Guidance Note on Uzbekistan Green Taxonomy

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on Uzbekistan Green Taxonomy

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ACKNOWLEDGMENTS

ABBREVIATIONS AND ACRONYMS

AFD	Agence Française de Développement
ASEAN	Association of Southeast Asian Nations
ASR	Agency for Strategic Reform
BAT	Best Available Techniques
CBU	Central Bank of Uzbekistan
CCA	Climate Change Adaptation
CCM	Climate Change Mitigation
CCUS	Carbon Capture, Utilization, and Storage
CHP	Combined Heat and Power
CSO	Civil Society Organization
CSP	Concentrated Solar Power
EIA	Environmental Impact Assessment
EPBD	Energy Performance of Buildings Directive
ESG	Environmental, Social, and Governance
EU	European Union
FF	Foundation Framework
FI	Financial Intermediary
GCEA	General Classifier of Economic Activities
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GRID	Green, Resilient, and Inclusive Development
ICT	Information and Communication Technology
IDA	International Development Association
IEA	International Energy Agency
IFC	International Finance Corporation
ILO	International Labour Organization
ISIC	International Standard Industrial Classification of All Economic Activities
KBA	Key Biodiversity Area
MEEPCC	Ministry of Ecology, Environmental Protection, and Climate Change
MEF	Ministry of Economy and Finance
MRV	Monitoring, Reporting, and Verification
NACE	Nomenclature of Economic Activities
NDC	Nationally Determined Contribution
NZEB	Nearly Zero-Emission Building
ODA	Official Development Assistance
OECD	Organisation for Economic Co-operation and Development
OKED	Uzbekistan Industrial Classification System
PPP	Purchasing Power Parity
PV	Photovoltaic
SDG	Sustainable Development Goal
SOE	State-Owned Enterprise
UMIC	Upper-Middle-Income Country
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
WHO	World Health Organization

ABSTRACT

This Guidance Note serves to support the government of Uzbekistan in the design of a national Green Taxonomy. A green taxonomy sets out rules for classifying environmentally sustainable activities and can be instrumental in the transition to a Green Economy by guiding policies and public resource flows, and influencing the private sector's investment response. The Guidance Note discusses methodological choices for the taxonomy and their policy implications, reviews existing international practices, and recommends a model taxonomy and roadmap for further development of the taxonomy. A key message in the note is the importance of setting clear strategic goals that will inform the selection of the taxonomy's environmental objectives and its other features. Also discussed are the institutional arrangements to coordinate the actions and inputs of multiple stakeholders during the development process of the taxonomy, and the importance of strong oversight and consistent enforcement of taxonomy rules by a competent regulatory body.

EXECUTIVE SUMMARY

A green taxonomy provides a standardized definition and classification of environmentally sustainable activities. This Guidance Note addresses policy makers and regulators and is intended to guide the design of an Uzbekistan green taxonomy for wide use in the economy. A green taxonomy establishes a consistent and rigorous system for classifying environmentally sustainable activities and projects. With a robust set of rules, policy makers have a more complete picture of where the gaps and opportunities are for deploying policy tools to encourage greening and discourage unsustainable activities. On the other hand, the lack of such rules, or allowing businesses, financiers, and investors to set their own definitions and standards for green activities, runs the risk of 'greenwashing'. This is the phenomenon of enterprises overstating their environmental credentials or making fraudulent claims. Excessive greenwashing also means inflated figures for 'green-labeled' financial flows and a misleading picture of the impact of financing on environmental sustainability. A national green taxonomy that sets out clear rules and definitions of environmentally sustainable activities will alleviate these concerns. In Uzbekistan's case, a green taxonomy is also a timely and effective aid in the execution of the country's Green Economy Strategy and Measures for 2030. It can potentially guide the deployment of policies and public resource flows, steer the private sector's investment response, and give consumers an environmental reference point about their purchasing decisions.

The government has committed to developing such a green taxonomy. This Guidance Note supports the development process of the taxonomy with recommendations on design, drawing from the experience of other countries. A roadmap for developing the taxonomy is also proposed. The high-level messages to policy makers as guidance are as follows:

- **There must be a clear link between the taxonomy's strategic goals and the country's environmental objectives.** The environmental objectives that underpin the taxonomy have cascading effects on the taxonomy's coverage and use and are one of the most critical policy decisions to be made. The choice could be a comprehensive set of green objectives: environmental protection, climate change, biodiversity, and circular economy. Alternatively, the taxonomy could focus only on climate change, as some countries have opted to do. The Guidance Note recommends environmental objectives that directly support the green economy agenda and its relevant sectors, to align with immediate national priorities and steer more resources and policy attention toward the agenda.

- **The development process must involve a core group of government entities with specific mandates and expertise, which then hands over to a lead regulator when the taxonomy is operational.** Though this multiagency group may not become the primary regulator of the taxonomy, it is vital for the development process. The entities should include an economic policy coordinator, namely the Ministry of Economy and Finance (MEF), and technical entities, namely the Ministry of Ecology Environmental Protection and Climate Change and technical institutes with sector expertise and access to data as well as the financial sector regulator.

- **Where possible, the national taxonomy should align with international good practices, and any deviation should have basis in national policies that are environmentally sound.** Alignment with international practices gives confidence and assurance that Uzbekistan's definition of green activities is robust. Along with sound oversight and enforcement, the risk of greenwashing is mitigated. This attracts international support to Uzbekistan's environmental objectives, including from donors and private financiers seeking green investments, enlarging the pool of available capital beyond domestic public and private finance. Deviation from international good practice should be supported by the same national policy framework underpinning the taxonomy. For instance, the inclusion of natural gas power generation as a green activity could be justified if it is an accepted transitional strategy under the national long-term plan for decarbonization and if it meets other predefined conditions.

- **A strong regulatory agency is needed for the taxonomy's credible implementation.** The future regulator and supporting technical bodies will face a steep learning curve, given that green finance is relatively new in Uzbekistan and that environmental regulations have still to evolve toward use of best available techniques (BAT) and industry-specific performance standards. While the government should immediately begin to develop its institutional capability, it should consider establishing twinning arrangements with taxonomy oversight bodies in the European Union (EU), Association of Southeast Asian Nations (ASEAN), or other peer countries to fast-track its oversight ability.

- **A body of technical experts is needed to advise the regulator and taxonomy users.** A technical advisory body is needed to provide independent and objective advice to the regulator, and the experts in this body should be relatively free of industry affiliation. Certain industries may have strong political backing or will aggressively lobby their interests during the taxonomy development and piloting stage. To manage this pressure, strong institutions are needed. The permanent regulatory body will need to consistently apply and enforce environmentally grounded taxonomy rules to prevent 'greenwashing' or outright fraud. The regulator must be able to count on objective input from the technical advisory body. The advisory body is also needed for the expansion and fine-tuning of the taxonomy in keeping with green technology advancements and market innovations. While modifications to the taxonomy are inevitable, a gradual evolution is preferable to abrupt and frequent changes to the taxonomy.

- **During the operational phase of the taxonomy, a digital platform should be used to share information, data, and practices and foster transparency and accountability.** A digital system allows easy access to information on green projects or activities of enterprises and government entities. This helps mainstream the green economy agenda. As green finance reforms gain momentum and more enterprises release sustainability reports about their activities, a digitized platform will facilitate standardized and efficient reporting[1] and enable investors and financiers to better assess the nonfinancial aspects of companies.

A Model for Uzbekistan's Green Taxonomy

- **Environmental sustainability as a national priority is codified in the green economy framework,[2] which consists of the Green Economy Strategy (2019) and the Green Economy Measures (2022).** This is the **recommended strategic framework for** the green taxonomy. For taxonomy design, the **main policy choices are as follows**:

- **While the green economy framework is adequate, it is recommended that other specific strategies are included to provide more strategic definition for the taxonomy.** The legislated strategy documents to be included deal with renewable energy, environmental protection, waste, and biodiversity.

- **The number of environmental objectives should be optimized so that economic activities that are the main contributors or the most exposed to the environmental issues of concern are being targeted but without creating an excessive number of taxonomy principles and rules.** The taxonomy can be expanded over time. One option is to concentrate the taxonomy on just two objectives: climate change mitigation and climate change adaptation. Several countries have opted for this. But given the ambition of the green economy framework to address wide-ranging environmental sustainability issues, the Guidance Note recommends six environmental objectives that are modeled after the EU Sustainable Finance Taxonomy. Social development is not an explicit objective in the taxonomy, but social impacts are considered under its methodology.[3] Similarly, 'just transition' issues are sufficiently complex to warrant other purpose-designed solutions.

Recommended Principles, Forms, and Rules

<u>Principles</u> are needed to assess how a particular economic activity *contributes* to environmental objectives. The principles of 'contribute to environmental objectives', 'do no significant harm in other areas', and 'respect social safeguards' are recommended based on established taxonomies, including that of the EU.

The recommended <u>form</u> is an <u>activity-based</u> taxonomy beginning with a few priority sectors before gradually expanding to cover all economic sectors. This allows the Uzbekistan green taxonomy to take advantage of the strong strategic direction provided by the green economy framework versus the more open-ended approach of principles-based taxonomies. An activity-based taxonomy emphasizes the environmental outcomes of a specific economic activity and requires more data on the environmental performance of activities. The information requirements may be a challenge for Uzbekistan but the activity-based taxonomy is still achievable by initially focusing on a narrow set of sectors and using qualitative forms of objective technical assessment that are less data dependent. A principles-

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[1] For instance, a common digital standard has been found whereby EU financial companies can easily report investee capital expenditures that support activities complying with the EU Sustainable Finance Taxonomy. https://www.xbrl.org/news/digitising-the-eus-green-taxonomy-a-proof-of-concept/

[2] 'Strategy for the Transition to a Green Economy (2019–2030)' (PP-4477, 2019) and the 'On Measures to Improve the Effectiveness of Reforms Aimed at the Transition to a Green Economy' (PP-436, 2022).

[3] Social harm is managed by one of the principles of the taxonomy requiring social safeguards to be applied, discussed in Chapter IV under the section Three Environmental Objectives. Social development as an express objective is not included or discussed. Goals such as promoting equity and under-represented groups are distinct social development goals that would materially increase the number of rules and criteria in a taxonomy. A dedicated social taxonomy may be the more effective way of covering social development objectives.

based taxonomy, on the other hand, uses a set of rules for assessing any economic activity and relies on case studies to illustrate eligibility rather than specific assessment rules. Both types of taxonomies rely on clear principles and rules. In essence, an activity-based taxonomy is a more advanced form of the principles-based taxonomy in the evolution cycle. By having strong governance arrangements around the activity-based taxonomy, activities outside the priority sectors and not represented on the taxonomy's activity list can still be classified by applying the taxonomy principles. In these situations, additional certification on a verifiable digital platform may be warranted.

Priority sectors are selected based on their potential contribution to environmental objectives, which can be inferred from data such as greenhouse gas (GHG) emissions by sector or other indicators of environmental impact. To support the six environmental objectives, the eight recommended priority sectors are shown in Table ES.1 and marked with (*). Other relevant sectors targeted for eventual development and inclusion into the taxonomy are also listed.

Table ES.1: Relevant Sectors Based on Green Economy Priority Actions

Priority Actions I, III, IV, V, Including Climate Change Mitigation	Priority Actions II, VI, Including Climate Change Adaptation and Resilience
Energy (*) - Power generation, including thermal and nuclear power stations - Hydropower and other renewable energy (wind, solar, geothermal energy) - Residential heating and combined heat and power (CHP) - Transmission, distribution, storage - Efficiency in agriculture, buildings, industries	**Water (*)** - Storage, distribution, treatment - Quality monitoring - Flood and drought management - Infrastructure (resilience) - Electrical grid investments - Roadways and bridges - Urban green spaces - Seismic risk compliance
Oil and gas Energy efficiency and loss prevention	**Forestry (*)** - Reforestation and land restoration - Ecosystem protection
Processing and other industries (*) - Energy-intensive industries, including building materials (steel, cement) - Chemical and metal refining - Fertilizer production - Mining - Industrial pollution control - Industrial land remediation	**Health care**
Buildings (*) - Residential and commercial building construction - Efficiency improvements, all buildings - Seismic risk proofing	
Transportation (*) - Public transit - Passenger rail - Electric vehicles - Nonmotorized personal mobility - Freight transport	
Waste (*) - Waste minimization - Collection, handling, safe disposal - Waste diversion, recycling, reuse - Energy recovery, emission reduction	
Agriculture (*) - Sustainable agriculture and farming - Agricultural pollution control - Land restoration	
Enabling sectors	

Rules of assessment are used to assess economic activities for their alignment with taxonomy principles. The rules should preferably be coded on a digital platform where the assessment can be signed and stored. The Uzbekistan taxonomy is recommended to begin its pilot phase with rules of assessment that apply nonquantitative criteria. A systematic assessment with nonquantitative screening criteria can involve a decision tree, as illustrated in Figure ES.1, which classifies activities into three possible categories reflecting their degree of 'green.' Different forms of qualitative assessment criteria can be used, depending on what is most appropriate for the sector. Table ES.2 shows examples for the energy and water sectors.

Table ES.2: Example of Using Assessment Criteria

Principle	Criteria for Assessment		Response
Contribute to environmental objective	**Sector:** Energy provision Environmental objective: Climate change mitigation	▪ Does the activity cut out carbon emissions? ▪ Does the activity lead to the lock-in of carbon-intensive technology?	Yes/No
	Sector: Water resource management Environmental objective: Climate change adaptation	▪ Does the activity enhance water security or improve climate resilience?	Yes/No
Do no significant harm	**Both sectors**	▪ Are other environmental objectives harmed, or is there remaining harm that was not mitigated?	Yes/No

Figure ES.1: Decision Tree to Categorize Economic Activities
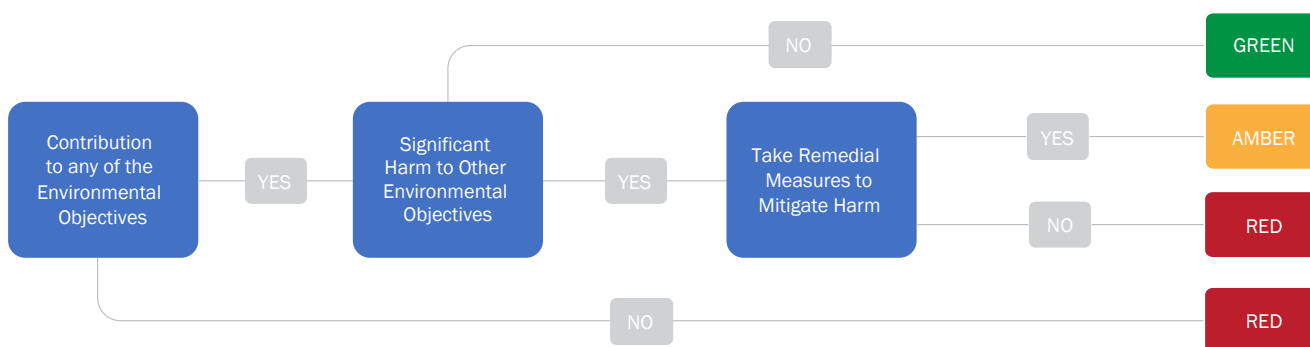
Green (Supporting) identifies activities that are clearly aligned with the objectives of the taxonomy. In the energy provision example, activities that do not fully eliminate emissions would qualify by not contributing to carbon technology lock-in. This is demonstrated by the activity undertaking a transition consistent with nationally approved emissions reduction pathways. In doing so, the activity aligns itself with the objectives of the taxonomy.

Amber (Transition) identifies activities that are not fully aligned but are transitioning to meeting them in a quantifiable and time-bound way. Considerable discretion is needed to classify activities as Amber, and this should be informed by the government's ultimate policy objectives. Amber activities may not fully meet environmental objectives because alternate technologies are still in development and not yet fully viable. This could be the case for the decarbonization of industries like steel and cement, where low-carbon alternatives are prohibitively expensive at present but are expected to become more commercially viable in the future as technology advances. **The Amber category is where policy interventions could have the most significant environmental and economic impact, by prompting policy makers to apply incentives and support measures to help the sector overcome transition challenges.**

Red (Unsustainable activities/prohibited/excluded) identifies activities that will be excluded from the taxonomy as they are at odds with the taxonomy's goals. Though this means red activities are not part of the taxonomy, information on which activities are red should be retained as it is useful for policy makers and other decision-makers.

In terms of the development pathway, the Guidance Note recommends that authorities work toward the stage of an activity-based taxonomy with qualitative criteria. This stage is represented by a pilot taxonomy based

on environmental objectives broadly aligned with the EU Sustainable Finance Taxonomy. The taxonomy principles combine the practices from various countries to reflect the latest trends in dealing with transitional activities. The decision tree and rules of assessment for Uzbekistan are based on the systematic and nonquantitative evaluation currently in use in the ASEAN region and elsewhere. Having reached this stage, the government can decide on how to further develop the pilot taxonomy. It could be expanded to cover all sectors, still relying on qualitative criteria, and it can also be gradually refined by incorporating quantitative assessment criteria. This evolution from the principles-based taxonomy to the recommended pilot activity-based taxonomy and finally to a more refined taxonomy with quantitative criteria is illustrated in Figure ES.2.

