic of China
Republic of Austria
Local Governments along the Belt and Road Initiative

INCLUSIVE AND SUSTAINABLE INDUSTRIAL DEVELOPMENT

Content

1 Executive Summary

The Belt and Road Initiative (BRI) is a major development strategy led by China since 2013. A large component of the BRI is large scale infrastructure investment, with total investment estimates in the range 1 to 2 trillion USD. This volume represents a large opportunity to create unprecedented economic growth along the BRI, however, if implemented without sufficient regard for sustainability and climate impacts, the initiative also may also pose unprecedented environmental risks. Given the long life spans of the infrastructure being implemented and the high capital cost, there is a very real risk that inaction now will lead to a lock in to unsustainable and high carbon infrastructure for decades to come. As many projects along the BRI are in advanced stages of development time to influence their design is very limited.

Several initiatives exist which are aiming to improve environmental, social and governance (ESG) aspects along the BRI. These include an International Coalition on Greening the BRI, led by UN Environment and the Chinese Ministry of Environmental and Ecological Protection; as well as the China-UK Green Finance Taskforce among others. There also exist a number of ESG standards, tools and frameworks designed to facilitate the uptake of best practices for infrastructure sustainability, including; SuRe® - The Standard for Sustainable and Resilient Infrastructure; Dagong ESG Credit Rating methodology; CHINCA ESG Guidelines; and Chinese Government Guidance on Promoting Green BRI among others. Despite these efforts, there remains a lack of uptake of sustainability standards along the BRI. Key reasons for this include: a lack of incentive for contractors to implement high ESG standards; a lack of clarity as to which standards should apply; additional cost and time implications perceived by project planners, developers and procurers; a lack of capacity of planners and procurers; and a high degree of complexity related to the diversity of project types as well as socio-political and regulatory landscapes along the BRI.

In this report, we propose an approach to accelerating the uptake of carbon neutral standards through the development of a Carbon Neutral Infrastructure Framework and Implementation Guidelines. The framework and guidelines would be developed through a multi-stakeholder process and would complement existing efforts to green the belt and road. The proposed approach would build upon existing standards and focus on making these standards appropriate for implementation along the BRI, whilst working to build clear incentive structures for their rapid uptake.

Once implemented, the approach aims to: reduce greenhouse gas emissions from BRI infrastructure; boost resilience against future climate change impacts; ensure infrastructure is compliant with international sustainability standards and creates co-benefits; and ultimately assist to improve creditworthiness of improved projects and participating governments thereby attracting additional infrastructure investment.

List of Acronyms

BRI	Belt and Road Initiative
CAPEC	China Association of Plant Engineering Consultants
CCFD	China City Deelopment Foundation
CHINCA	China International Contrac-tors Association
EIB	European Investment Bank
ESG	Environment, Society and Governance
GBRIA	Green Belt and Road Investor Alliance
GFC	Green Finance Committee
GFI	Green Finance Initiative
GIFA	Green Infrastructure Finance Accreditation
GIH	Global Infrastructure Hub
GRESB	Global Real Estate Sustainability Benchmark
GWC	Green World City
HSBC	Hong Kong and Shanghai Banking Corporation
ICBC	Industrial and Commercial Bank of China
ICMA	International Capital Market Association
IFC	International Finance Corporation
IFI	International Financial Institution
ISCA	Infrastructure Sustainability Council of Australia
ITC	International Trade Committee
LEED	Leadership in Energy and Environmental Design
LTIIA	Long Term Infrastructure Investors Association
MDB	Multilateral Development Bank
MOFCOM	Chinese Ministry of Commerce
MOU	Memorandum of Understanding
NDCs	Nationally Determined Contributions
PBoC	Peoples' Bank of China
PPIAF	Private Infrastructure Advisory Facility
SDGs	Sustainable Development Goals
UNFCCC	United Nations Framework Convention on Climate Change
UNIDO	United Nations Industrial Development Organisation
UNPRI	United Nations Principles of Responsible Investment
WBG	World Bank Group
WWF	World Wide Fund for Nature

2 Context

Launched in 2013 by Chinese President Xi Jinping, the Belt and Road Initiative (BRI) is a major development strategy aiming to increase economic links between China and other states located along terrestrial and maritime corridors. The strategy focusses on the implementation of major infrastructure and development projects to foster economic growth and connectivity. The BRI has a vast scope, involving several trillion USD of investment, primarily in the sectors of energy, transport, telecommunications, industrial capacity as well as other activities such as technical capacity building. The BRI is expected to affect >70 countries, 69% of the world's population and 29% of the world's economy (1) (2). Given the vast scope and long-term nature of the infrastructure projects being developed under the BRI, there is significant risk of negative social and environmental impacts, whist simultaneously significant opportunity to affect long-term positive impact. Chinese leadership has made several high-level commitments to maintaining high environmental and social standards along the BRI (refer to box 1), however, many remain sceptical, voicing concerns that China's improved domestic environmental policies will not be implemented along the BRI and that the BRI will be used to export surplus polluting equipment (2). Lending and investment through many Chinese financial bodies do not entail any political conditionality, unlike lending through many Western International Financial Institutions (IFIs), which critics view as creating an environment where environmental and social safeguards can be ignored (2). If high-level commitments are followed by affirmative actions, the opportunities for the BRI to create positive long-term benefits to society and environment are vast. There is great need that the infrastructure investments destined for BRI projects are directed to projects that decrease environmental risks such as climate change and avoid a lock-in to unsustainable development pathways. In an ideal case, projects would be designed to be both carbon neutral and resilient to the anticipated impacts of climate change, among other environmental and social issues. One important way of achieving this, is through the implementation of state of the art tools and recognised normative guidelines from china and/or international bodies, to facilitate the efficient delivery of sustainable and low carbon infrastructure. (3)

Box 1

"We must pursue a new vision of green development and way of life and work which is green, low-carbon, circular and sustainable."