The pilot taxonomy should not be treated as a static 'positive' list. The 'precursor' principles stage of the taxonomy needs to take a prominent position in the taxonomy documentation so that guidance on non-represented sectors and activities is available. Given the evolving state of green markets and technologies, new opportunities will emerge, and some activities will become redundant. As the taxonomy is expanded and fine-tuned, the principles must be called upon to interpret the market and technology landscape as it matures.

Figure ES.2: Model Development of the Uzbekistan Green Taxonomy
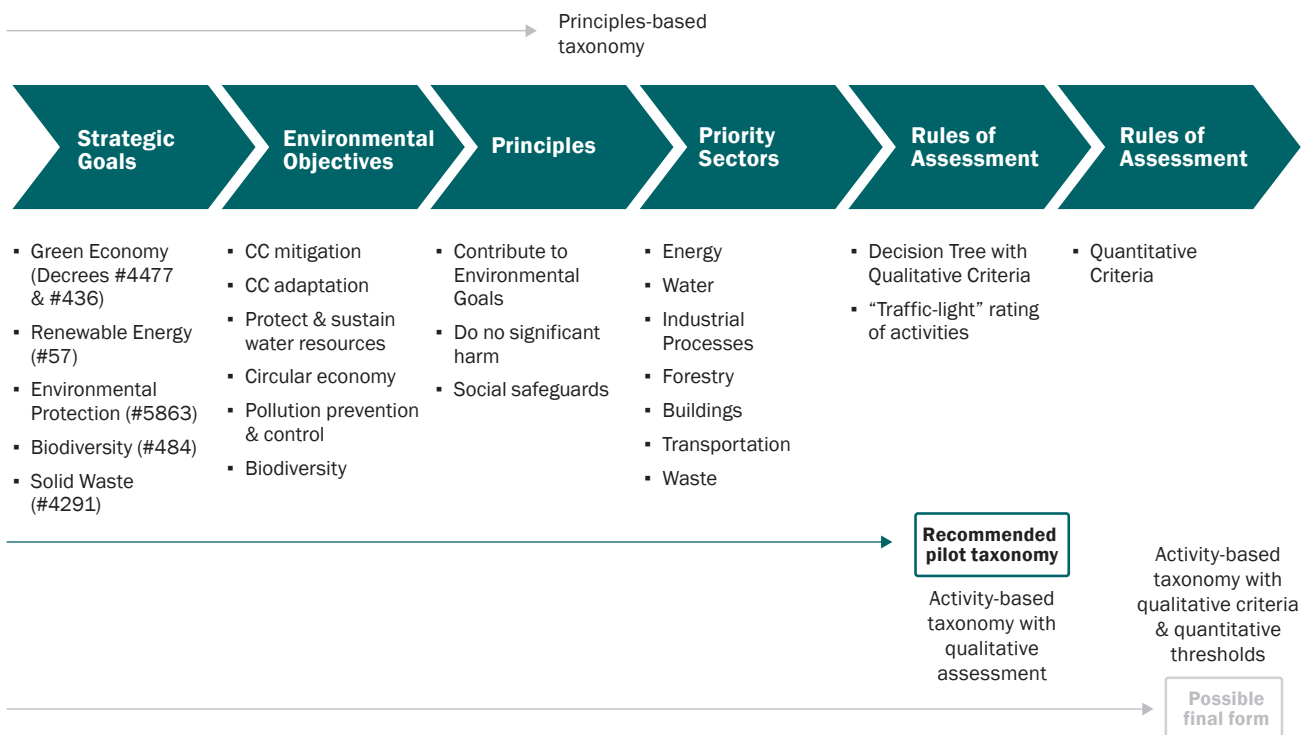
I. COUNTRY CONTEXT

Environmental Sustainability Policies in Uzbekistan

Uzbekistan has embarked on an ambitious reform path that aims to elevate the country to upper-middle-income status early in the next decade. Over the last seven years, the government has undertaken major reforms toward a more market-based economy that will reshape the economy to reach such goals. Uzbekistan has the opportunity to enhance this economic transition, by including green goals in the transformation and maximizing its long-term benefits. The synergy in the greening of the economic transformation was acknowledged in the government's 'Strategy for the Transition to a Green Economy (2019–2030)' (PP-4477, 2019) where 'green policies' act as an integral part of the broader economic transition. Green strategies such as resource efficiency and environmental management strengthen economic development, by freeing up resources for other areas of growth, grooming more competitive businesses, and preserving a healthy base of natural resources.

The Presidential Resolution 'Measures to Improve the Effectiveness of Reforms Aimed at the Transition to a Green Economy' (PP-436, 2022) was approved recently to execute this strategy. The resolution amounts to a green economy action plan with policies and initiatives for each economic sector as well as targets and deadlines for reaching specific green transition goals. This includes a target to generate 25 percent of its electricity from renewable sources by 2030. Solar and wind farms are among the planned renewable energy initiatives. To protect and rehabilitate forests, there is a target increase in acreage of forested land, including green urban areas. The use of water-saving irrigation technology will also be expanded to achieve quantitative targets in resource efficiency.

These green economy measures strengthen and expand on other environmental commitments in other environmental sustainability legislations with the same 2030 planning horizon, such as the 'National Strategy for Environmental Protection (2019–2028)' (UP-5863, 2019). Under the strength of these strategies and policies, environmentally sustainable interventions and activities in renewable energy, water conservation and management, green transport, waste management and reduction, and others are all expected to ramp up. In this context, a taxonomy of green projects is viewed as an effective tool to achieve these sustainability goals, by helping organize policy actions and financing, both public and private.

The Government of Uzbekistan has made international commitments on climate change and has begun to increase their ambition. In 2018, Uzbekistan ratified the Paris Agreement and submitted a Nationally Determined Contribution (NDC) to reduce greenhouse gas (GHG) emissions per unit of gross domestic product (GDP) by 10 percent by 2030, from the 2010 baseline. In 2021, Uzbekistan announced at COP26 that this commitment would be increased to 35 percent.[4] With rapid GDP growth projected, Uzbekistan has the scope to further increase the ambition of its commitment. A Long-Term Decarbonization Strategy currently under preparation will provide the basis for updating the NDCs and potentially lead to more ambitious targets. In 2022, Uzbekistan also became a member of the Global Methane Pledge and committed to reducing methane emissions by 30 percent by 2030. While Uzbekistan does not yet have sector- or GHG-specific emissions reduction targets, sector objectives have been aligned. For instance, the share of renewable energy power generation is expected to be increased to 30 percent of total generation.

Impact of Environmental Degradation and Climate Change

With its arid climate, Uzbekistan is expected to come under severe climate change stress with average temperature projected to rise further over this century. The country of approximately 450,000 km^2 is dominated by large desert plains, including desert areas in the far west that have expanded with the drying of the Aral Sea. Uzbekistan is already facing the effects of a changed climate. Droughts, extreme heat, rainfall volatility, and dust storms are all expected to have increasingly severe impacts. Average temperature has already risen by 2.9°C from 1950 to 2020 and is expected to increase by 1.21–1.94°C over this century. This is especially concerning for the southeastern part of the country where this will likely worsen water scarcity and ecological damage. Uzbekistan is a small contributor to global emissions and yet is one of the most energy-intensive countries in the world. While the country produces just 0.3 percent of global CO_2 emissions, it consumes too much energy for its size. Uzbekistan's energy intensity per GDP is three times the average for the Europe and Central Asia region.

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[4] 26th Conference of the Parties, United Nations Framework Convention on Climate Change.

Without action to decarbonize, rising energy and environmental costs will soon limit its economic growth and constrain its export sector as trade partners begin to enact global climate policies.

Climate change is not the only environmental stress. Air pollution is a growing problem. The annual costs of the damage to health from ambient $PM_{2.5}$ pollution have reached 6.5 percent of GDP.[5] The main sources of air pollution are residential heating, transport, industry, power generation, agriculture, and dust from municipal activities and/or land degradation and desertification. The underlying causes of the ecological disaster of the Aral Sea—once the fourth largest lake in the world but now completely dried—such as intensive resource use and poor land use practices have persisted and continue to cause environmental and development issues. Compared to Eastern Europe and Central Asia countries and upper-middle-income countries (UMICs), Uzbekistan has room to improve on various environmental sustainability aspects, such as water use, land degradation, and biodiversity, as shown in Table 1. The share of land found to be degraded in Uzbekistan is above the UMIC average. Uzbekistan's high energy intensity per GDP is compounded by high fugitive emissions from its energy systems. The per capita rate of solid waste management is low compared to the Europe and Central Asia average. The percentage of the population exposed to harmful air pollution is also higher than the comparators.

Table 1: Uzbekistan Environmental Sustainability Indicators

Indicator	Key Sources and Main Issues	UZB	Benchmark	
Air pollution: $PM_{2.5}$	Percentage of population exposed to $PM_{2.5}$ above the World Health Organization (WHO) guideline (25 ug/m³); defined as the portion of a country's population living in places where mean annual concentrations of $PM_{2.5}$ are greater than 25 ug/m³	72.2[6]	56.6	UMIC
	Total non-accidental mortality from ambient air pollution (% GDP equivalent 2019)[7]	6.4	4.6	ECA
Municipal waste	Waste generation rates (kg per capita per day)[8]	0.4	1.18	ECA
Resource efficiency	GRID uses a measure of resource efficiency that expresses the amount of economic output generated (in terms of GDP) per unit of materials consumed Total materials or non-energy materials, US$/kg, 2019	0.8	2.9	EU-27
Water scarcity and quality	Water quality, nutrients, salts, chemicals (SDG 6.3.2)	−5.9	−2.8	UMIC
	Mortality rate attributable to inadequate water supply, sanitation, and hygiene (per 100,000)[9]	0.4	2.6	UMIC
Land	Land degradation (degraded land as % of total land area)[10]	29.0	20.4	LIC
			21.2	UMIC
Natural hazards and disasters risks	Population exposure from disasters (% of total population exposed)	0.7	1.3	UMIC
	Population exposure from dry shocks (% of total population exposed)	14.4	14.9	LIC
			16.8	UMIC
Energy and carbon intensity	Building, electricity, heat, transport, fugitive (tCO₂e per million dollar GDP)	4,670	258	ECA
	Fugitive emissions (tCO₂e per million dollar GDP)	1,054	42	ECA
	Total energy supply by GDP (purchasing power parity [PPP]) (GJ per thousand 2015 US dollars)[11]	8.0	3.1	EU-27 + UK
	Total energy supply: coal (4%), natural gas (86%), oil (8%), hydro and biofuel/wastes (<2%) [12]			
Electricity	CO_2 emissions in electricity (tCO₂e per million dollar GDP)	1,050	114	ECA

Note: The Resilience, Inclusion, Sustainability and Efficiency approach used here is described in Balseca et al. (2022). ECA = Eastern Europe and Central Asia countries; EU-27 = 27 countries of the European Union (EU); GRID = Green, Resilient, and Inclusive Development; SDG = Sustainable Development Goal; UZB = Uzbekistan.

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[5] World Bank Group 2022.

[6] World Bank, Open Data portal, indicator: PM2.5 pollution, population exposed to levels exceeding WHO Interim Target-2 value (percentage of total).

[7] IHME 2019.

[8] World Bank Group 2018. Uzbekistan data are reported for 2012.

[9] IHME 2019.

[10] UN SDG database. SDG 15.3.1: Proportion of land that is degraded over total land area.

[11] International Energy Agency (IEA) data. Total energy supply excludes electricity and heat trade.

[12] Ibid.

Severe weather events will be increasingly frequent with climate change. Around 61,000 people will be affected each year by river flooding and flash flooding, based on historical data, at an expected GDP impact of US$181 million. Climate change further increases flood risks through a combination of more extreme precipitation events, glacier melt, and slope destabilization through permafrost melt. Drought frequency will also increase.[1] Investments for seismic retrofitting of critical public and private buildings, energy, and transportation systems would be needed. Over 20 percent of the population resides in buildings with high seismic vulnerability. The World Bank Country Climate and Development Report (CCDR) details the climate risk to the critical agriculture sector and overall growth. Adapting to climate change will require adaptation planning and investments.

Climate change and natural disaster risks can propagate from the real to the financial sector. Tourism and real estate projects located in climate change-affected regions are at risk of asset damage and loss of income, and these risks are transmitted to financial investors. Carbon-intensive and polluting industries face stricter regulations and may be forced to close. Financial institutions exposed to these sectors can face additional risks as businesses default on loans (credit risks). Companies that fail to adapt to the changing climate or operate in adversely affected sectors may experience declining market value (financial risks) and physical damage to infrastructure or disruptions in the supply chain (operational risks). Insurance companies may be exposed to carbon-intensive and polluting assets that may be stranded or come under tougher regulations. Investors' risk increases if they own stock in high-emission manufacturers, climate change-vulnerable properties and assets, or reinsurance companies providing protection against climate-related risks.

Figure 1: Physical, Transition, and Liability Risks to Financial Market
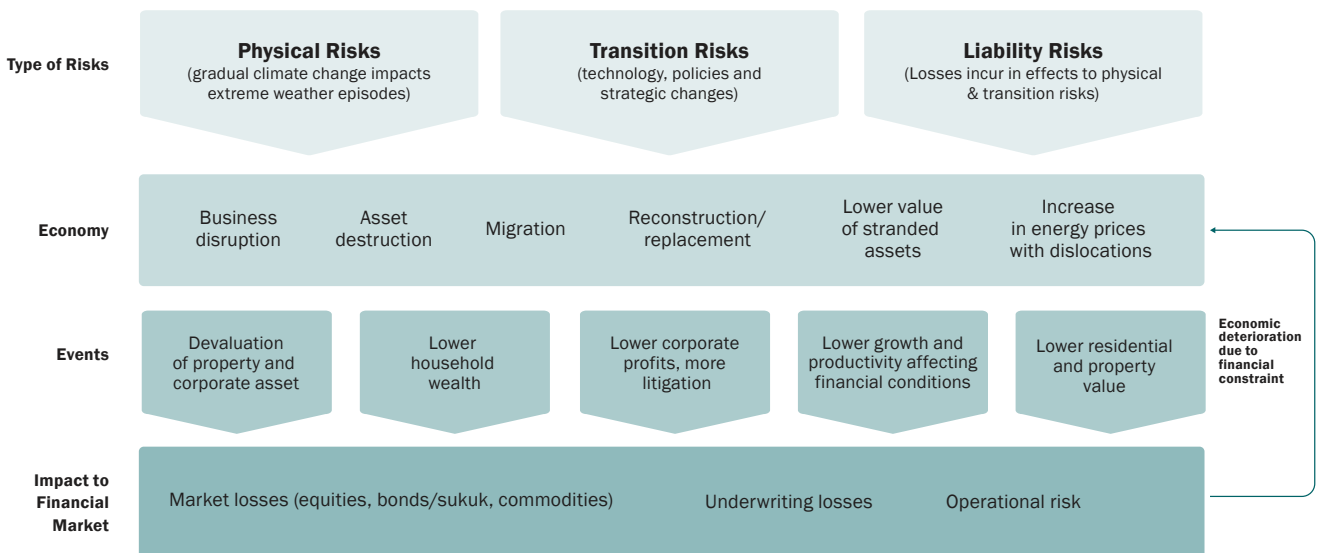
Source: Adapted from NGFS (2020).

Financing the Green Economic Transition

The high cost of transitioning to a green economy cannot be sustainably financed by the public sector. In the World Bank CCDR, the cost of decarbonizing the energy system—not including other environmental spending or resilience investments—is estimated to be US$20 billion annually starting in 2030 and rising to US$106 billion by 2060. The present value of total energy system costs ranges from 7 to 10 percent of GDP, with investment accounting for about half of that and the rest for operation and maintenance. At 34 percent of GDP in 2022, Uzbekistan's public spending is already higher than that of most of its income-level peers. Additional revenue could be raised by cutting back on inefficient spending, including unproductive tax incentives and energy subsidies. While these fiscal reforms have their own merits, analysis from the CCDR concludes that they will not be sufficient for meeting Uzbekistan's green economy ambitions, and the country's fiscal position could quickly become unsustainable if public funding was the only source.

Development assistance alone cannot support this financing. Uzbekistan is eligible for concessional finance, both grants and loans. Official OECD-DAC[13] figures available for 2019 indicate that official development assistance (ODA) rose to its peak of 3 percent of GDP. The bulk of ODA is channeled through multilateral entities (International Development Association [IDA], Asia Development Bank) and bilateral donors (Japan, Republic of Korea, Germany, United States). Of this, less than US$20 million is allocated to expenditures classifiable under what ODA defines as environmental protection, and the scale of ODA is small relative to government spending which is roughly one-third of GDP.

In most countries, the financial system is critically important in funding the transition to a green economy. Financial institutions can help accelerate the flow of funds toward green economic activities and create more transparency through regulatory requirements to disclose green and brown investments and how physical and transition risks related to climate change are managed. The green taxonomy plays a role in these processes by providing clear, transparent, and consistent definition of what qualifies as a green investment or activity. In tandem, other measures will be needed to promote transparency and accountability for green impacts, such as sustainable reporting standards[14] or the development of an independent impact verification industry to assure investors and financiers of positive green impacts and forestall greenwashing.[15] The government is exploring these broader green finance measures in conjunction with experts and the development partner community.

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[13] DAC = Development Assistance Committee; OECD = Organisation for Economic Co-operation and Development.

[14] This global initiative is led by the International Sustainability Standards Board of the IFRS, https://www.ifrs.org/groups/international-sustainability-standards-board/. In the EU, the implementation of sustainability reporting standards is being led by EFRAG, https://www.efrag.org/Activities/2105191406363055/Sustainability-reporting-standards-interim-draft.

[15] Impact reporting of green bonds has become more common, but more work is needed on the institutional framework and industry for impact verification for green loans to make it more robust. In Central Asia, Kazakhstan has launched policy initiatives in this regard.

II. GREEN TAXONOMY TO SUPPORT NATIONAL STRATEGIC GOALS ON SUSTAINABLE DEVELOPMENT

Purpose of This Document

The Government of Uzbekistan has committed to developing a national green taxonomy and began a dialogue with the World Bank. This Guidance Note is for the design of an Uzbekistan green taxonomy that establishes consistency and rigor in the environmental sustainability or 'green' labeling across economic sectors (real and financial sectors as well as private and public sectors). It proposes foundational elements for the taxonomy such as the strategic goals, environmental objectives, and priority sectors; the options available for assessment methodology and rules; and considerations for effective oversight of the taxonomy. It also suggests a roadmap for long-term development of the taxonomy. A *model green taxonomy* is presented to illustrate one possible form that the government may wish to develop. Other green finance measures such as public expenditure tagging and corporate sustainability reporting can enhance the impact of the green taxonomy. These are outside the scope of the Guidance Note, but the complementarity of these measures to the taxonomy in improving information disclosure is briefly discussed. The Guidance Note is aimed at policy makers charged with successfully carrying out the national green economy measures, which the taxonomy will support, and specifically the team overseeing the development of the green taxonomy and the future regulator during the taxonomy's implementation. As one of its immediate uses, the Guidance Note will inform an *official decree* that the government intends to issue on the Uzbekistan national green taxonomy.

Greenwashing has a corrosive effect on the environmental sustainability agenda, and limiting the incidence of greenwashing must be one of the main functions of the taxonomy. A spate of regulatory actions in the EU have drawn attention to the growing problem of greenwashing in the financial markets. Greenwashing is the practice of exploiting absent or unclear definitions and rules to overstate the environmental credentials of businesses and/or investments. In the worst examples, fund managers have been accused of making fraudulent claims. Greenwashing results in a misleading picture of the impact of 'green-labeled' financial flows and undermines confidence that private capital can be reliably harnessed to solve the world's most pressing environmental and climate change challenges. The financial industry has reported[16] that US$35.3 trillion of assets under management in 2020 meet the environmental, social, and governance (ESG) definition (environmental and social sustainability and governance). This astounding figure is 50 percent higher than the stock of green assets reported in 2016 and, if correct, implies that we should be well on our way to tackling global challenges—such as raising an additional US$5 trillion a year to achieve net-zero carbon emissions. In reality, global emissions have risen instead of fallen.

A taxonomy must set a high standard of environmental integrity and come with strong oversight and regular enforcement of its rules. Consistent enforcement is usually more effective than imposing penalties after abuses have occurred. As environmental standards become more demanding, green taxonomy rules should also advance to maintain environmental integrity. But the regulator will need to strike a balance between consistency and evolution. With technology maturing, what is considered green today may not be best-in-class in the future. But that is no argument for retrospectively revoking the green label. The threat of retrospective changes can be most damaging to investor confidence for some industries like renewable energy where investments have a long life span.

Essential Elements for Developing the Taxonomy

Leadership for the Development Process

As indicated by the Ministry of Economy and Finance (MEF), responsibility for the development of an Uzbekistan national green taxonomy has been provisionally assigned to a working group consisting of agencies responsible for economic policy and finance, environmental sustainability, financial regulation, and others. The composition of such a working group is consistent with most institutional setups for other countries

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16 Global Sustainable Investment Alliance 2021.

and is deemed sufficient for the initial development work of the taxonomy. The main players in the development and oversight phases of the taxonomy may be different. The multiagency working group that is crucial for the development phase would usually transition into an advisory role during the operational phase where a single agency holds the regulatory function and is supported by an advisory council. More details on the **institutional framework** for effective governance and typical responsibilities are provided in **Annex 1**. During the piloting phase of the taxonomy, dialogue with other stakeholders is recommended and the number of involved parties will increase. Dialogue will foster a common understanding of the taxonomy between regulators and users and generate input and useful feedback from stakeholders. Parties included should be the local business community, research bodies and technical institutes, consumer groups, and the community of development partners.

Main Players in Development, Oversight, and Support

A green taxonomy typically requires a range of institutions to guide its development and a regulatory body to oversee implementation and enforcement. In general, the oversight functions of the taxonomy during the operational phase can be described as *(a) providing strategic and regulatory direction, (b) supporting execution and the daily management of taxonomy operations, and (c) providing technical advice to the strategic and regulatory aspects*. Illustrative tasks are provided in Annex 1. At its initial development stage, government direction and control are particularly important in setting objectives, principles, and rules as well as mobilizing parties and resources together for the taxonomy development. Although it is important to give industry stakeholders a role in the testing and feedback phase of development to increase the taxonomy's acceptance, it is more important to establish the taxonomy's integrity and independence from industry interests. The government must be in the driving seat of the development process. Objective technical advice to the regulator from independent experts and possibly civil society organizations (CSOs) is also important. Periodic updates to the taxonomy and associated regulations will also require help from independent technical experts and CSOs, with industry insight about market trends.

In the case of Uzbekistan, members of the working group are sufficiently representative of the types of government agencies required for providing strategic direction and regulatory oversight:

a. **Government oversight bodies.** They are responsible for developing and implementing regulatory frameworks, monitoring compliance, and enforcing penalties for noncompliance. Because the taxonomy is conceived mainly as a classification tool to support green/climate policy implementation, with finance being just one aspect, the leading entity in the taxonomy's governance arrangement should be the authority responsible for Uzbekistan's green economy and/or its climate change agenda. These agencies may include economic planners, environmental agencies, financial regulators, and other relevant agencies. Crucial for the success of the green taxonomy development process is an officially designated party to lead and coordinate the cross-government work on the taxonomy, starting from the initial design. Many countries have created green taxonomies to serve the financial markets and have thus appointed the financial regulator in the lead for overseeing the taxonomy. Those examples are less relevant to Uzbekistan. Examples of both kinds are provided in Annex 1. Uzbekistan has begun assembling a working group, led by the MEF. The working group consists of

  - Green Economy Team, MEF;
  - Department of Air Protection, Ministry of Ecology, Environmental Protection, and Climate Change (MEEPCC);
  - Agency for Strategic Reform (ASR);
  - State Budget Department, MEF; and
  - Regulation Department, Central Bank of Uzbekistan (CBU).

b. **The core membership of the working group as listed above is sufficiently representative to begin work on the taxonomy.** This may be expanded to include specific real sectors, such as the Ministry of Energy and the Ministry of Mining, but real sector expertise is more relevant in the technical support functions. The working group in Uzbekistan already includes the CBU and can further incorporate views from the insurance and capital market supervisors through the MEF if needed.

c. **Technical organizations.** Generally, these organization are responsible for developing and maintaining the criteria and guidelines for green taxonomies and may include international or regional standard-setting bodies if national technical organizations are less developed (examples include the EU Technical Experts Group and Kazakhstan Green Finance Center). In Uzbekistan's case, as in any country, green expertise and performance

reporting[17] in each of the sectors will be needed, potentially from energy, agriculture water and land use, transport, industrial and commercial development, urban development, and so on. Periodic reviews and updates to the taxonomy rules should be expected during the implementation phase. The technical team should expect to transition into a permanent technical body providing independent advice and support to the regulator in its oversight function. The government should begin identifying suitable candidates, domestically or regionally, to serve as the technical body. Uzbekistan could consider establishing twinning arrangements with taxonomy oversight bodies in the EU, Association of Southeast Asian Nations (ASEAN), or other peer countries.

d. **Industry associations and selected market practitioners.** As an important group of taxonomy users, they will have interest in providing input and feedback on proposed criteria and guidelines as well as ensuring alignment with industry standards on environmental sustainability.

e. **CSOs, including environmental groups and consumer advocacy groups, may be partners in compliance monitoring or to advocate for stronger regulations where necessary.**

Time frame. The development process will require ample resources and time. The pace of work will largely be set by the working group of government entities at the initial design stage, with further progress in latter stages also being dependent on the multistakeholder engagement between public and private stakeholders. For example, the EU's Technical Experts Group required two years to issue its first report on the EU Sustainable Finance Taxonomy. This was then followed by further technical and government consultation before the first EU taxonomy regulation was issued in 2022. Coordination across several policy branches of government will also add to the time needed. The People's Bank of China began work on a Green Bond-endorsed Project Catalogue as early as 2015. This was subject to several revisions and internal government review before the current version was jointly endorsed in 2021 by the banking regulator, the Securities Regulatory Commission, and the Development and Reform Commission. Recently announced national taxonomies have been able to build on these first movers to economize on the required development time. The ASEAN countries have a simplified 'principles-based' taxonomy developed through a one-year drafting process followed by another year of consultations and which, as a 'living document', will be periodically improved.

Preparing for other complementary actions during taxonomy use. The process of setting and refining criteria and thresholds is a relatively technical exercise. For effective oversight of the taxonomy, expertise in the real sector will be an important complement to economic policy making and financial regulation. An understanding of the technologies in use, their environmental impacts, and the general level of the environmental performance of various activities and sites will be needed. As of now, Uzbekistan has not legislated the use of best available techniques (BAT) in the permitting and approval of economic activities and sites. It is also understood that there are currently no industry-specific limits to quantified environmental effects, such as waste generation, effluent, emissions, or standards for managing social impacts. These standards would normally be used in taxonomies as a basis for performance thresholds for certain project types. A group of technical experts supporting the regulatory authority of the taxonomy will be needed, both for taxonomy development and during taxonomy implementation. One of the priorities for authorities should be to assemble and support such a group of technical experts. Other complementary actions that need to be planned for include the following:

- Develop monitoring and verification capabilities, with regulations for their independence and accreditation.

- Where there are market barriers, take policy measures to support eligible green projects.

- Upgrade existing Environmental Impact Assessments (EIAs) and other environmental permitting requirements to help set a baseline of acceptable environmental performance.

- Promote the adoption of ESG strategies and reporting among businesses and financial institutions as well as ESG and climate risk assessment.

- Require cost-benefit analysis and green impact reporting for any public, private, and public-private partnerships with an explicit 'double bottom line' mandate applying for concessional finance or subsidies.

External verification and certification. In some countries, whether a company has correctly labeled its projects/ activities is confirmed as part of the overall verification of its sustainability reporting (which is required in the EU) or as part of verifying its green bond issuances. External verification and certification can be an aid to enforcement

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[17] Such as teams under MEEPCC responsible for biennial GHG reporting for the United Nations Framework Convention on Climate Change (UNFCCC) reporting.

and policy review and can lend additional credibility to the taxonomy. The government may wish to actively support the growth of a credible industry of independent verification and certification to mitigate the risk of greenwashing. In some countries, certification firms are subject to accreditation and are relied upon for consistent and rigorous application of the taxonomy. But this does not equate to regulatory oversight, which should ideally include the ability of the regulator to audit taxonomy users as well as the verification industry. Independent verification of environmental outcomes from green activities could also be useful for reviewing the success of the taxonomy as a policy tool of the green economy strategy and should include both public and private sector activities. External verification and certification would be sought out by companies in any case if they seek to raise financing for their taxonomy-compliant operations in the capital market, where this could be a requirement. External verification also plays a quality assurance role for the taxonomy's digital platform, since regulators, investors, and other stakeholders will need accurate data to assess the green credentials of enterprises and projects.

A Green Taxonomy for Multiple Users

Green economy policyholders. A green taxonomy is a framework for categorizing and labeling economic activities according to their environmental sustainability. It is a policy tool just like regulations and incentives, but it can also inform green policies. Green policies create the conditions for more activities to become green. For instance, a regulation requiring polluting industries to meet higher environmental standards will increase demand for efficient and low-waste technology options, greening more activities in any given sector. Conversely a green taxonomy identifies and organizes economic activities according to their potential contribution to environmental goals, revealing areas where policies measures can be concentrated to accelerate the green transition. There is hence a natural relationship between a green taxonomy and green policies. The MEF in Uzbekistan has been clear that the taxonomy will aid public policy by identifying opportunities and residual policy gaps of the green economy strategy (and other environmental objectives), facilitating progress reporting on the green economy strategy and measures, and informing budget priorities on green investments. The MEF also intends to explore using it to guide the investment strategy of a new Green Fund and other relevant (existing or future) government financial and nonfinancial support programs.

Financial sector. A green taxonomy is often used by countries as one of the bases for green finance (which could include green bond and equity issuance; bank funding, lending, and investment; and insurance provision and investments). Private finance will play an important role in financing green actions as budgetary allocations for public spending on green activities are limited. In this case, public finance must be rationed toward crowding in green private finance. Currently, only 11 percent of state budget expenditures directly contribute toward the implementation of SDGs linked to the green economy, and just 5 percent of tax revenues have environmental relevance.[18] International development partners do support projects focused on low-carbon development, climate resilience, or disaster risk reduction, but the cumulative budget of development assistance to these projects to date is just about US$1 billion.[19] Therefore, both green public finance and development assistance flows are small, and except for some public-private partnerships, they have limited catalytic effect in mobilizing additional private finance. Hence, private finance is the main prospect for financing the green transition. Data reveal that the bulk of private investment has come from enterprises' retained earnings. There is also an active domestic banking market led by state-owned financial institutions. This then allows the state with its green policy to play a stewardship role in the transition to green lending practices.

To support cross-border finance, it is desirable that as many national taxonomies as possible align their rules with a widely recognized international best practices. This should be done without detracting from serving national priorities and setting appropriately aspirational environmental standards for the country. The EU Sustainable Finance Taxonomy is the default green taxonomy used by its EU member states and is considered an international best practice, along with others like the Climate Bond Initiative Taxonomy. These have been used as the basis for green bond issuance guidelines and other financial products. Where appropriate, the Guidance Note refers to the EU Sustainable Finance Taxonomy in its recommendations so that the eventual Uzbekistan national green taxonomy is consistent with international best practices. This should help the country tap into cross-border capital flows.

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[18] World Bank Group 2022.

[19] MoEDPR, World Bank, and Regional Environmental Centre for Central Asia 2022.

Figure 2: Understanding the Basic Economic Unit as 'Projects'

'Activity' as the basic economic unit is similar to the notion of a 'project'.

The sectoral classification is the standard organizational format for financial market information and for public sector plans, including for the Green Economy framework.

But within a sector, technologies and practices can vary widely. So most green taxonomies have defined a lower-level denomination, called 'Activities'.

A sector consists of many enterprises or public sector entities, each with numerous Activities. Activities can be investments into new or old facilities. Not all Activities in the same enterprise have the same environmental performance.

Green taxonomies are not designed to apply to an enterprise but only to its Activities. Other standards (not taxonomies) are needed to assess whether an enterprise as a whole is green.

Sector
e.g. Electricity Generation
Sector is a useful classification but is too broad for applying climate or environmental criteria and thresholds.

Entity or Enterprise
e.g. ABC utility company
Entities within each sector are each very different based on the activities they operate

Activity 1
e.g. constructing a new solar power generation

Activity 2
e.g. operating an existing coal-based heat and power generator

Activity 3
(brownfield) e.g. investing into pollution control at existing facilities

Each entity within a sector could be responsible for a number of different activities. These activities are distinct enough in their technology and environmental performance and impact that precise criteria can be applied.

Private sector. A taxonomy that can easily be understood by mainstream society can have even greater impact and reach as it reveals information about businesses and potentially influence consumer choices. The taxonomy is a building block in a system where entrepreneurs can demonstrate their contribution to national policy and social values and consumers through their preferences. The private sector in Uzbekistan is dominated by state-owned enterprises (SOEs) and private-public partnerships.