–President Xi Jinping

3 The Need

Despite several important initiatives aiming to green the BRI, such as 'Guidance on Promoting Green Belt and Road' and 'Belt and Road Ecological and Environmental Cooperation Plan' (refer to section 5.2 below), the implementation of sustainable infrastructure standards along the BRI is vastly lacking. There exists a cornucopia of standards, however a lack of clarity of as to which standards should apply in which situations, and in many cases a lack of capacity and willingness to implement such standards. Implementation of standards is also hindered by a lack of scientific basis for criteria benchmarks and a lack of benchmarking data required to define terms such as 'best in class' and

'good international industry practice'. This lack of data can lead to the existence of 'greenwashing' standards which damage the credibility of sustainability standards and hinder their uptake globally.

The following points summarise some of the key barriers hindering uptake of standards along the BRI:

Lack of clarity between standards – there exists confusion of which standards to implement in which regions, which project size and which sector, as well as the existence of standards that require insufficient rigour/quality.

Cost and time – common project contracting strategies, together with public tender selection criteria that disproportionately emphasise price over quality, leave contractors unlikely to strive to meet higher levels of sustainability performance. This is compounded by a common belief that improving project sustainability implies high additional cost.

Capacity – there are varying levels of understanding of sustainability topics among regulators, procurers, contractors, designers and financers along the BRI. In many cases the ability of these actors to identify sustainability risks and opportunities is lacking.

Complexity – BRI comprises a large diversity of project implementation contexts with varying geographies, project sectors, and project size, project delivery models, socio-political and regulatory landscapes.

It is important that these barriers are systematically addressed through a stakeholder-led strategy that provides clarity, support and motivation for infrastructure projects to uptake sustainability standards.

4 Objectives

A Carbon Neutral Infrastructure Framework and Implementation Guidelines (referred to hereinafter as 'Standards Framework') for the BRI would encompass key criteria of carbon neutrality, sustainability and resilience into infrastructure development and establish a common language and understanding of carbon neutral infrastructure projects between project developers, financiers, and local authorities of the beneficiary countries and China. The framework will furthermore consider energy aspects of the infrastructure and help reduce carbon emissions in the infrastructure construction field in order to better cope with global climate change. The framework will assist both China and countries along the BRI to meet their Nationally Determined Contributions (NDCs) to the Paris Agreement and realize sustainable development through policy, technology, management and innovation.

The development and application of the climate neutral infrastructure framework is intended to provide value to beneficiaries primarily in five ways:

1) Mitigate greenhouse gas emissions caused by infrastructure construction, operation and decommissioning;

2) Ensure infrastructure is designed and built with regard for future climate conditions;

3) Ensure infrastructure is compliant with international sustainability and climate standards and creates co-benefits;

4) Contribute to improving creditworthiness of participating governments;

5) In light of the above, attract further investment in infrastructure.

5 Baseline Analysis

The following sections present information relating to the current status of sustainability standards' uptake along the BRI.

5.1 Existing Tools/Guidelines/Standards

Table 1 below summarises several families of existing standards/tools/guidelines relevant to sustainable infrastructure along the BRI. Note that this list is non-exhaustive but contains examples of important initiatives. Refer to Appendix A for an extended list of relevant tools/guidelines/standards.

Table 1: Examples of Existing Tools/Guidelines/Standards related to Sustainable Infrastructure

Global Infrastructure Sustainability Standards	— SuRe® - The Standard for Sustainable and Resilient Infrastructure — Envision — ISCA IS Rating Tool — BREEAM/CEEQUAL	Sustainability Standards/ Assessments for Finance	— IFC Performance Standards — Equator Principles — PBoC's Official Chinese Green Bond Guidelines — MDB Safeguards & Frameworks (4) — UNPRI[1] — Dagong ESG Credit Rating — GRESB
Sector-Specific Sustainability Standards	— LEED — Equitable Origin — ADB STAR Rating[2] — Hydropower HSAP — AWS International Water Stewardship Standard	International Agreements	— SDGs[3] — Sendai Framework — UNFCCC[4] — Convention on Biological Diversity — Stockholm Convention
Tools for Cities & Regions	— UN Global Compact for Cities — Urban Sustainability Index (by McKinsey et al) — City Resilience Framework and Indicators (ARUP and RF)	National Sustainability Standards	— National Standards, Strategies and Plans: — Russian national standard on „green building“ — Kyrgyzstan National Sust. Dev. Strategy — Qatar Env. Standards on Infra Projects — India Green Bonds Council
Sustainable Project Preparation/ Planning/ Management Tools	— SOURCE — FIDIC Project Sustainability Logbook — CoST [5]	BRI-Specific Standards/Guidance	— ICBC Standard Bank: BRI Economic Health Index and Road Connectivity Index — Guidance on Promoting Green BRI — Guidelines for Env. Protection in Foreign Investment and Cooperation — CHINCA ESG Guidelines

[1] United Nations Principles of Responsible Investment

[2] Sustainability Transport Appraisal Rating

[3] Sustainable Development Goals

[4] United Nations Framework Convention on Biodiversity

[5] Construction Sector Transparency Initiative

5.2 Related Initiatives

The following table summarises some of the most prominent initiatives which are related to promoting sustainability standards along the BRI. Close cooperation with these initiatives and others would be required to achieve success in this project.

Table 2: Summary of Related Initiatives

Initiative	Organization(s)	Description
International coalition for Green Development on Belt and Road (4)	UN Environment and Chinese Ministry of Environmental and Ecological Protection	The coalition will count several dozens of organizations bringing environmental expertise. It aims to make sure that the BRI brings a positive and environmental-friendly development. Note that UNIDO plans to join this initiative and contribute in particular within the area of infrastructure by developing "Carbon Neutral Infrastructure Framework and Implementation Guidelines along the Belt and Road Initiative".
China-UK Green Finance Taskforce (5)	Green Finance Committee (GFC) of China Society for Finance and Banking and Green Finance Initiative (GFI) of City of London	The taskforce brings public and private initiatives in green finance together. The taskforce promotes, analyses and initiates pilot projects having environmental, social, governance and financial benefits.
Green Finance Committee (7)	Green Finance Committee of the China Society for Finance and Banking	The Green Finance Committee promotes research and coordinates initiatives of member institutions in the field of green financing. In December 2015, the Committee published the catalogue of projects approved for Chinese green bonds.
Regular Cooperation and Exchange Mechanism for Banks along the Belt and Road (8)	ICBC (Industrial and Commercial Bank of China)	Initiated the cooperation and exchange mechanism. Banks along the Belt and Road will be able to collaborate and identify win-win opportunities. This organization will help financing the Belt and Road construction.
Institute for	Tsinghua University	The Institute for Sustainable Development Goals

Initiative	Organization(s)	Description
Sustainable Development Goals (9)		undertakes research projects with multidisciplinary partners all over the world with the aim of implementing the SDGs.
One Belt-One Road Strategy Institute (10)	Tsinghua University	The Institute will provide services, give advice on national policies, carry on studies, and organize exchange for the implementation of Belt and Road Initiative.
Green Infrastructure Finance Accreditation (GIFA) (11)	ISCA, China City Development Foundation (CCFD), Green World City (GWC)	A rating scheme for the Chinese infrastructure industry based on the existing ISCA's IS rating scheme which helps to improve the sustainability performance of projects.
Green Belt and Road Investor Alliance (GBRIA) (12)	Agricultural Bank of China, China-Britain Business Council, Green Investment Group, JP Morgan, Standard Chartered	GBRIA invests in sustainable projects along the Belt and Road. The Alliance specializes in financing projects from private and public actors.
Study: Greening the belt and road initiative, WWF's recommendations for the finance sector, January 2018 (6)	WWF & HSBC	The publication gives recommendations for the Belt and Road Initiative from the environmental perspective, mentioning standards, tools, principles that should be applied in the BRI to be aligned with the SDGs. The study is one output of a WWF workstream on BRI that is under development.
Chinese Government Guidance and Cooperation Planning (14) (15) (16) (17) (18)	Government of China	Chinese government has issued Guidance on Promoting the Green Belt and Road, the Belt and Road Ecological and Environmental Cooperation Plan, an Action Plan on Belt and Road Standard Connectivity (2018-20) and has recently approved the Guiding Principles of Financing the Development of the Belt and Road.

Initiative	Organization(s)	Description
A Framework to Guide Sustainability Across the Project Cycle (4)	Inter-American Development Bank	This Framework supports project owners in planning and financing infrastructure so that they meet the SDGs. This working document should serve the discussion between stakeholders.
ITC Standards Map (15)	International Trade Centre	This initiative provides an example of an interactive database which provides clarity and comparability between standards, although its content is poorly aligned with the needs of infrastructure development along the BRI.
Sustainability Standards Data initiative	SuRe®, Envision, ISCA, GRESB, SOURCE, WBG, PPIAF	A pioneering initiative to create an aligned set of infrastructure sustainability indicators between the major global voluntary sustainability infrastructure standards.
Joint Infrastructure Data Initiative (16)	European Investment Bank (EIB), Global Infrastructure Hub (GIH), Long Term Infrastructure Investors Association (LTIIA) and the OECD	The initiative aims to provide on infrastructure investment, with the objective to identify the critical data that is needed to develop infrastructure investment standards and benchmarks.
ISEAL (17)	ISEAL Alliance	ISEAL is the global membership association for credible sustainability standards. ISEAL provides certification to standards schemes that comply with a set of good practice guidelines for standard setting, assurance and impact measurement.
Eco-Industrial Park Guidelines (18)	China State Environmental Protection Administration	A set of guidance aiming regarding the planning and evaluation of Eco-Industrial Parks in China.

Initiative	Organization(s)	Description
Silk Road Bonds Initiative[6]	ICMA, Dagong	A joint initiative to develop a set of bond products adapted to contexts in different BRI countries, topics such as infrastructure bonds, trade bonds, industrial capacity operation bonds and technology innovation bonds.

[6] http://europe.chinadaily.com.cn/business/2016-09/08/content_26741447.htm

5.3 Overview of Key Stakeholders

The following table provides a high-level overview of key stakeholder groups related to the BRI, together with examples of actors in each of these groups. Note that the information provided is intended to give a high-level picture of stakeholder landscape and is in no-way exhaustive.

Table 3: Overview of Key Stakeholder Groups Related to the Infrastructure Development along the BRI

Stakeholder Group	Examples	Motivations with respect to BRI
Government/ Administrative Public Sector	Chinese Government: — NDRC, — BRI, — Ministry of Environmental and Ecological Protection, — Ministry of Commerce (MOFCOM), — State Administration of Foreign Exchange (SAFE).	— Boost trade, — Garner political support, — Increase regional stability, — Utilize overcapacity, — Export Chinese equipment standards and contracted work.
	Local Governments of countries along the BRI: — Chambers of commerce, — Procurement departments, — Planning departments, — Various responsible ministries of finance, environment and service delivery, Foreign ministry etc.	— Foster trade, — Leverage Chinese investment, — Upgrade infrastructure, — Socioeconomic development, — Create opportunities for local companies.
Financial Sector	Multilateral Development Banks: — AIIB, — NDB, — Others (WBG, EIB, ADB, AfDB, IDB etc.). National Development Banks: — Export-Import Bank of China, — China Development Bank, Funds: — Silk Road Fund, — ASEAN Investment Fund.	— Socio-economic development, — Financial stability, — Enacting policy objectives of member countries (or state in the case of national development banks), — Reputation/credibility, — Internationalization of the RMB (in the case of Chinese development banks).