Risk managers. The taxonomy helps identify new green investment opportunities not previously considered. It also points to segments of the current economic structure (or company/investment portfolio, depending on the type of user) where efforts to improve its environmental performance has been lacking and might pose a risk to the economy/investment portfolio. One example is the presence of high fossil-fuel assets (such as coal power plants) when viable and low-emission technologies are available. These activities are a risk due to the increasing scrutiny of these technological choices by global climate policy and domestic regulations. The taxonomy generates useful market data and can act as a catalyst for the private sector to invest in innovation and new product development. The risk can be mitigated by taking efforts to transition away from these activities. Financial entities like funds can use the taxonomy to identify green and non-green activities in their overall portfolio. This can be used to develop rebalancing or divestment strategies for risk management.

Reporting. Finally, a green taxonomy can serve as a framework for economic, enterprise, and financial data, facilitating standardized reporting. It offers a framework for classifying green activities, making it simpler to compare and evaluate financial data from various organizations and sectors. A well-structured green taxonomy can support searchable databases and support effective data management and use. By offering a uniform method of classifying data, a green taxonomy can be used to facilitate standardized reporting that allows comparisons of performance, at the entity, sector, and even country levels.

A Strategy for Voluntary and Mandatory Use

The following recommendations on how the taxonomy should be applied seek to maximize the impact of the taxonomy across the different users:

- **Public entities.** With the green economy strategy going into implementation this year, all ministries could be required to begin applying the taxonomy to their sector work plans starting next year, with a focus on capital investment projects. This will generate information on all new public investments under each ministry that support the green economy strategy (there could be avenues for applying the taxonomy to the existing stock

of government assets, as explained below). This information could be used to inform budget deliberations and the overall review and evaluation of the green economy actions in the coming years. The green taxonomy complements an ongoing climate budget tagging pilot (led by development partners United Nations Development Programme [UNDP] and *Agence Française de Développement* [AFD]) to produce data on both environmental and climate expenditures (particularly capital spending).

- **Targets of green initiatives, including enterprises:**

  - In general, the taxonomy could be mandated for projects accessing government financial support, including from the Uzbekistan Reconstruction and Development Fund, and other state investment funds. Through this rule, private entities will also begin to apply this taxonomy. A new state-backed green fund to be established under the green economy measures will be open to both public and private entities.

  - Public entities should include state-owned commercial enterprises that are operationally managed or have a reporting obligation to the state, as they hold a large share of government assets. Application of the taxonomy is especially recommended for business plans of enterprises like the energy company Uzbekenergo, the National Mining and Metallurgical Company, and the National Oil and Gas holding company where ESG principles are expected to be introduced.[20]

  - Other green policies under preparation will extend the government's regulatory purview to more economic activities. The oversight could include the reporting of activities according to the green taxonomy. Imminent green policies include regulations to set up a monitoring, reporting, and verification (MRV) system for specific installations[21] and revisions to the environmental assessment process.[22]

Financial sector entities. As mentioned earlier, the state can always set a condition that requires recipients of green incentives, grants, and other financial support to report their activities according to the national green taxonomy. This can include financial institutions such as state-owned or private banks. The practical situation in most countries is that the use of a national or international green taxonomy by financial sector participants is usually voluntary.[23] Moreover, the existence of other regulations requiring financial entities to disclose nonfinancial information creates the need for standard green definitions of activities and projects. This includes the EU, where the EU Sustainable Finance Taxonomy becomes the standard for nonfinancial reporting by asset managers and funds of a certain size due to an EU regulatory requirement to disclose the environmental relevance of their investments. In exercising its stewardship role, the Government of Uzbekistan can act through its shareholder rights in state-owned banks. The recommendation is to mandate all state-owned banks to use the taxonomy to disclose their holdings, which will set an example for privately owned banks to do the same voluntarily. The disclosure and reporting requirements for the financial sector in Uzbekistan need to mature further before considering the mandatory use of the national green taxonomy.

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[20] Presidential Decree No. PP-83 of March 2023 'Measures for accelerating the process of reforming state companies'.

[21] A regulation is being considered to require all sites consuming more than 1,000 tons of fuel a year to conform to GHG reporting and verification protocols, to support carbon regulations and carbon credit transactions.

[22] New facilities with moderate to significant environmental impacts that are seeking environmental permits may in the future be subject to a more robust environmental assessment process and be required to install pollution control equipment or use specific clean technologies to meet emission and effluent standards.

[23] Examples of middle-income countries include Colombia, which requires its national green taxonomy to be applied only if financial products profess to support environmental objectives. In South Africa's case, its pilot green taxonomy is voluntary, and parties in a green financing transaction agree among themselves on how much alignment is needed. China's green taxonomy is mandatory for all onshore bond issuances that wish to be labeled 'green'.

III. STRATEGIC GOAL

Core Strategic Framework

The taxonomy's strategic framework sets in motion many downstream implications, and the right set of strategic goals must be selected with care. The strategic goals of the green taxonomy should also be consistent with the country's broader national development agenda. In Uzbekistan, the relationship between economic development and green and climate-resilient growth is established by the current National Development Strategy (2022–2026), where at least two of the seven priority areas relate to environmental sustainability. Those are to develop a "robust national economy to ensure rapid growth" and to "approach global challenges through the lens of national interests." Strategic goals that are achieved through sector actions (for example, climate change mitigation through energy sector decarbonization) are by definition highly compatible for a taxonomy. It is also possible to transcribe cross-cutting goals into the taxonomy's strategic goals.

Uzbekistan's Green Economy Strategy and Measures[24] represent the most recent and advanced legislation on environmental sustainability. It is a sound choice as the taxonomy's strategic framework. The Green Economy Strategy (2019) and the subsequent Green Economy Measures (2022) are jointly referred to in this Guidance Note as the green economy framework. It provides six strategic priority areas touching on economic sectors and three cross-cutting themes. The green economy framework is conceptually summarized in Table 2 and Table 3:

Table 2: Green Economy Framework

		Priority Areas under Measures for Green Transition (PP#436, 2022) *'Green Growth Program'*
Green Economy Strategy (PP#4477, 2019) Increase efficiency in energy and water Increase participation of population and local communities Creating an enabling environment for the green economic transition	I	Sustainable and efficient use of natural resources (land and water)
	II	Strengthening resilience to natural disasters and climate change
	III	Green and low-carbon development of industry and the economy
	IV	Innovation and effective green investment
	V	Sustainable and inclusive urbanization
	VI	Support for people and places most impacted by the transition
	Cross-cutting themes	Capacity building and human capital development in 'green growth'
		Enabling favorable policy environment and effective institutions for transition to green economy
		Increasing external and internal flows of green finance

Table 3: Green Economy Target Indicators

No	Indicators	Base Year 2022	2030
1	Reduction of energy intensity per unit of gross domestic product (compared to 2021) (%)	5.0	30.0
2	Share of energy consumption by industry (%)	26.0	20.0
3	Expanding the share of renewable energy sources in total electricity generation (with hydropower) (%, kWhr)	8.0 6.5	30.5 40.7
4	Construction of small capacity solar photovoltaic power plants (MW)	10.0	1,500.0
5	Share of population with access to improved sources of drinking water (%)	69.7	90.0
6	Increase in trees and shrubs reserves on lands under the forest fund (million m³)	64.2	92.3
7	Expansion of urban green areas as part of the Green Land project (in relation to the total area of the settlement) (%)	8.3	30.0
8	Rate of solid waste recycling (%)	30.0	65.0

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[24] 'Strategy for the Transition to a Green Economy (2019–2030)' (PP-4477, 2019) and the 'On Measures to Improve the Effectiveness of Reforms Aimed at the Transition to a Green Economy' (PP-436, 2022).

Although there is currently no approved climate change legislation, the government's NDC is reflected in the green economy framework. The government began drafting a national climate change strategy in 2021 and the work is still ongoing. Meanwhile the NDC update of October 2021 articulated Uzbekistan's climate change objectives up to 2030, with mitigation and adaptation targets of the NDC incorporated into the Green Economy Strategy. A supporting National Adaptation Plan is also under preparation.

Additional Strategic References

The green economy framework has a wide coverage of environmental issues and is the recommended strategic framework for the Uzbekistan green taxonomy. But for specific environmental issues, the taxonomy should refer to other environmental strategies which provide better definition on strategic goals. Further analysis was conducted to determine if the green economy framework sufficiently covers all the environmental sustainability priorities of the government. Box 1 shows a list of other relevant national strategies related to environmental sustainability and their brief description. These environmental legislations are still in force and cover environmental protection, renewable energy, waste management, and bio-conservation. These, along with the green economy framework, are mapped out in Table 4 according to the environmental issues that they address.

Box 1: Summary of Other Relevant National Strategies

Environmental Protection

Environmental Protection Concept by 2030 (Annex No. 1 to Presidential Decree No. UP-5863 of October 30, 2019). The concept encompasses a range of measures aimed at preserving the environment from anthropogenic impact and other negative factors, expanding protected areas, and improving waste management, among others. The 24 targets to be met by 2030 are as follows:

- Increase in the area of forest plantations, rehabilitation, and recultivation of degraded lands.
- Sustainable use of water resources.
- Reduction in air emissions.
- Protection and reproduction of biological resources.
- Improvement in the waste management system.

Renewable Energy

Measures to Accelerate the Introduction of Renewable Energy Sources and Energy-Saving Technologies in 2023 (Presidential Decree No. 57 of February 16, 2023). It concerns the commissioning up to 4,300 MW of renewable energy capacity, avoiding the consumption of 4.8 billion m^3 of natural gas, and switching consumers to alternative energy, and to introduce energy saving technologies.

Waste Management

Solid Waste Management Strategy for 2019–2028 (Annex No. 1. to Presidential Decree No. PP-4291 of April 17, 2019). The strategy aims to create an effective system for the collection, transportation, disposal, recycling, and burial of solid household waste as well as prevent their harmful impact on public health and the environment, rational use of natural resources, and improvement of sanitary and environmental conditions in regions. Target indicators include the following:

- Ensuring 100% coverage of the population with solid waste collection and transportation services.
- Achieving the recycling of at least 60% of solid household waste generated.
- Increasing hazardous solid household waste recycling rate (mercury-containing waste, tires, batteries, used oils, packaging waste, and so on) up to 25%.
- Reducing the volume of solid household waste sent to landfills by 60%.
- Bringing the condition of all landfills in compliance with established requirements and fully rehabilitating the land of eliminated landfills.
- Using alternative energy sources at solid waste management facilities up to 35%.
- Ensuring monitoring of landfill conditions (control of the state of underground (ground) water and atmospheric air) up to 100%.

Biodiversity

Biodiversity Conservation Strategy for 2019–2028 (Annex No.1 to the Decree of the Cabinet of Ministers No. 484 of June 11, 2019). Specific plans for bio-conservation not made explicit in the Concept for Environmental Protection are listed in this strategy. Goals include:

- Specific afforestation objectives at the dried seabed of the Aral Sea,
- Increase in the numbers of at-risk gazelles,
- Monitoring of biodiversity components in ecosystem data, and
- Integration of biodiversity conservation issues into all sectors of the economy.

The mapping in Table 4 shows that the green economy framework fully covers the issues of climate change mitigation and adaptation and partly covers concerns about pollution to air, water, and land resources. For more strategic guidance on air, water, and land resources issues, the taxonomy should refer to the objectives and sector indicators for strategies on *environmental protection, renewable energy, and solid waste* (see Box 1). The green economy framework covers forestry through specific targets for reforestation. But to fully cover sectors and activities that benefit biodiversity, the taxonomy should also refer to sector actions in the biodiversity legislation. The issue of social equity and justice is not fully covered in the additional legislations analyzed. Some countries, such as Georgia, have developed an integrated environmental and social taxonomy. On the other hand, the EU has opted to develop a Social Taxonomy as a distinct tool from its EU Sustainable Finance Taxonomy (green taxonomy). For Uzbekistan to incorporate social policy objectives into its taxonomy, national strategies on social progress and the country's action plan for SDG 5 and 10 (Gender Equality and Reduced Inequality) will have to be included as guiding documents to the taxonomy. This Guidance Note recommends developing the first version of the taxonomy by focusing on environmental objectives. Social progress objectives can be supported either through a separate Social Taxonomy or as part of future improvements to the green taxonomy. One reason is that the first version of the green taxonomy needs to establish credibility, and including non-environmental objectives at this critical early stage carries some risk. An overly broad taxonomy may invite different interpretation of its strategic focus and may even encourage greenwashing.

Table 4: Environmental Issues Addressed by Major Strategies (Legislation)

National Strategy	Issues Addressed						
	Climate change adaptation	Climate change mitigation, energy use, and transition	Air pollution	Waste, land contamination	Water resources and quality, land quality, forestry	Biodiversity, ecosystems	Social equity and justice
Green economy	Y	Y	Partly	Partly	Partly	Partly	Partly
Environmental Protection		Y	Y	Y	Y	Partly	
Renewable energy		Y	Partly				
Solid waste				Y	Partly		
Biodiversity						Y	

IV. SETTING ENVIRONMENTAL OBJECTIVES

Environmental Objectives That Align with Global Practice

It is recommended that the Uzbekistan taxonomy formulates environmental objectives along the lines of the widely used EU Sustainable Finance Taxonomy. Environmental objectives flow from the taxonomy's strategic framework, and it is proposed that the objectives closely mirror those of a widely used template. Many national governments and organizations throughout the world align their taxonomy with the EU Sustainable Finance Taxonomy, which is a universally recognized benchmark for sustainable financing.

Uzbekistan can gain from global comparability and potentially attract cross-border funding and investment by mirroring aspects of the EU while focusing on its national priorities. The **six environmental objectives** are proposed as follows:

a. **Climate change mitigation.** To avoid or reduce GHG emissions or enable others to avoid or reduce GHG emissions.

b. **Climate change adaptation.** To implement measures that increase an entity or a community's resilience to climate change and allow other stakeholders to increase their resilience to climate change.

c. **Sustainable and protection of water and marine resources.** To achieve sustainable management and protection of water resources while minimizing environmental impact.

d. **Transition to circular economy.** To reduce waste and increase resource efficiency, for instance, waste management and recycling, the creation of circular economic models, or the creation of bio-based materials.

e. **Pollution prevention and control.** To addresses factors that harm the environment and human health, for instance, waste management and disposal, reducing air pollution, or land remediation (cleaning up polluted soil).

f. **Protection and restoration of biodiversity and ecosystem.** To restore ecosystems and natural habitats, preserve biodiversity and support environmentally sound forestry practices.

Table 5 shows that the six environmental objectives of the EU Sustainable Finance Taxonomy indeed correspond closely with Uzbekistan's green economy framework and are suited as the taxonomy's objectives.

Table 5: Links between EU Sustainable Finance Taxonomy and Uzbekistan's Green Economy Framework

Proposed Environmental Objectives (EO) (taken from the EU Sustainable Finance Taxonomy)
EO 1: Climate change mitigation
EO 2: Climate change adaptation
EO 3: Sustainable and protection of water and marine resources
EO 4: Transition to a circular economy
EO 5: Pollution prevention and control
EO 6: Protection and restoration of biodiversity and ecosystems

Correspondence between Environmental Objectives and Uzbekistan's Green Economy Framework	
UZB Green Growth Strategy	**EU Taxonomy Links**
I. Sustainable and efficient use of natural resources (land and water)	EOs 3, 5, and 6
II. Strengthening resilience to natural disasters and climate change	EOs 1, 2, and 6
III. Green and low-carbon development of industry and the economy	EOs 1 and 4
IV. Innovation and effective green investment	EOs 1–6
V. Sustainable and inclusive urbanization	EOs 1–6
VI. Support for people and places most impacted by the transaction	Through the taxonomy's technical screening criteria

Three Taxonomy Principles

With environmental objectives decided, additional principles are needed to assess how well a particular economic activity contributes to these objectives. The quality of these principles is important for setting the right standard for classifying an activity as environmentally sustainable or 'green'. The EU Sustainable Finance Taxonomy has undergone a multiyear process of development and improvements since 2019 and is now considered an international standard. At the same time, other countries have been improving on these principles through a process of application and accounting for market developments. Therefore, the proposed taxonomy principles for Uzbekistan are based on the underlying EU principles and incorporates modifications to improve on the principles of substantial contribution and do no significant harm (the latter is discussed in more detail under the 'Rules of Assessment' section). A principle on social safeguards is also proposed, which is not part of the core EU principles. The three main principles are as follows:

- Make a substantial contribution to environmental objectives.
- Do no significant harm to other environmental objectives.
- Comply with minimum social safeguards.

Substantial Contribution to Environmental Objectives

This principle ensures that there is material and positive contribution to at least one of the six environmental objectives. The concept of 'contribution' should be understood more broadly than contribution through the direct environmental outcome of an activity. Enabling activities such as investments into digital technology and research and development do not necessarily reduce emissions and waste or protect natural resources, but they are important facilitators of green technology. This broader interpretation of material and positive contribution is proposed for Uzbekistan unlike the EU approach which focuses only on direct environmental outcomes of the activity. It has been noted that research and development, including for e-mobility, are among the priorities of the green economy framework.