Stakeholder Group	Examples	Motivations with respect to BRI
	State-Owned Commercial Banks: — Industrial and Commercial Bank of China. International Commercial Banks: — HSBC. Private and Institutional Investors: — Invesco Belt and Road Bond Fund.	— Ensuring appropriate risk-return of investments/loans, — Reputation/credibility, — New financing opportunities, — Capital market influences.
	Insurance: — SinoSure, — China Export and Credit Insurance Cooperation. Credit Raters: — Dagong Global Credit Rating Group, Supervisory groups: — China Banking Regulatory Commission, — State Owned Assets Supervision and Administration Commission of the State Council (SASAC), — China Securities Regulator Commission (CSRC).	— Investment risks mitigation, — Provide new services and new income sources, — Capital market influences, — Financial market stability, — Better governance of the banking sector, — Greening the financing system.
Corporate and Private Sectors	Contractors: — China International Contractors Association (CHINCA), Consultants: — China Association of Plant Engineering Consultants (CAPEC). Suppliers: — Various Chinese State-Owned Enterprises: — China State Construction Engineering Corporation Limited,	— Profit, — Risk reduction, — Reputation, — Generating further market demand for services, — Market share, — Promotion of Chinese standards.

Stakeholder Group	Examples	Motivations with respect to BRI
	— China Railway Construction Corporation Limited, — China COSCO Shipping Cooperation, — China Power Investment Corporation, — China Communications Construction Company Limited. NB: A vast array of other players in these categories	

5.4 Infrastructure Projects Anticipated along the BRI

The characteristics of infrastructure projects anticipated along the BRI is difficult to estimate given the breadth and diversity of the initiative. Total investment in BRI projects has been reported as US$143 billion by 2017. Around 8% of these projects have had a CAPEX of US$1 billion or more and about 60% are less than US$100. The total count of projects has been estimated at more than 7000. These projects are spread along 7 corridors in some 72 countries with many projects located in regional areas. (3)

Table 4: Summary of Major Categories of Infrastructure Projects along the BRI

Category	Sub-category	Approximate %
Energy	Coal	12%
	Hydropower	22%
	Other	7%
Transport	Road	7%
	Rail	19%
	Ports & Other	8%
Manufacturing	Miscellaneous	13%
Other	Telecommunications, agriculture, logistics, other.	12%

Source: Kirchherr, J. W., Repp, L., van Santen, R., Verweij, P. A., Hu, X., & Hall, J. (2018). Greening the Belt and Road Initiative: WWF's Recommendations for the Finance Sector.

6 Strategy

6.1 Vision

The overall vision of this endeavour is that Infrastructure projects are implemented to be sustainable, resilient and delivering positive impacts to society, environment and economic development in an equitable manner along the Belt and Road. By implementing appropriate standards along the BRI,

we aim to see projects meeting international best practice, designed to a higher level of climate resilience and carbon neutrality, as well as delivering co-benefits in other aspects of sustainability, such as job creation and resource efficiency.

6.2 Theory of Change

The Figure 1 below describes the theory of change intended for this project. The approach is underpinned by the following key considerations:

1. To be successful, the approach must be stakeholder-led with an emphasis on reconciling norms from China, recipient countries, and the international community as a whole.

2. To be efficient, the approach must build on existing standards-related initiatives along the BRI and globally, whilst being tailored to the specific needs of Chinese actors and actors in countries along the BRI.

3. To be impactful, the approach must be scalable and designed for optimisation with digital systems for management of standardised data.

4. Incentives must be found to provide motivation to states, financiers and project developers to implement standards.

In light of these considerations, the approach described below is considered as a guiding framework to a stakeholder-led process, which by its nature will be flexible and adaptive to stakeholder needs. In defining incentives for actors to uptake standards along the BRI, the following incentives are considered the most relevant: 1. Regulatory – such as including standards in tender specifications or tender evaluation criteria; 2. Financial – such as access to green funds, use of standards for green bond issuance, provision of reduced rates of interest for compliant projects; 3. Reputational – for example through a ranking of contractors based on their compliance with standards, high profile accolade for states or projects achieving high levels of green performance; 4. Political – for example leveraging the high level commitments made by Chinese leaders regarding greening the BRI.

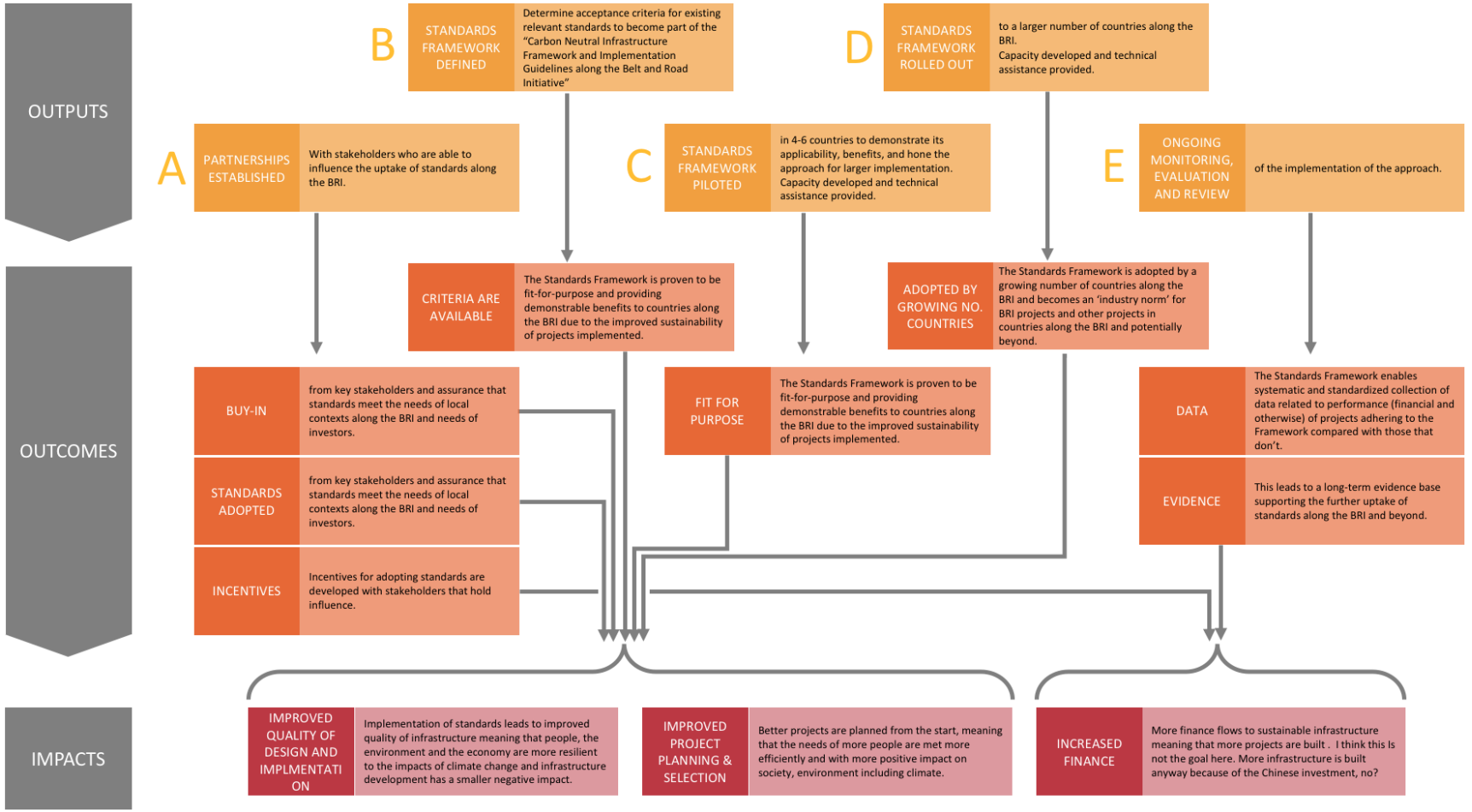

Figure 1: Summarised Theory of Change

6.3 Risks

Table 5 summarizes key risks and mitigation measures identified related to the implementation of this project.

Table 5: Summary of key risks in implementing the Standards Framework along the BRI

Description of Risk	Likelihood	Mitigation Measure
Timing – risk that implementing standard framework in pilot countries takes significantly longer than expected.	High	Communicate timing expectations clearly with participating bodies, and plan for contingency in the case of overruns.
Buy-in – lack of buy-in from key stakeholders, including Chinese Government, Governments of BRI countries, financiers and project developers.	High	Engage with these stakeholders early in the project to ensure that they can guide the development of the project in a direction that genuinely serves their needs. Iterate the approach on a regular basis to ensure that the project maintains utility to stakeholders.
Quality – risk that quality of standards is diluted leading to greenwashing.	Medium	Charge a review body with the responsibility to maintain quality in the standard(s) adopted.
Alignment – risk that efforts under this project are duplicated by another project, or that the initiation of this project adds additional confusion/'noise' regarding greening the BRI.	Medium	Ensure that a thorough initial mapping exists and is accompanied by periodic reviews to ensure any new initiatives are captured. Ensure that this project is coordinated with other initiatives through. Ensure that this approach is effective and targeted and stakeholder-led.
Cost – risk that cost of implementing standards is preclusive in poorer nations.	Medium	Work with standards setters and certification bodies to ensure that costs are commensurate with ability to pay. Ensure that the right level of detail and assurance is achieved to balance quality with affordability of standards implementation.

7 Implementation

The following sections describe the intended approach to implementation of this project. As stated above, the approach must be stakeholder driven and as such reactive to changing stakeholder needs through time.

7.1 Activities

Table 6 shows the planned Outputs and Activities to Develop and Implement a Standards Framework for the BRI. As noted above, success in this endeavour relies on a stakeholder driven approach which is adaptive to stakeholder needs, which will change through time.

Table 6: Planned Outputs and Activities to Develop and Implement a Standards Framework for the BRI

	Outputs	Activities	Responsibility
A	**Partnerships Established** with stakeholders who are able to influence the uptake of standards along the BRI.	— Detailed stakeholder mapping — Round table events — Sign MOUs related to the Data initiative — Establish a governing body of key stakeholders — Ongoing engagement with governing body — Ongoing communicational work, outreach and sharing of lessons learnt	Implementing Agency

B	**Defined Standards Framework.** Determine acceptance criteria for existing relevant standards to become part of the "Carbon Neutral Infrastructure Framework and Implementation Guidelines along the Belt and Road Initiative". Refer to Figure 2 for an example of components that could be included, noting that the actual design must be stakeholder led.	— Determine acceptance criteria for standards to become part of the UNIDO standards framework — Detailed standards mapping and invitation to leading standards to participate — Define criteria catalogue — Define structure for common baseline data between standards — Ongoing data gathering to populate baseline data set — Define Applicability Matrix — Create online interface for the standards framework	Implementing Agency
C	**Standards Framework piloted** in 4-6 countries to demonstrate its applicability, benefits, and hone the approach for larger implementation. Capacity developed and technical assistance provided.	— Establish endorsement of the standard framework in 2 to 4 countries — Provide capacity building and technical assistance to projects to implement the standard framework — Gather lessons learnt to create an efficient process for new countries to endorse the standard framework	Implementing Agency
D	**Standards Framework rolled out** to a larger number of countries along the BRI. Capacity developed and technical assistance provided.	— Establish endorsement of the standard framework in 8 to 10 countries — Provide capacity building to projects to implement the standard framework	Implementing Agency
E	**Ongoing monitoring, evaluation and review** of the implementation of the approach	— Monitor and evaluate at hold points throughout the project — Gather data related to the performance of the projects employing the standard framework	Implementing Agency

Potential Elements to be Covered in the Carbon Neutral Infrastructure Framework and Implementation Guidelines

It is important that the Carbon Neutral Infrastructure Framework and Implementation Guidelines cover a sufficient range of sustainability topics to ensure that sustainability risks are reduced in a balanced way that takes into account potential trade-offs between competing objectives. For example, some projects may have positive climate benefits, however, may cause serious biodiversity or social outcomes. These negative externalities, as well as co-benefits must be taken into account. Table 7 below suggests sustainability themes that should be included. Figure 2 shows an example structure that the standards framework could adopt.