Do No Significant Harm

'Do no significant harm' means an activity should not do significant harm to another environmental objective of the taxonomy. For example, crops for biofuels[25] may provide a lower GHG emitting option to fossil fuels and may be found to substantially contribute to the climate change mitigation objective. However, it may do significant harm to biodiversity, another environmental objective, if it results in the clearing of natural habitats such as wetlands, grasslands, or forests and affecting of ecosystems. Two aspects of this principle deserve further elaboration:

- **Green taxonomies have developed rapidly in the last decade.** Uzbekistan has the opportunity to incorporate the most relevant good practices into its national taxonomy. In recent years, the thinking has evolved on the topic of 'transitions', where certain activities face a more difficult pathway to green transition compared to other activities because significant economic and technological barriers need to be overcome. A common example is the objective of reducing carbon emissions from certain energy-intensive industrial processes where alternate technologies are not yet viable. Conditional recognition can be given to activities that make attempts to transition.[26] For this modification of the standard EU principle, no change is needed to the statement of the 'do no significant harm' principle. Additions need to be made to the assessment rules for this principle beyond the standard EU approach. This is explained in the next section on 'Rules of Assessment'.

- **While it is implicit that an activity needs to comply with national laws and regulations, there is an option available to explicitly state the need for legal compliance with the country's laws on environmental protection[27] to address any shortcomings in the environmental law as it continues to evolve.** While current regulations require environmental assessments[28] according to categories of likely impact, there are yet to be clear standards for pollution control—such as limit values for emissions and waste or the use of BAT. The current

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[25] Kazakhstan began producing biodiesel from wheat in 2007.

[26] Remedial Measures to Transition (5.4.4), ASEAN Taxonomy for Sustainable Finance V2.

[27] The two main laws are the Law on Nature Protection (2017) and Law on Environmental Control (2013).

[28] The relevant subsidiary legislation is the Regulation on State Ecological Expertise No. 949 (2018).

regulations contain broadly stated requirements to consult and disclose information to potentially affected parties, but, currently, disclosure is voluntary and public consultation occurs after project approval. Also, the law does not address a project's responsibility for acting on input. These gaps are being addressed by further regulatory improvements which will require time. An explicit statement on compliance with environmental protection laws emphasizes the intent of these laws to limit environmental and social harm in the absence of consistent standards for mitigating harm.

Applying Social Safeguards

This principle is intended to safeguard employees and communities from social impacts and violations of rights. Social safeguards may not be explicit in Uzbekistan law or codified as part of the operational permitting of enterprises. Because not all the requirements stated here may be part of Uzbekistan law, the principle of complying with minimum social safeguards can be treated as an option that the government may consider as an aspiration. In practice, this requires activities to be assessed against international conventions on labor and human rights (for example, fundamental Principles and Rights at Work of the International Labour Organization [ILO] and its eight fundamental conventions as well as International Bill of Human Rights). It can also include the OECD Guidelines on Multinational Enterprises and the UN Guiding Principles on Business and Human Rights.[29] Excluding prohibited activities is another way of reducing social impacts. Annex 4 provides examples of activities that can be explicitly excluded from the taxonomy, based on exclusions of the International Finance Corporation (IFC) (a member of the World Bank Group) and the Uzbekistan SDG Bond issued in 2021. Although social safeguards will ensure that activities mitigate many social harms, it must be noted that the taxonomy is unlikely to be a sufficient response to some major social impacts from the green economy. A prime example is the impact on coal and petroleum industry workers from a phasedown of fossil fuels. This will require specifically designed and multifaceted 'just transition' measures[30] such as retraining and redeployment programs, local fiscal transfers and investment prioritization for specific provinces, and a compensatory fund. The taxonomy can be part of the solution but is not the main one.

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[29] EU Taxonomy for Sustainable Finance.

[30] World Bank 2021.

V. METHODOLOGICAL CHOICES

Principles-Based versus Activity-Based Approaches

This section explains the difference between a principles-based taxonomy and an activity-based taxonomy and recommends a suitable model for Uzbekistan. An activity-based taxonomy is the more common form of green taxonomy and places more emphasis on the environmental outcomes of a specific economic activity. It is assessed by quantitative or other kinds of criteria. In form, it presents a list of eligible economic activities and is consistent with the general meaning of taxonomy. A principles-based taxonomy, on the other hand, is essentially a set of rules for assessing any economic activity and relies on case studies to illustrate eligibility rather than specific assessment rules. A principles-based taxonomy does not identify a list of qualified sectors or activities, although a list can eventually emerge from the 'case history' of the taxonomy as it is used. Essentially, an activity-based taxonomy can be thought of as a further evolution of a principles-based taxonomy, with both types of taxonomies relying on a strong set of principles and rules.

The choice between the two approaches essentially comes down to resource constraints, that is, the availability of data and expertise, and the balance between regulator and user preferences. Both the activity-based and the principles-based approaches rely on a strong set of principles and rules, with the main difference being that an activity-based model can directly target specific activities compared to the more open-ended principles-based approach. The method of assessment for some activity-based taxonomies sometimes requires setting quantitative criteria, such as technical performance standards of equipment or emission volumes or discharge quality. This would rely on knowing about the environmental performance that different activities can currently achieve, the prevailing environmental standards in the country, and deep sector and environmental expertise. An activity-based taxonomy may require more time to develop, compared to the principles-based taxonomy. Both are equally fitting as frameworks for determining environmental sustainability. Table 6 presents a review of the strengths and weaknesses of the two approaches.

Table 6: Strengths and Weaknesses of Principle-Based and Activity-Based Taxonomy

Approach	Principle Based	Activity Based
Description	A set of **overarching principles** and criteria that economic activities must meet to be considered environmentally sustainable Principles are **flexible and adaptable** to different contexts **Focused on the environmental sustainability intent** of the activity rather than its impacts	**List of economic activities** categorized by industrial classification codes and focuses on **environmental outcomes** of activities rather than the activities themselves
Advantages	Flexible and adaptable Holistic view of environmental sustainability that allows more activities to be identified Promotes inclusive participation	Suited for the use of metrics and collection of quantitative data on environmental outcomes (although it can also work without quantitative thresholds)
Disadvantages	Potential for inconsistent interpretation of rules[31] 'Box-ticking' approach	Requires more data and means of measurement

The recommendation for Uzbekistan is to adopt an <u>activity-based approach</u> <u>beginning with a few priority sectors</u> before gradually expanding to cover the whole economy. The main reasons are as follows:

- **The Uzbekistan green taxonomy should take advantage of the strong indications given in the green economy framework regarding the country's priority sectors.** This guides the development process to efficiently channel effort toward those sectors. In the few countries where principles-based taxonomies are used, the environmental objectives have been broadly defined and no priority sectors stand out (Malaysia).

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[31] The ASEAN regional taxonomy address the risk of inconsistent interpretation by providing case studies. To encourage even more convergence in interpretation, a digitized platform could be used to store and disclose projects that were correctly screened.

In the case of the ASEAN regional taxonomy, member countries have sufficiently different environmental objectives and levels of green technology adoption that converging on an activity list was considered difficult. Uzbekistan is in neither of these situations.

▪ **Concerns about available data and resources can be mitigated by beginning the development process with a narrow set of sectors as priorities and gradually expanding over time to classify the entire economy.** Furthermore, nonquantitative assessment methods are available and have been used[32] for activity-based taxonomies instead of quantitative assessments.

▪ **Because of the prevalence of activity-based taxonomies, this could also be the preferred choice for many users.**

International Practices in Sector Prioritization

Sector Coverage

A taxonomy using sector and subsector classifications helps users, especially businesses which may focus only on one or two sectors. The organization of a taxonomy according to sectors makes it clear where specific economic activities may be found in the taxonomy. Further definition at the level of subsectors and project types would naturally entail more resources for development. Standard industrial classification codes can be used during the development process and to organize the taxonomy itself. The use of standard industrial classification codes to drill down from industry to specific technologies and activity types is discussed in Annex 2.

Definition in the taxonomy conveys a sense of prioritization to users, but it also carries the risk that taxonomy users fail to put forward new opportunities that are not contemplated by taxonomy designers. For reference, taxonomies with varying degrees of sector emphasis and their characteristics are as follows:

a. **No sector coverage.** It is typically seen only in principles-based taxonomies where the taxonomy is a living document that is expected to evolve over time. In the absence of any guidance on sector coverage, case examples based on national environmental objectives are used to illustrate the application of the taxonomy.

b. **Priority sector coverage.** Here the use of resources (data and expertise) is optimized against the time available for a taxonomy to be operational. A country using this approach identifies only a few priority sectors, based on a careful assessment of the economic importance and relative contribution to environmental objectives and considering user demand and ease of use.

c. **All sector coverage.** Countries with more resources and greater sophistication in terms of user interest and diversified economies and market reach have developed extensive taxonomies. In this all-sector approach, eligible activities are assessed and classified using a well-developed system of industrial classification codes to cover the entire economy. The EU Sustainable Finance Taxonomy is an example of all-sector coverage.

Table 7: Taxonomies with Different Degrees of Sector and Project Definition

	No Sector	Priority Sectors	All Sectors
Description	No specification of sectors in the taxonomy	Specifies the priority sectors related to the country or region of the taxonomy	Specifies all sectors in the country
Details provided	Provide examples of selected sectors by referring to industrial code/NDC sectors/ sectoral policies	▪ Priority sectors and the main economic activities under sectors are provided. ▪ Sectors can be specified according to the country's industrial code and their current contribution to environmental objectives, for example, GHG emissions.	By using industrial classification codes, the taxonomy details each sector in the country.

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[32] The ASEAN Taxonomy for Sustainable Finance v2 provides guiding questions, decision trees, and use cases that address all environmental objectives and essential criteria and allows any ASEAN member states to apply the framework to immediately commence its sustainability journey in a consistent and structured manner.

	No Sector	Priority Sectors	All Sectors
Country examples	Bank Negara Malaysia Climate Change Principle-Based Taxonomy	▪ EU Taxonomy Regulation ▪ Kazakhstan Green Taxonomy ▪ ASEAN Plus Standard ▪ Russian Green Taxonomy	▪ ASEAN Taxonomy Foundation Framework (FF) for Sustainable Finance ▪ Indonesia Green Taxonomy
Approach	Malaysia: Principles based (with qualitative assessment)	▪ EU/Kazakh/Russian: Activity based with technical screening criteria (activity metrics and threshold) ▪ ASEAN Plus Standard: Moving toward technical screening criteria (activity metric and threshold)	▪ ASEAN (FF): Principles based (qualitative assessment) ▪ Indonesia: Principles based (qualitative assessment)
Use of industrial code (for sector coverage)	—	▪ EU (NACE): Yes ▪ Kazakhstan (GCEA2): Yes ▪ Russian: Yes (per EU) ▪ ASEAN Plus Standard: Yes	▪ Indonesia: Yes
How transition strategies are treated (climate change mitigation)	The absence of a list of eligible economic activities poses a challenge in reorienting finance to support transition strategies	▪ EU/Kazakh/Russian: Clear definition of environmental sustainability for the sectors selected, but sectors that are transitioning were excluded	▪ Indonesia: The use of the Indonesian standard industrial classification code, known as the KBLI, allows all economic activities to be visible, but the taxonomy offers limited guidance[33] and parameters for transition strategies of economic activities

Note: GCEA = General Classifier of Economic Activities; NACE = Nomenclature of Economic Activities.

Identifying Uzbekistan's Priority Sectors for an Activity-Based Taxonomy

The Uzbekistan green taxonomy should begin as an activity-based taxonomy for a few priority sectors. The choice of priority sectors should clearly be informed by the strategic directions and targets given in Uzbekistan's green economy framework. For instance, the environmental goal of managing climate change by reducing greenhouse emissions points to activities like low-carbon transportation, energy efficiency, and renewable energy. Energy provision and transportation are priority sectors. There can be further expansion while developing the taxonomy. **The taxonomy can be a dynamic document and developed in phases**, with routine reviews to reflect scientific, economic, and technological advancements.

To decide how many more sectors to include or which ones to prioritize, a sector's potential contribution to environmental objectives could be a guiding factor. For instance, from the perspective of reducing GHGs, national GHG data (for example, from the Biennial Update Report to UNFCCC) would reveal the most important sectors. Regularly updated data would be important for subsequent revisions and alignments of the taxonomy as the sector distribution of emissions changes. Such data are useful for informing green policy review and calibration more generally. The MRV protocol would require GHG emissions to be reported and verified regularly to update the national GHG inventory database. A policy decision can be made as to the level of granularity of the desired data, which could range from individual emitting sites, holding companies, or at the sector level. By the same token, national databases for pollution discharged, waste generated and managed, energy use, land use patterns, forest cover, and other environmental/social indicators play a role in taxonomy development and upkeep. While Uzbekistan already maintains energy databases and some pollution registers, **an MRV system for GHGs is a valuable addition and is therefore highly recommended.**

The complete list of sectors relevant to the six environmental objectives is shown in Table 8, with priority sectors marked with (*). Priority sectors were identified based on the green economy framework and analysis of the economy of Uzbekistan. Other relevant sectors targeted for eventual development and inclusion into the taxonomy are also listed.

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[33] The use of industrial classification codes and hard performance criteria may hold back the country's 'transition strategy' of allowing certain 'non-green' technologies for a time-bound transitional period. One solution might be to create a separate 'brown' taxonomy.

Table 8: List of Sectors Relevant to the Six Environmental Objectives

Priority Actions I, III, IV, V, Including Climate Change Mitigation	Priority Actions II, VI, Including Climate Change Adaptation and Resilience
Energy (*) ▪ Power generation, including thermal and nuclear power stations ▪ Hydropower and other renewable energy (wind, solar, geothermal energy) ▪ Residential heating and combined heat and power (CHP) ▪ Transmission, distribution, storage ▪ Efficiency in agriculture, buildings, industries	**Water (*)** ▪ Storage, distribution, treatment ▪ Quality monitoring ▪ Flood and drought management ▪ Infrastructure (resilience) ▪ Electrical grid investments ▪ Roadways and bridges ▪ Urban green spaces ▪ Seismic risk compliance
Oil and gas • Energy efficiency and loss prevention	**Forestry (*)** ▪ Reforestation and land restoration ▪ Ecosystem protection
Processing and other industries (*) ▪ energy-intensive industries, including building materials (steel, cement) ▪ Chemical and metal refining ▪ Fertilizer production ▪ Mining ▪ Industrial pollution control ▪ Industrial land remediation	**Health care**
Buildings (*) ▪ Residential and commercial building construction ▪ Efficiency improvements, all buildings ▪ Seismic risk proofing	
Transportation (*) ▪ Public transit ▪ Passenger rail ▪ Electric vehicles ▪ Nonmotorized personal mobility ▪ Freight transport	
Waste (*) ▪ Waste Minimization ▪ Collection, handling, safe disposal ▪ Waste diversion, recycling, reuse ▪ Energy recovery, emission reduction	
Agriculture (*) ▪ Sustainable agriculture and farming ▪ Agricultural pollution control ▪ Land restoration	
Enabling sectors	

Activities related to data, technology, and research may not directly produce environmental outcomes but are crucial for the achievement of environmental objectives. These are 'enabling sectors' that improve the performance of other sectors and activities.[34] The following enabling sectors are recommended for inclusion as the taxonomy develops:

▪ **Information and communication technology (ICT).** This sector is important for digital transformation[35] and the improvement of efficiency of activities in emissions-intensive sectors. Activities may include data-driven

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[34] EU Sustainable Finance Taxonomy.

[35] Some digital innovations, such as crypto mining, are highly energy intensive and could add to environmental stress. Further analysis is needed before including such activities.

solutions, resource efficiency software, meteorological solutions for adaptation, and physical infrastructure such as data centers.

- **Professional, scientific, and technical activities.** The activities of this sector are related to technical studies and research that support environmental sustainability. Examples include studies on solar water heater installations, retrofit of buildings, and other energy conservation projects; environmental remediation studies or plans; green master plans; and circular economy studies; among others.

- **Carbon capture, utilization, and storage (CCUS).** Activities include the artificial capture, storage, and transformation of carbon emissions. This is particularly important for enabling high-emission sectors to continue to operate sustainably (for example, cement and steel manufacturing) or for the transition of the energy sector (for example, existing natural gas plants with carbon capture and storage).

- **There is generally a strong overlap in the sectors targeted by Uzbekistan and those of other countries that also use activity-based taxonomies.** Table 9 shows Uzbekistan's prioritized sectors and those of China, the Russian Federation, and Kazakhstan.

Table 9: Uzbekistan Sector Priorities and Those of Other Countries

	China[36]	Russia[37]	Kazakhstan	Uzbekistan
Renewable energy	√	√	√	√ (*)
Energy efficiency	√	√	√	√ (*)
Waste management	√	√	√	√ (*)
Sustainable water	√	√	√	√ (*)
Pollution prevention and control	√		√	√ (*)
Green transport	√	√	√	√ (*)
Sustainable agriculture, farming, and aquaculture	√		√	√ √
Biodiversity conservation	√	√	√	√ √
Sustainable buildings and construction	√	√	√	√ (*)
Sustainable production and trade	√	√		√ √
Green service	√		√	
ICT		√		
Forestry		√	√	√ (*)
Climate-dependent hazardous phenomena				√ √
Health care				√ √
Oil and gas				√ √

Note: Prioritized √ (*); Eventually cover √ √.

The determination of sector coverage and rules of assessment (discussed in the next section) are key to a 'fit-for-purpose' taxonomy. During the taxonomy development, decisions regarding the choice of sectors and assessment criteria should consider the following situations:

- **Green research and product commercialization activities risk being excluded if the assessment criteria are based on the direct environmental outcomes of an activity.** Research, piloting, and testing activities are by themselves environmentally neutral, at best. There is a risk that commercialization ventures for electric vehicles will be left out.

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[36] China Catalogue of Green Bond Endorsed Projects (2021). https://www.climatebonds.net/files/files/the-Green-Bond-Endorsed-Project-Catalogue-2021-Edition-110521.pdf.

[37] Russian National Taxonomy for Green Projects. https://veb.ru/files/?file=2d22e1e1576a8770c1171f13deae297f.pdf.

- **If the activity list classifies industries according to production processes that are green, then there is a risk that investments by polluting enterprises that reconfigure and improve their environmental performance will be excluded.**

- **By the same token, taxonomies built strictly around industrial classification codes may not recognize energy efficiency investments in existing facilities where neither production technology nor pollution control have changed.** As a result, investments into insulation and repairs of existing buildings and energy systems (gas lines) to reduce heat and energy loss are at risk of not qualifying in this case. Purpose-made project categories will be needed.

Rules of Assessment

Rules of assessment determine an activity's compliance with the taxonomy's principles. One commonly used rule of assessment involves quantitative criteria for the direct environmental outcome of the activity. The Uzbekistan taxonomy can aim to reach this stage eventually but should start its pilot version using nonquantitative criteria. With principles established and priorities identified for sector/activities, the final element of the taxonomy is to design rules of assessment to determine if activities qualify as green. This normally means setting a performance threshold for environmental performance. For some taxonomies, the performance threshold for environmental performance is quantitative. For example, a low-emitting vehicle or a low-energy building will be judged on its kg of CO_2 emissions per km traveled or energy consumption per floor area of the building. In these examples, the performance threshold to be met for the green taxonomy is a quantitative indicator. For some industries, certain good practices in process technology or pollution control are recommended as BAT for that industry, and adoption of BAT is deemed adequate for meeting the required environmental standards for environmental permitting. For these industries, the taxonomy could refer to BAT adoption as the performance threshold. Though not explicitly a quantitative figure, the underlying basis is a quantitative measure of environmental performance. Much as quantified limits are desirable to have, Uzbekistan's environmental code is still evolving and there are no stipulated technical standards, preferred lists of green technologies, or acknowledged best techniques. Adopting the technical standards of a peer country (for example, Kazakhstan) may be one approach. However, before adopting peer country standards, the government would need extensive information about technologies currently in use in Uzbekistan and their general environmental performance. Such data may not be available in the short term.

Qualitative rules of assessment that are systematically applied can be equally robust. The pilot Uzbekistan taxonomy can apply qualitative criteria for its rules of assessment, a practice that has precedence in several countries. Qualitative assessment can be more effective when there are limited environmental data as it is preferable to setting quantitative criteria at a low level of environmental performance, which would render the assessment obsolete and cast doubt on the taxonomy's integrity. Qualitative criteria are used to assess the principles of 'contribution to environmental objective' and 'do no significant harm' of the taxonomy,[38] and these are adequate substitutes for quantitative measures of environmental performance. Different forms of qualitative assessment criteria have been used, depending on what is most appropriate for the sector. The 2023 update of the ASEAN regional taxonomy can be a reference point. Table 10 offers possible qualitative criteria for energy provision and water resource activities. For the energy generation sector, as an example, the ASEAN regional taxonomy employs two criteria—to assess an activity's effect on carbon emissions and the risk of lock-in. Certain sectors and industries will not be able to satisfy the principle of 'do no significant harm' due to the very nature of the industry. These industries are identified in an exclusion list (Annex 2) and activities in these industries do not qualify for the taxonomy even if they are able to satisfy the other criteria.[39]

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[38] The third principle 'applying minimal social safeguards' is not assessed by quantitative criteria and will be judged qualitatively with a Yes or No (binary).

[39] When rules of assessment are applied to sectors or whole industries, the assessment for 'do no significant harm' is more complex as it should rightly look at systemic and indirect impacts as well. For instance, a specific investment in a munitions factory, with the necessary environmental controls, may have mitigated most of its direct environmental impacts. But this would not matter because the overall defense industry, with its purpose of supplying the means for social and environmental destruction, would be disqualified. The same would be true for the tobacco and gaming industries which cause negative social impacts even though the direct environmental impacts of cigarette factories or casinos can be largely mitigated.

Table 10: Examples of Qualitative Assessment for Energy Provision and Water Resource Activities

Principle	Criteria for Assessment		Response
Contribute to environmental objective	**Sector:** Energy provision[40] **Environmental objective:** Climate change mitigation	▪ Does the activity cut out carbon emissions? ▪ Does the activity lead to lock-in of carbon-intensive technology?	Yes/No
	Sector: Water resource management[41] **Environmental objective:** Climate change adaptation	▪ Does the activity enhance water security or improve climate resilience?	Yes/No
Do no significant harm	**Energy sector, water sector**	▪ Are other environmental objectives harmed, or is there remaining harm not mitigated?	Yes/No

To ensure systematic application of the criteria, a decision tree can be used to guide the assessment process. A decision tree for systematic assessment using qualitative criteria is shown in Figure 3, which classifies activities into three possible categories reflecting their degree of 'green'. An 'energy-specific' decision tree (a modification of the general decision tree) for two criteria assessing emission reduction and carbon lock-in is also shown. These rules should ideally be coded into algorithms on a digital platform and activity assessments signed and stored.

Figure 3: Decision Tree to Guide Assessment Process
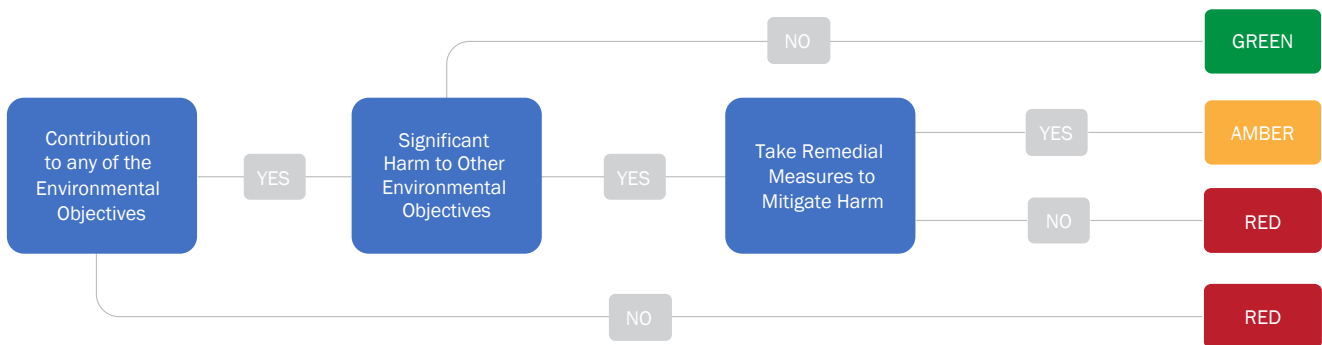
Figure 4: 'Energy-Specific' Decision Tree Assessment Process
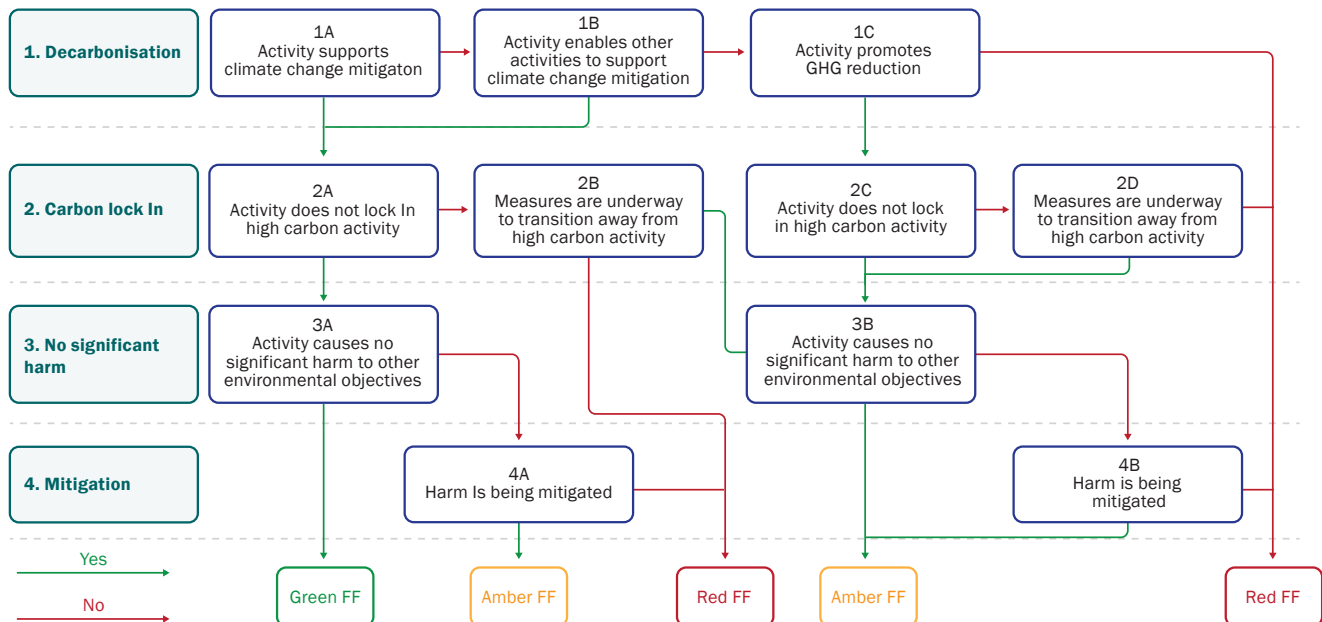
Source: ASEAN Taxonomy Board 2021, 43. https://asean.org/wp-content/uploads/2021/11/ASEAN-Taxonomy.pdf.

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40 If the EU NACE industrial code is used, this activity could come under D35.1 for "Electric power generation, transmission, and distribution."

41 If the EU NACE industrial code is used, this activity could come under the classification E36.0 for "Water collection, treatment, and supply."

By using qualitative assessment criteria, the taxonomy would have a system of traffic-light ratings, differentiating economic activities according to their degree of contribution to environmental objectives (or their level of environmental risk):

- **Green (Supporting) identifies activities that are clearly aligned with the objectives of the taxonomy.** In the energy provision example, activities that do not fully eliminate emissions would qualify by not contributing to carbon technology lock-in. This is demonstrated by the activity undertaking a transition consistent with a nationally approved emissions reduction pathways. In doing so, the activity aligns itself with the objectives of the taxonomy. One example of this is the conversion of home heating systems from fuel to electricity, if this is a strategy for domestic heating under the country's emissions reduction pathway.

- **Amber (Transition) identifies activities that are not fully aligned but are transitioning to meeting them in a quantifiable and time-bound way.** Amber activities could also be aligned activities with some residual harm (that is, environmental harm has been largely mitigated). Transition activities are the type of Amber activities that are of greater interest to policy makers. Experience from various countries has shown that many Amber activities are in the energy and industrial processes and generally tend to be of the following:

  - <u>Gas power generation.</u> While not a renewable energy source, gas may be considered Amber if it features in the country's long-term decarbonization strategy as an interim transitional technology. A time-limited Amber rating is sometimes given. In some cases, anticipated advancements in technology will inform policy choices in how Amber is treated. In the ASEAN regional taxonomy, gas-based power generation is provisionally Amber and will no longer be eligible by a certain time without carbon capture and storage.[42]

  - <u>Certain energy-intensive industrial processes.</u> Pollution-free technology is not immediately available or viable (such as steel and cement production), and the Amber rating is given in recognition of efforts to abate environmental harm as much as possible by applying the best available technology and pollution control. In some applications where the taxonomy is applied to business groups rather than individual projects, the Amber rating could be used for diversified energy companies that have only partially decarbonized their operations but not all.

The Amber category is where policy interventions could have the greatest environmental and economic impact. Many carbon-intensive industries are economically significant because of their contribution to growth and jobs but are generally also difficult to decarbonize because technological development and adoption are trailing behind. Incentives and other support measures could dramatically change the pace of transformation in these sectors. Considerable discretion is needed to classify activities as Amber, and this needs to be informed by the government's ultimate policy objectives. Examples of how other countries approach the issue of transition is provided.

Box 2: Examples of Other Countries Approaches to Transition

In **Thailand,**

- Transition activities must significantly improve their performance over time, demonstrated by tracking, monitoring, and disclosing CO_2e emissions. Alignment with a pathway to net zero by 2050 must be the end point of any transitional activity.

- Investments must not lock in carbon-intensive assets or processes for the future. If it is impossible, the activity must be phased out.

- Activities must not hamper development and the deployment of low-carbon alternatives.

- Activities must demonstrate a pathway to approach the climate objectives of the country they are operating in.

Australia refers to two forms of 'transition' activities:

- 'Transition Within' which is "decarbonizing high-emitting industries and activities over time."

- 'Transition Away' which is "replacing certain activities, where decarbonization may be unviable, with low-carbon alternatives."

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[42] ASEAN Taxonomy for Sustainable Finance.

Red (Unsustainable activities/prohibited/excluded) identifies activities that will be excluded from the taxonomy as they are at odds with the taxonomy's goals. These might include (a) carbon-intensive activities when workable substitutes exist (like coal-fired power production or thermal coal mining) and (b) activities or businesses that do not live up to the 'do no significant harm' or other objectives.

While Red activities are unlikely to be listed in the taxonomy, the information will be useful to policy makers and some effort should be dedicated to capturing and classifying data. Red activities could be further classified into (a) technologies that can be viably retired and (b) activities/businesses that could potentially graduate to either Amber or Green with improved management or design. Policy makers could consider accelerating the exit from Group (a) activities with policies like an investment moratorium with social adjustment support for affected employees. Group (b) could be given penalties and incentives to improve their social and environmental performance. The information could also be used by concerned shareholders to engage management.

The third principle—'compliance with minimum social safeguards'—is a qualitative assessment with no quantitative criteria. A parallel assessment on social safeguards can be done as a final check before admission. The assessment on social safeguards could in theory be assessed for the overall sector or industry as a prior evaluation and individual firms or activities admitted or ruled out accordingly.[43]

International Survey of Taxonomies

In the race to develop taxonomies, sovereign states use a variety of approaches and governance schemes. Over 25 countries are developing or have already developed their own taxonomies. Table 11 and Table 12 outline these various approaches[44] as of May 2022. Many countries choose to expand on the EU Sustainable Finance Taxonomy since it is the most well developed and wide in its scope. These taxonomies are created with consideration for regional differences, with many adapted from the EU Sustainable Finance Taxonomy as a starting point.

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[43] For instance, an industry could hypothetically be predicated on short-term workers on a commission basis with no collective bargaining, employee benefits and protections, and no social safeguards (for example, food delivery service).

[44] Climate & Company 2022.