Table 7: Recommended Dimensions and Themes to be included in the Initiative

3 Dimensions	14 Themes
Environment	Climate
	Biodiversity and Ecosystems
	Environmental Protection
	Natural Resources
	Land Use and Landscape
Society	Human Rights
	Labour Rights and Working Conditions
	Community Impacts
	Customer Focus and Community Involvement
	Socioeconomic Development
Governance	Management and Oversight (incl. Financial Sustainability)
	Sustainability and Resilience Management
	Stakeholder Engagement
	Transparency and Accountability

Note: dimensions and themes in Table 7 are based on the SuRe® Standard for sustainable and resilient Infrastructure.

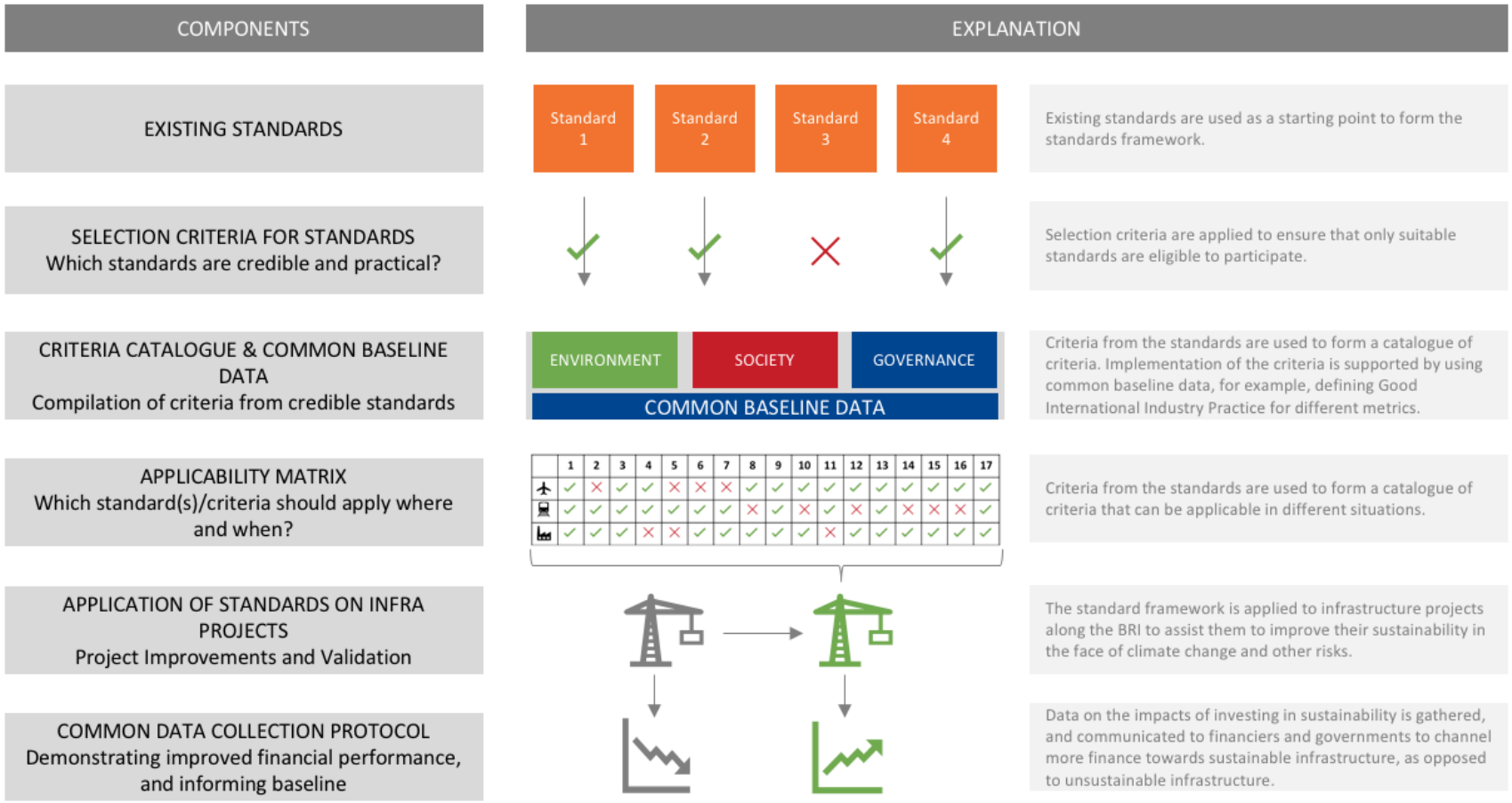

Figure 2: Potential components of a Standard Framework for the BRI (NB: it is important that the definition of the actual framework would be stakeholder led and consensus based.)

7.2 Timeline

Table 8 Proposed Timeline for Implementation

	Task	Month																												
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
		PHASE 1 - DEVELOP AND PILOT												PHASE 2 - SCALE UP																	
0	Project Management																														
01	Project Management During Tasks A, B, C																														
02	Project Management During Tasks D, E																														
A	Communicate and Establish Partnerships																														
A1	Detailed stakeholder mapping																														
A2	Round table events																														
A3	Sign MOUs related to the standard framework																														
A4	Establish a governing body of key stakeholders																														
A5	Ongoing engagement with governing body																														
A6	Ongoing communicational work, outreach and sharing of lessons learnt																														
B	Define Standards Framework																														
B1	Determine acceptance criteria for standards to become part of the UNIDO standards framework																														
B2	Detailed standards mapping and invitation to leading standards to participate																														
B3	Define criteria catalogue																														
B4	Define structure for common baseline data between standards																														
B5	Ongoing data gathering to populate baseline data set																														
B6	Define Applicability Matrix																														
B7	Create online interface for the standards framework (very basic in phase 1, then improve in phase 2)																														
C	Pilot Standards Framework																														
C1	Establish endorsement of the standard framework in 2 to 4 countries																														
C2	Provide capacity building to projects to implement the standard framework																														
C3	Gather lessons learnt to create an efficient process for new countries to endorse the standard framework																														
C4	Allowance for engagement of experts/standard auditors/certification bodies																														
D	Roll Out Standards Framework																														
D1	Establish endorsement of the standard framework in 8 to 10 countries																														
D2	Provide capacity building to projects to implement the standard framework																														
D3	Allowance for engagement of experts/standard auditors/certification bodies																														
E	Monitoring, Evaluation and Review																														
E1	Monitor and evaluate at hold points throughout the project																														
E2	Gather data related to the performance of the projects employing the standard framework																														

Key milestones will be further developed to align with objectives of stakeholders and, where possible to take advantage of other events that may assist in outreach. For example, the initiative would be presented where possible at the anticipated BRI Summit in 2019.

7.3 Budget

The following table provides an indicative budget for implementation of the project over a three year implementation period. Phase 1 focuses on developing and piloting the standard framework and covers primarily Tasks A, B and C. Phase 2 focuses on scaling the approach up to a larger number of countries along the BRI and covers primarily Tasks D and E.

Table 9: Budget Fee Estimate

	Task Step	Total (EUR)	Phase 1 (EUR)	Phase 2 (EUR)
0	Project Management	240'00	100'000	140'000
A	Communicate and Establish Partnerships	187'000	149'600.0	37'400.0
B	Define Standards Framework	475'000	475'000	
C	Pilot Standards Framework	408'000	408'000	
D	Roll Out Standards Framework	980'000		980'000
E	Monitoring, Evaluation and Review	110'000	50000	60'000.0
	Total	**2'400'000**	**1'182'600**	**1'217'400**

7.4 Monitoring, Reporting and Evaluation

Table 10: Monitoring, Reporting and Evaluation Framework

	Results	Indicators	Means of Verification
Objective	Infrastructure projects are implemented to be sustainable, resilient and delivering positive impacts to society, environment and economic development in an equitable manner along the Belt and Road.	Indicators to be determined as part of the definition of the Standards Framework.	TBC
Outcomes	**Buy-in** from key stakeholders and assurance that standards meet the needs of local contexts along the BRI and needs of investors. The Standards Framework is **proven to be fit-for-purpose** and providing demonstrable benefits to countries along the BRI.	Satisfaction of adopting countries and stakeholders. Development and adoption of a suitable applicability matrix or other materiality assessment mechanism.	Documents/ emails/ other communication of satisfaction.
	Standards are adopted, understood and implemented along the BRI. **Criteria are available** which assist project planners, procurers, developers to create projects that are in line with global objectives related to climate change and other sustainability challenges.	Number of projects and employing sustainability standards as a result of the initiative.	Communication with projects.
	Incentives for adopting standards are developed with stake-	Number of dedicated initiatives providing incentive for standard	Communication of these initiatives.

	Results	Indicators	Means of Verification
	holders that hold influence.	application.	
	The Standards Framework is **adopted by a growing number of countries** along the BRI and becomes an 'industry norm' in countries along the BRI and potentially beyond.	Number of countries adopting the Standards Framework.	Documents/ emails/ other communication of adoption.
	The Standards Framework enables systematic and standardised **collection of data** related to performance (financial and otherwise) of projects adhering to the Framework compared with those that don't. This leads to a long-term **evidence base supporting the further uptake of standards** along the BRI and beyond.	Existence of a project database which leads to conclusions about performance of projects using sustainability standards compared with those that aren't.	Database.
Outputs	**A. Partnerships Established** with stakeholders who are able to influence the uptake of standards along the BRI.	Number of partnerships formed. Number MOUs or Partnership agreements signed.	Documents/ emails/ other communication of partnership.
	B. Defined Standards Framework. Determine acceptance criteria for existing relevant standards to become part of the "Carbon Neutral Infrastructure Framework and Implementation Guidelines along the Belt and Road Initiative". Refer to Figure 2 for an example of components that could be included, noting that the actual	Framework successfully created.	Framework website.

Results	Indicators	Means of Verification
design must be stakeholder led.		
C. Standards Framework piloted in 4-6 countries to demonstrate its applicability, benefits, and hone the approach for larger implementation. Capacity developed and technical assistance provided.	Number of countries that have adopted the Standards Framework and implemented it. Effectiveness of capacity development and technical assistance activities.	Communication with country representatives. Structured feedback from capacity development and technical assistance.
D. Standards Framework rolled out to a larger number of countries along the BRI. Capacity developed and technical assistance provided.	Number of countries that have adopted the Standards Framework and implemented it. Effectiveness of capacity development and technical assistance activities.	Communication with country representatives. Structured feedback from capacity development and technical assistance.
E. Ongoing monitoring, evaluation and review of the implementation of the approach.	N/A	N/A

8 Next Steps

UNIDO plans to continue gathering feedback on the approach presented in this report and to gain support for a revised approach to establishing a Developing a Carbon Neutral Infrastructure Framework and Implementation Guidelines along the Belt and Road Initiative. The anticipated next steps are as follows:

Q2 2018:	Continued stakeholder engagement, including targeted interviews with key stakeholders.
Q3 2018 – Q3 2019	Phase 1 Framework development and Piloting
Q3 2019 – Q3 2020	Phase 2 Scale Up

UNIDO and GIB invite engagement and partnership with initiatives and organisations related to this initiative. To become involved, please contact Katarina Barunica on k.barunica@unido.org.