Table 11: International Experiences in Green Finance Taxonomy

Environmental Objectives:												
ASEAN*	**Bangladesh***	**Brazil***	**Canada***	**Chile***	**China**	**Colombia**	**Dominican Republic***	**EU**	**India***	**Indonesia***	**Kazakhstan***	**Malaysia**
▪ CCA ▪ CCM ▪ Circular Economy ▪ Biodiversity Protection	▪ Water Conservation ▪ Circular Economy ▪ Pollution Prevention	*In development*	*In development*	*In development*	▪ CCA ▪ Circular economy ▪ Pollution prevention ▪ Biodiversity protection	▪ CCA ▪ CCM ▪ Water and soil management ▪ Circular economy ▪ Pollution prevention ▪ Biodiversity protection	*In development*	▪ CCA ▪ CCM ▪ Water conservation ▪ Circular economy ▪ Pollution prevention ▪ Biodiversity protection	*In development*	*In development*	*In development*	▪ CCA ▪ CCM ▪ Circular economy ▪ Biodiversity protection
Technical Screening Criteria defined for:												
ASEAN*	**Bangladesh***	**Brazil***	**Canada***	**Chile***	**China**	**Colombia**	**Dominican Republic***	**EU**	**India***	**Indonesia***	**Kazakhstan***	**Malaysia**
In development	*In development*	*In development*	*In development*	*In development*	Selected projects (only descriptive metrics used)	7 sectors contributing to CCM 3 sectors contributing to other environmental objectives	*In development*	13 sectors contributing to CCA and CCM 11 sectors contributing to other environmental objectives	*In development*	*In development*	*In development*	Some economic activities contributing to CCA and CCM (only descriptive metrics used)
'Do no significant harm' criteria defined for:												
ASEAN*	**Bangladesh***	**Brazil***	**Canada***	**Chile***	**China**	**Colombia**	**Dominican Republic***	**EU**	**India***	**Indonesia***	**Kazakhstan***	**Malaysia**
In development	Not applicable	*In development*	*In development*	*In development*	Not applicable	7 sectors contributing to CCM	*In development*	Some of the 13 sectors	*In development*	*In development*	*In development*	Not applicable
Classification Code:												
ASEAN*	**Bangladesh***	**Brazil***	**Canada***	**Chile***	**China**	**Colombia**	**Dominican Republic***	**EU**	**India***	**Indonesia***	**Kazakhstan***	**Malaysia**
International Standard Industrial Classification of All Economic Activities (ISIC)	No reference	No reference	No reference	No reference	Classification of Strategic Emerging Industry	ISIC	No reference	NACE	No reference	No reference	No reference	No reference
Link:												
ASEAN	Bangladesh	Brazil	Canada	Chile	China	Colombia	Dominican Republic (media statement)	EU	India (independent study)	Indonesia	Kazakhstan	Malaysia

Note: * Information is limited given that the national green finance taxonomies are still in development. CCA = Climate Change Adaptation; CCM = Climate Change Mitigation.

Table 12: International Experiences in Green Finance Taxonomy

Environmental objectives:												
Mexico*	**Mongolia***	**New Zealand***	**Peru***	**Philippines***	**Russia***	**Singapore***	**South Africa***	**Korea***	**Sri Lanka***	**Thailand***	**United Kingdom***	
In development	▪ CCA ▪ CCM ▪ Circular Economy ▪ Pollution Prevention	*In development*	*In development*	*In development*	▪ Pollution prevention ▪ Environmental protection ▪ GHG emission reduction	▪ CCA ▪ CCM ▪ Circular economy ▪ Pollution prevention ▪ Biodiversity protection	▪ CCA ▪ CCM ▪ Water conservation ▪ Circular economy ▪ Pollution prevention ▪ Biodiversity protection	▪ CCA ▪ CCM ▪ Water conservation ▪ Circular economy ▪ Pollution prevention ▪ Biodiversity protection ▪ GHG emission reduction	▪ CCA ▪ CCM ▪ Pollution prevention ▪ Ecological conservation	*In development*	*In development*	

Technical screening criteria defined for:												
Mexico*	**Mongolia***	**New Zealand***	**Peru***	**Philippines***	**Russia***	**Singapore***	**South Africa***	**Korea***	**Sri Lanka***	**Thailand***	**United Kingdom***	
In development	Some economic activities from 8 sectors (only descriptive metrics used)	*In development*	*In development*	*In development*	Selected projects from 8 sectors	Some economic activities from 3 sectors	Some economic activities from 8 sectors contributing to CCA and CCM	69 economic activities	Some economic activities from 8 sectors contributing to all environmental objectives	*In development*	*In development*	

'Do no significant harm' criteria defined for:												
Mexico*	**Mongolia***	**New Zealand***	**Peru***	**Philippines***	**Russia***	**Singapore***	**South Africa***	**Korea***	**Sri Lanka***	**Thailand***	**United Kingdom***	
In development	Not applicable	*In development*	*In development*	*In development*	Not Applicable	*In development*	Some economic activities from 8 sectors contributing to CCA and CCM	69 economic activities	Not applicable	*In development*	*In development*	

Classification Code:												
Mexico*	**Mongolia***	**New Zealand***	**Peru***	**Philippines***	**Russia***	**Singapore***	**South Africa***	**Korea***	**Sri Lanka***	**Thailand***	**United Kingdom***	
No reference	No reference	No reference	No reference	No reference	No reference	ISIC	SIC	No reference	No reference	No reference	No reference	

Link:												
Mexico	Mongolia	New Zealand (Sustainable Finance progress report)	Peru (Green Finance roadmap)	The Philippines (Sustainable Finance roadmap)	Russia	Singapore (Taxonomy public consultation)	South Africa	Korea (media statement)	Sri Lanka	Thailand (Sustainable Finance Initiatives)	UK (Greening Finance roadmap)	

Note: * Information is limited given that the national green finance taxonomies are still in development. CCA = Climate Change Adaptation; CCM = Climate Change Mitigation.

Recap of the Uzbekistan Pilot Taxonomy

In terms of the development pathway, the Guidance Note recommends that development work reaches the stage of an activity-based taxonomy with qualitative criteria. The proposed pilot green taxonomy for Uzbekistan has been drawn from the experience and approaches used by other countries. Uzbekistan's environmental objectives were aligned with the EU Sustainable Finance Taxonomy. The taxonomy principles combined the practices from various countries to reflect the latest trends in dealing with transitional activities. The decision tree and rules of assessment for Uzbekistan are based on the nonquantitative and systematic assessment currently in use in the ASEAN region and elsewhere. The rest of the development process will apply these rules and assessment criteria to an economic framework (sector and industrial classification). Priority sectors for this exercise were identified based on their importance relative to the green economy framework. The success of this last step will depend on the coverage of Uzbekistan's industrial classification codes, that is, whether it is wide enough and whether the codes are in prevalent use. As Uzbekistan goes through this step, a reference from a peer country with a similar economic structure and level of market development may serve as a useful guide. The Kazakhstan taxonomy, which uses quantitative criteria in some cases, is given in Annex 3 as an example.

Evolution of the Pilot Taxonomy

Green taxonomies are built up over time and are evolving by definition. The activity-based taxonomy should not be treated as a static 'positive' list. Given the evolving state of green markets and technologies, new opportunities constantly evolve, and some become redundant. The taxonomy principles and rules-based assessment allow the taxonomy to interpret the market and technology landscape as it matures. They are the essence of the taxonomy and will be repeatedly called upon whenever the taxonomy is to be reviewed and expanded to reflect market developments. Updating the taxonomy to reflect the best available technology does not mean that a previously classified green activity is then downgraded to Amber or Red as this would be an adverse signal to the market. There should be documentation of the different 'vintages' of taxonomy so that past investments in green technologies are not penalized and activities continue to be eligible for any previously approved incentives.

Another natural evolution path is toward more quantitative or technical assessments. It is recommended that Uzbekistan gradually begin introducing quantitative or technical criteria into its taxonomy as more data on environmental performance become available, and environmental standards are more established. As explained in the earlier section, a principles-based taxonomy can gradually evolve into an activity-based taxonomy by specifying sectors and activities. One choice does not preclude the other. Similarly, activity-based taxonomies that use qualitative criteria, as recommended for Uzbekistan, are not precluded from evolving to quantitative criteria. This is the case of the ASEAN regional taxonomy which is developing a 'Plus Standard', where its Green- and Amber-rated activities are further classified according to quantitative thresholds to be set in the future. This evolution from the principles-based taxonomy to the recommended pilot taxonomy and finally to a more refined taxonomy with quantitative criteria is illustrated in Figure 5.

Figure 5: Model Development of the Uzbekistan Green Taxonomy
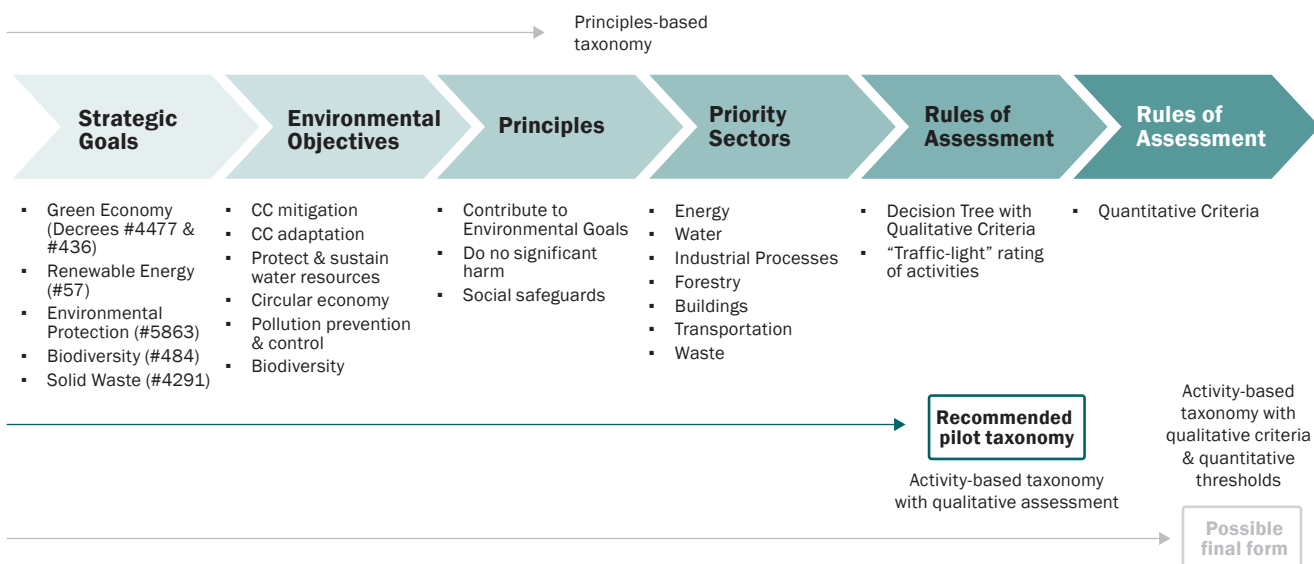
Well-designed qualitative assessments are objective and credible, while quantitative assessment criteria are also objective and offer other advantages—notably results reporting and integration. Setting quantitative criteria for environmental contribution will effectively set performance thresholds for activities. For instance, industrial businesses or activities assessed by quantitative criteria may be allowed to generate no more than a certain volume of waste or use no more than a certain amount of energy per production value. Applying this to an Uzbekistan context, a quantitative threshold that could be applied to building projects is to ensure that energy consumption is at least 20 percent less than a baseline (computed from data on current usage). This would directly support the green economy's numerical target of 20 percent improvement in energy efficiency. While these limits seem rigid, quantitative thresholds can help generate useful data on environmental performance. This can **facilitate results reporting** for government agencies, firms, and financial institutions that each would have respective policies, corporate targets, or portfolio standards (still, quantitative thresholds are only needed in some cases—for example, many taxonomies accept most forms of renewable power generation without setting emission limits).

Evolving to quantitative or technical criteria allows the taxonomy to set more precise and potentially more ambitious technical standards. This has the advantage of aligning the taxonomy to national environmental goals as they progressively become more demanding. The right moment for Uzbekistan to adopt stricter criteria will depend on how much it can achieve with the first iteration of the taxonomy with qualitative criteria. In setting the additional requirements, there should be a firm grasp of the technologies commonly used in the sectors, their general environmental performance, and whether technical standards are already required as part of other environmental regulations (Tables 12 and 13 list some examples). Wholesale adoption of other country models is not recommended. The EU has an aggressive net-zero carbon goal that member states have to achieve, and the EU applies a quantitative threshold (100 grams of CO_2/kWhr) for renewable energy generation that would even exclude certain geothermal and hydropower projects. Natural gas power generation is accorded transitional status. In general, the recommended approach is to set quantitative thresholds, especially for its main polluting sectors, in pace with the tightening of national environmental targets (or NDC), and if a performance review of the taxonomy finds that there has been insufficient change in investment choices. A sample of quantitative assessment criteria used by other countries are summarized in Table 13 for reference.

Table 13: Criteria Used in Taxonomies for Hydropower, Solar Power, Wind Power, and Green Building

Climate Bond Initiative	EU	China	Kazakhstan
Hydropower generation			
Less than 100 g CO_2e/kWh	Less than 100 g CO_2e/kWh	Above 50 MW eligible	No limit (up to 10 MW) Requires the conclusion of the EIA on the admissibility of the project or the conclusion of the screening of the impact of the planned activity on the absence of the need for a mandatory EIA or the conclusion of the EIA on the admissibility of the project (up to 100 MW)
Solar power generation			
Less than 15% of electricity generated from nonrenewable energy resources	Less than 100 g CO_2e/kWhr declining to net zero in 2050	–	No limit
Wind power generation			
Less than 15% of electricity generated from non-renewable energy resources	Less than 100 g CO_2e/kWhr declining to net zero in 2050	–	No limit
Green building construction			
Emissions footprint in top 15% in the local market	Primary energy demand in kWh/m²/year at least 20% lower than nearly zero-emission building (NZEB)	Regional/city-level standards	Presence of the following green building ratings: LEED,[45] EDGE,[46] BREEAM,[47] DGNB,[48] energy rating labels such as the U.S. Energy Star, and compliance with energy labeling systems such as the Energy Performance Certifications used in the EU

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[45] Leadership in Energy and Environmental Design.

[46] Excellence in Design for Greater Efficiency (IFC, World Bank Group).

[47] BREEAM: Building Research Establishment Environmental Assessment Method (UK).

[48] German Sustainable Building Council.

Climate Bond Initiative	EU	China	Kazakhstan
Green building renovation			
Emissions footprint in top 15% of the local market or substantial reduction in gCO$_2$/m² due to retrofit	Primary energy demand consistent with energy performance of buildings directive (EPBD) for major renovation or 30% reduction in primary energy demand for relative improvement	Regional/ city level standards	—

Table 14: Use of Quantitative Criteria under Belt and Road Initiative (BRI)

	Environmental Objective 1: Pollution Prevention	Environment Objective 2: Climate Change Mitigation	Environment Objective 3: Biodiversity Conservation
Positive contribution	**For all sectors to follow neutral criteria +** ▪ Improvement of either air, water, and/or soil quality through project, relative to pre-project implementation status; and/or ▪ Directly enables other activities to make a substantial contribution to pollution control, while not leading to a lock-in of assets that undermine long-term environmental goals	▪ **Energy sector:** <100 g CO$_2$e/ kWh average emissions over whole project lifecycle and supply chain ▪ **Manufacturing:** low carbon emission either through use of at least 90% green electricity and/or offsetting of at least 90% emissions ▪ **Transport:** Zero direct emissions or total emissions from inter-urban passenger rail <50 g CO$_2$e/passenger-km until 2025 ▪ **Agriculture:** reduction in GHG emissions over a period	Neutral criteria + improvement of biodiversity
Neutral	**For all sectors:** ▪ No negative impact on water quality ▪ No negative impact on soil quality ▪ No negative impact on air quality ▪ No significant negative noise impact in air, on ground, or in water	**Energy sector:** 100–300 g CO$_2$e/ kWh average emissions over whole project lifecycle and supply chain **Manufacturing:** Use of electricity similar to neutral category **Transport:** Zero direct emissions or total emissions from inter-urban passenger rail <50 g CO$_2$e/passenger-km until 2025 **Agriculture:** No significant reduction or increase of CO$_2$ emissions	**For all sectors:** ▪ Not within 10 km of key biodiversity areas (KBAs) and its supply chain not affecting KBAs ▪ No effect on ecosystem service, livelihoods of hunters, gatherers, fishers ▪ Impact limited to <500 m of site ▪ No effect on routes of migratory species ▪ All biodiversity impacts reversible within 24 months after project disassembly
Significant harm	For all projects at risk of not meeting either of the neutral criteria	▪ **Energy sector:** >300 g CO$_2$e/ kWh average emissions over whole project life cycle and supply chain ▪ At risk of not meeting either of the neutral criteria **for transport and manufacturing** ▪ **Agriculture:** Significant increase in CO$_2$e production through inappropriate management	For all projects at risk of not meeting either of the neutral criteria

Source: Natixis Corporate & Investment Banking 2021 (based on BRI International Green Development Coalition 2020).