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Appendix A – Extended List of Examples of Infrastructure Standards and Tools

African Development Bank Group's (AfDB) Integrated Safeguards Systm
Agenda 21 Sustainable Construction
Aspire - by Engineers Against Poverty and Arup
AWS International Water Stewardship Standard
BASE Barbados Energy Projects
BREEAM/CEEQUAL (Civil Engineering Environmental Quality Assessment)
CASBEE (buildings)
CBD Convention on biological diversity
CBDD System (Carnet de Bord Developpement Durable)
CCBA (biodiversity)
CDIA CIIPP (City Infrastructure Investment Programming and Priorisation Toolkit)
CEN-CENELEC (European Committee for Electrotechnical Standardization)
China's Belt and Road Initiative (BRI)
City Resilience Framework and Indicators (ARUP and RF)
Clean Shipping Index
Climate Bonds Initiative
Climate Bonds Standard
CoST - Construction Sector Transparency Initiative
DAGONG ESG Credit Rating
DGNB (Germany, buildings)
Earth Dividend™
EASE_IIRSA_LatinAmerica
Eco2 Cities (World Bank)
EDGE (IFC)
Energiestadt (European Energy Award)
Envision™
Equator Principles
Equitable Origin
European Commission Taxonomy of Sustainable Investment (upcoming)
FIDIC's Project Sustainability Logbook
Financial Valuation Tool (IFC and CommDev)
GIFA Green Infrastructure Finance Accreditation principles
Global Compact Cities Scan
Global Reporting Initiative (GRI)
Gold Standard for the Global Goals
Green Bond Principles (GBP) - ICMA
Green Buildings Councils
Green City Index (by Siemens)
Green Mark (green buildings, Singapore)
Green Star (buildings, AUS&SA)
Green Bonds Initiative
Greenroads Certification
GRESB Infrastructure
GSF Sustainability Assessment
Guidance on Promoting Green Belt and Road
Guidelines for Environmental Protection in Foreign Investment and Cooperation
Guidelines for Large Infrastructure Projects Amazon FGV EAESP
High conservation value (HCV) identification
Hongkong BEAM (building)
HQE (buildings, France)
Hydropower HSAP
Hydropower Sustainability Assessment Protocol
ICAT Initiative
ICBC Standard Bank - Belt and Road Economic Health Index
ICBC, Belt and Road Connectivity Index
ISCA IS Rating Tool
IFC Performance Standards on Environmental and Social Sustainability

IFC's Environmental, Health, and Safety Guidelines for Toll Roads and Railways
IFC's Environmental, Health, and Safety Guidelines for Gas Distribution Systems
IFC's Environmental, Health, and Safety Guidelines for Thermal Power Plants
IFC's Environmental, Health, and Safety Guidelines for Wind Energy
ILO IRAP (Integrated Rural Accessibility Planning)
Integrated Biodiversity Assessment Tool (IBAT)
Integrated Waste Management Scoreboard
Inter-American Development Bank - A Framework to Guide Sustainability Across the Project Cycle
InVEST (Infrastructure Voluntary Evaluation Sustainability Tool)
Investor Confidence Project (ICP)
Investor Water Toolkit
IRMA (mining)
ISO 14000 Environmental Management
ISO 15392-2008 Sustainability in Buildings and Civil Engineering Works
ISO 21929/30/31Sustainability in Building Construction
ISO 31000 Risk Management
ISO 37101 Sustainable development in communities - Management system for sustainable development
ISO 37120: Sustainable Development of Communities - Indicators for city services and quality of life
LCE4ROADS (roads; EU)
LEED (Leadership in Energy and and Energy Design)
Low Impact Hydropower Institute (LIHI)
Minergie (CH, buildings)
Multilateral Development Bank Safeguards (for example, AIIB, NDB, AfDB, ADB, IDB, KfW, WBG, IBRD, IDA)
Natural Capital Coalition
NYC Dept of Design and Construction
OECD Blended finance principles
OECD Guidelines for Multinational Enterprises
OECD Policy Framework for Investment - Catalogue of Questions and Principles
Official Chinese Green Bond Guidelines - PBoC's
OPAL
PEER (energy grid modernization)
RELi (resilience action list)
Savi (Sustainable Asset Evaluation Tool)
Sustainable Development Goals
Sendai Framework for Disaster Risk Reduction 2015-30
SLoCaT Results Framework on Sustainable Transport
SNBS (Standard Nachhaltiges Bauen Schweiz)
Social Capital Protocol
SPeAR (ARUP Sustainable Project Appraisal Routine)
SRBA
STAR (ADB - Sustainability Transport Appraisal Rating)
Stockholm Convention on Persistent Organic Pollutants
SuRe® - the Standard for Sustainable and Resilient Infrastructure
The Roads Filter
UN Global Compact Principles (The Ten Principles)
UN Office for Project Services (UNOPS) Environmental Management System (EMS)
UN Principles for Responsible Investment (UNPRI)
UNEP Global Initiative for Resource Efficient Cities
UNFCCC (United Nations Framework Convention on Climate Change)
Urban Sustainability Index (by McKinsey et al)
UWP Sustainability Guidelines

WB PPP Group Infrastructure Prioritization Framework	WWF Asset Owner Guide on Coal and Renewable Electric Power Utilities
World Bank Environmental and Social Framework	WWF Water Risk Filter
WWF (principles for World Heritage sites and recommendations for the extractives sector)	