Table 15: Different Forms of Quantitative and Technical Criteria

EU	China	Russia	Mongolia	Bangladesh	Climate Bond Initiative
Type of Criteria: Based on nature of product or technology					
Example: Construction or operation of electricity generation facilities from wind power	**Examples:** Most of the Green Bond Catalogue projects rely on this kind of criteria, including energy, industry, and water resources	**Examples:** Construction of waste-to-energy facilities for small mixed electrical waste; urban freight transport services by road	**Example:** Heat pumps using soil, water, and air gradients	**Examples:** Solar home system; solar Pico grid; solar micro grid	**Example:** Zero direct emissions miscellaneous vehicles such as waste collection vehicles or construction vehicles
Type of Criteria: Based on relative or absolute environmental performance					
Example: Life-cycle GHG emissions from the generation of electricity using renewable gaseous and liquid fuels are lower than 100 g CO_2e/kWh.	Not applicable	**Examples:** Hydrogen fuels with NO_x emissions less than 250 mg/m³	**Example:** Low pollution energy: Minimum 80% reduction in pollution ($PM_{2.5}$) compared to coal baseline	Not applicable	**Example:** Electricity generation facilities with less than 100 g CO_2/kWh of direct emissions
Type of Criteria: Based on technical standards or norms					
Example: Buildings: light sources rated in the highest two classes of energy efficiency in accordance with regulation (EU 2017/1369)	**Example:** Green organic agriculture: Product and its production process must comply with the national standard for organic products	**Example:** Construction of green buildings and facilities: Compliance with one or more green standards prepared in accordance with Federal Law No. 162- FZ	**Example:** Construction of new green buildings compliant with certifications such as LEED, EDGE, BREEAM	**Example:** Green building certified by LEED, BREEAM, EDGE, , or other standard	Not applicable

Source: Adapted from Natixis Corporate & Investment Banking 2021.

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ANNEX 1: INSTITUTIONAL ARRANGEMENTS AND TAXONOMY GOVERNANCE

A well-designed institutional framework is crucial for developing a taxonomy that serves the green and climate policy objectives of the country. The governance arrangement and how institutions carry out their responsibilities can further determine whether the private sector, including international players, responds positively to the taxonomy. This can be done by upholding transparency, consistency, and credibility in the creation and application of the green taxonomy.

Box 3: Steps to Develop a National Green Taxonomy

The following steps are recommended:

1. Establish a steering committee or expert working group to lead and coordinate the development of the taxonomy. The following is a sample list of stakeholders:
   a. Ministry of Finance
   b. Ministry of Environment
   c. Ministries and government departments or entities in charge of setting the national climate change and sustainable development agenda and economic planning
   d. Ministries and other authorities with knowledge about potentially green public and private investments (such as the Ministry of Planning and Investment)
   e. Those in charge of oversight and regulation for the banking and insurance sectors and securities markets
   f. Financial institutions in general and those supporting sustainable investments in particular
   g. Investors
   h. Stock exchange(s).
2. Agree on the strategic objective behind the development of a green taxonomy.
3. Identify the targeted sustainability and/or environmental objectives.
4. Take stock of complementary efforts in the country, including existing initiatives, incentives, and mechanisms to finance green activities, and the respective beneficiary sectors, as well as existing guidelines and/or certification schemes for defining or outlining eligible 'green' activities.
5. Consider experiences and lessons learned in comparable jurisdictions and/or internationally, prioritizing national environmental goals and commitments.
6. Develop a plan of action.
7. Engage local technical experts to develop a draft taxonomy and definitions.
8. Review the draft, ensuring consistency in accordance with the following:
   a. National and sectoral climate and environmentally sustainable development priorities, objectives, and commitments
   b. Overarching market and fiduciary considerations of the financial sector
   c. Existing and foreseen fiscal and other incentives to promote green investments.
9. Undertake stakeholder consultation with the following:
   a. Environmental and other regulators with programs for environmental improvement
   b. Banks, asset/investment managers, and banking and insurance associations
   c. Key economic sectors most likely to be materially affected and/or benefited by the green taxonomy
   d. Civil society and academia (particularly research centers)
   e. International organizations and international investors.
10. Collect and incorporate expert inputs and views from relevant stakeholders.
11. Determine the transition process to full implementation.
12. Approve and launch.
13. Update based on new information and changes in technology.

A third party with significant experience and global knowledge, such as a multilateral development bank, may help coordinate efforts, share international knowledge, and facilitate the adoption of the plan and the preparation of a draft taxonomy.

Source: World Bank Group 2020.

Several characteristic groups or 'layers' are needed for the governance of the taxonomy and are explained below:

▪ **Strategic and regulatory.** Key responsibilities for this group will be establishing the objectives, ensuring compliance with national goals and policies, reviewing, approving, and publishing the taxonomy, and managing the entire development and improvement process. The typical government bodies that should have the strongest role would be the ministry responsible for economic affairs and the ministry for environment or for climate change. Public finance authorities, such as the MEF's Budget Department, and the official bodies for developing and regulating the financial sectors should also be involved. They would be important in making public resource allocation decisions, monitoring and verifying investment and public finance flows, and encouraging new financial products and services to support areas of need.

▪ **Project management and supporting execution.** This covers all activities related to the creation and improvement of the taxonomy. In practice, this could be staff from the strategic setting and regulatory bodies. This layer acts as a conduit between the strategic/regulatory authority and the technical groups. They will also keep the main committee constantly updated on the taxonomy's development, and handling all administrative tasks, working with technical specialists, consolidating technical opinions, and drafting the taxonomy document's initial draft to be given to the main committee.

▪ **Technical advisory.** This group has an important role in recommending criteria, contributing to technical discussions, reviewing the taxonomy draft, and adding or modifying activities. Lead advisers, technical expert groups, sector experts, and consultants could feature here. The project coordinators will engage these individuals in thorough technical discussions to evaluate the taxonomy-eligible activities and criteria for various sectors. The following factors should be taken into account when choosing technical experts and consultants to help design qualifying criteria: understanding of climate science, understanding of cutting-edge technologies and sciences in related fields, and knowledge of the environmental norms and standards that apply to various industries and sectors at the national and global levels. It is important that experts are well-versed in sector trends but are relatively free of affiliation to specific business lobbies.

Table 16: Elements and Responsibilities of Taxonomy Governance

	Development Phase	Implementation Phase
Strategic and regulatory	**Taxonomy owner** ▪ Establishment of objectives ▪ Supervision of the development process ▪ Review and approval	**Taxonomy owner** ▪ Implementation of taxonomy ▪ Supervision and monitoring of implementation progress ▪ Review and approval
Execution support	**Project coordinators and advisers** ▪ Project coordination ▪ Organize technical discussions ▪ Preparation of taxonomy draft	**Project coordinators and advisers** ▪ Project coordination ▪ Organize technical discussion for any change request/fine-tuning ▪ Preparation of amendment draft ▪ (Aggregate) data collection and reporting and analyses
Technical support	**Technical and industry reviewers** ▪ Technical discussions ▪ Reviewing sector status	**Technical and industry reviewers** ▪ Technical discussion ▪ Work on development to improve taxonomy ▪ Reviews consultation feedbacks including reporting requirements/challenges

Source: Adapted from various sources.

A national green taxonomy should be led by national authorities responsible for defining the country's sustainable development agenda and priorities as well as those responsible for supporting and promoting environmental protection and climate action.[49] Involvement of the financial sector authorities is also recommended. In some cases, the financial regulator is more prominent, but this may not be desirable from the perspective of designing and updating a taxonomy to serve national environmental and climate objectives, which goes beyond financing volume as a measure of success. The examples of the EU and Australia are provided for reference.

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[49] World Bank Group 2020.

Figure 6: Governance of the EU Sustainable Finance Taxonomy

European Commission
- Oversees taxonomy development by the technical expert group (TEG)
- Responsible for taxonomy proposals sent to European Parliament for approval

TEG Members
- 32 members (serving as independent experts)
- Approve provision of advice to the European Commission
- Project coordination; appoint sector chairs

Sector Chairs
- 8 sector groups, each with Chairs/Co-Chairs and dedicated members
- Chairs coordinate sector groups, ensure appropriate composition, serve as link between TEG members and sector groups

Technical Experts
- Members of sector groups, provide technical expertise to develop sector-based taxonomy activities and criteria

Sector Chairs
- Review the practicality of proposed eligibility criteria and of various aspects of the operation of the certification scheme

Source: Sustainable Finance Action Council 2022, 62.

Box 4: Recommended Governance Model for Australian Taxonomy

1. **Taxonomy Board:** Includes government, peak representation across the financial sector (banking, insurance, investors and superannuation), climate and specialist expertise, and social and Indigenous representation. Sets the objectives, design principles, methodology to establish the taxonomy criteria, and priorities for development, and approve the taxonomy proposals. Consideration to be given to the appropriate role of Australia's key economic and regulatory agencies: APRA, the RBA and ASIC.

2. **Financial Industry Technical Group:** Fixed term transparent membership from experts covering climate, environment, social, regulatory, data and taxonomy relevant expertise. Responsible for the development of taxonomy proposals and convening of sector- and subject-specific working groups.

3. **Sector- and subject-specific working groups and forums:** Established as needed to provide sector- and subject-specific advice to inform the Finance Industry Technical Group's work and provide a forum for stakeholders to provide views on specific areas of the taxonomy affecting them.

Independent expertise on science-aligned sectoral pathways should be provided to tier 1 as key input to the taxonomy Board's priorities and utilised by tier 2 in the development of technical criteria for taxonomy aligned activities.

Source: Australia Sustainable Finance Institute 2022, 9.

ANNEX 2: EXAMPLES OF EXCLUSION LIST OR PROHIBITED ACTIVITIES

IFC Exclusion List (2007)

The IFC Exclusion List defines the types of projects that IFC **does not** finance.

- Production or trade in any product or activity deemed illegal under host country laws or regulations or international conventions and agreements or subject to international bans, such as pharmaceuticals, pesticides/herbicides, ozone-depleting substances, polychlorinated biphenyls PCBs, and wildlife or products regulated under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)

- Production or trade in weapons and munitions*

- Production or trade in alcoholic beverages (excluding beer and wine)*

- Production or trade in tobacco*

- Gambling, casinos, and equivalent enterprises*

- Production or trade in radioactive materials. This does not apply to the purchase of medical equipment, quality control (measurement) equipment, and any equipment where IFC considers the radioactive source to be trivial and/or adequately shielded

- Production or trade in unbonded asbestos fibers. This does not apply to purchase and use of bonded asbestos cement sheeting where the asbestos content is less than 20 percent

- Drift net fishing in the marine environment using nets more than 2.5 km long.

A reasonableness test will be applied when the activities of the project company would have a significant development impact, but circumstances of the country require adjustment to the Exclusion List.

All financial intermediaries (FIs), except those engaged in activities specified below, must apply the following exclusions, in addition to IFC's Exclusion List:

- Production or activities involving harmful or exploitative forms of forced labor**/harmful child labor***

- Commercial logging operations for use in primary tropical moist forest

- Production or trade in wood or other forestry products other than from sustainably managed forests.

* When investing in microfinance activities, FIs will apply the following items in addition to the IFC Exclusion List:

- Production or activities involving harmful or exploitative forms of forced labor**/harmful child labor***

- Production, trade, storage, or transport of significant volumes of hazardous chemicals or commercial scale usage of hazardous chemicals. Hazardous chemicals include gasoline, kerosene, and other petroleum products

- Production or activities that impinge on the lands owned or claimed under adjudication, by indigenous peoples, without their full documented consent.

* In trade finance projects, given the nature of the transactions, FIs will apply the following items in addition to the IFC Exclusion List:

- Production or activities involving harmful or exploitative forms of forced labor**/harmful child labor.***

Notes:

* This does not apply to project sponsors who are not substantially involved in these activities. "Not substantially involved" means that the activity concerned is ancillary to a project sponsor's primary operations.

** Forced labor means all work or service, not voluntarily performed, that is extracted from an individual under threat of force or penalty.

*** Harmful child labor means the employment of children that is economically exploitive; hazardous to their well-being; disruptive to their education; or harmful to their health or physical, mental, spiritual, moral, or social development.

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The bond framework then includes a further breakdown of the selection criteria in the form of a set of exclusion criteria, which prohibits allocating proceeds (in the above forms) to projects which fall into certain **excluded categories.**

- Exploration, production, or transportation of fossil fuels
- Generation of nuclear power
- Alcohol, weapons, tobacco, palm oil, cattle/beef production, controversial minerals, or adult entertainment industries.

In addition, all expenditures were screened to ensure that they do not involve any of the following activities:

- Deforestation or degradation of biodiversity
- Child labor or forced labor
- Breach of anti-corruption laws or environmental, social, and governance laws, policies, and procedures.

ANNEX 3: ROLE OF STANDARD INDUSTRIAL CODES

Standard industrial codes can aid taxonomy development by providing a template of the economy in a cascade of sectors, subsector (or industries), and specific economic activities (or projects). This can be especially useful for activity-based green taxonomies. While it is an aid, classification codes are not a complete solution, nor does it represent the taxonomy itself. Typical industrial classification codes are sector based, while most activities targeting environmental sustainability rely on particular technologies or context-specific characteristics. Whether in land use, transport, or energy systems, the desired 'green' activities often have specific technological and geo-specific features at a more granular level than articulated by most economic or industrial classification systems.

The usual rule of thumb is that the more extensive a classification system, the better it captures all significant aspects of the economy that could be environmentally sustainable. For example, the EU Taxonomy uses its statistical classification of economic activities (NACE) code as a framework to capture all economic sectors and activities. Even then, NACE codes are only exhaustive in covering some economic activities that contribute to environmental sustainability, particularly those for climate change mitigation and adaptation. This is generally a shortcoming in any sector framework attempting to capture environmental activities' locational and context-specific characteristics. The United Nations-created ISIC industrial classification system of economic activity is another option because it is broad and has been used for several taxonomies. However, ISIC does not cover emission reduction activities that are not monetized or avoided activities. Still, the wide coverage of economic sectors worldwide makes the ISIC system a reasonable choice for taxonomy development globally.

In general, national industrial classification codes are preferable to international classifications. One consideration would be whether the country's national system is widely used. Large corporations and governmental organizations are more inclined to track economic activity and distribute resources than smaller enterprises. Uzbekistan's National Industrial Classification System is based on the ISIC. It is created and maintained by the Statistics Agency under the President of the Republic of Uzbekistan. The most recent edition of the Uzbekistan Industrial Classification System (OKED)[50] was established in 2017, consisting of 21 main sections, each with several subsections and categories. **The OKED could be one option[51] for organizing Uzbekistan's green taxonomy.** Various industry classification systems used by different countries are listed and summarized in Table 17.

Table 17: Industry Classification Systems

Industry Classification Systems	Coverage		Classification Structure	General Information
ISIC	International Standard Industrial Classification	Worldwide	4 levels 21 sections, 88 divisions, 238 groups, 419 classes	Maintained by the United Nations Has a central position among existing classifications Used in the data compilation of various economic, social, health, and demographic statistics
NACE	Statistical Classification of Economic Activities in the European Community	EU	4 levels (references ISIC rev. 4) 21 sections, 88 divisions, 272 groups, and 615 classes	Used for the EU Taxonomy
NAICS	North American Industry Classification System	United States	20 industrial sectors subdivided into subsectors, industry groups, and industries	Used by the US Federal statistical agencies for gathering classifying statistical data on the US economy

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[50] In Russian: "Общегосударственный классификатор видов экономической деятельности Республики Узбекистан" (OKED).

[51] From the financing perspective, industrial classification codes do not distinguish between existing facilities where working capital is used and new facilities which require investment financing. As these are different financing products, additional guidelines will also be needed to support the financial sector.

Industry Classification Systems	Coverage		Classification Structure	General Information
CSIC	China Classification National Activities	China	4 levels that refer to ISIC (Rev. 4), 20 industries, and 97 principal activities	Used for national census management, planning, tax reporting, and so on
GICS	Global Industry Classification System	Financial industry	11 sectors 24 industry groups, 69 industries, 159 sub-industries	Common global classification standard by major groups involved in investing: asset managers, brokers, custodians, consultants, research teams, and stock exchanges

Source: Monetary Authority of Singapore, First Green Finance Industry Taskforce (GFIT), Taxonomy Consultation Paper.

In summary, selecting a national industrial classification system is recommended to reflect the current economic structure well, even if emerging new green technologies and activities are not explicitly reflected. This should not be considered a handicap as it would draw attention to improving the environmental sustainability of the current economic structure. Purposefully expanding industrial codes into certain specialized 'green' activities may encourage industrial policy and support for certain new technologies at the expense of policy interventions to make the existing economic structure more environmentally sustainable. Uzbekistan, like other countries, already possesses 'brown' industries such as gas production and distribution and metals mining, which are represented in the existing industrial code. Even as new green activities deserve active government support, equal attention needs to be given to improving these polluting industries' environmental sustainability before their assets become redundant and are retired.

ANNEX 4: TAXONOMY EXAMPLE OF A PEER COUNTRY

Classification (Taxonomy) of Green Projects Eligible for Financing through Green Bonds and Green Loans

Level 1: Category	Level 2: Sector	Level 2: Subsector	GCEA2 Code	Examples	Threshold
1. Renewable energy	1.1 Wind	1.1.1 Energy generation facilities	35.11.4	Wind electricity generation facilities, wind pumps, wind turbines	No limit
	1.2 Solar	1.2.1 Power generation facilities (PV & CSP)	35.11.5	Onshore centralized and distributed solar power facilities, including concentrated solar power (CSP) plants, solar photovoltaic (PV) power, distributed solar PV station.	No limit
		1.2.2 Small-scale distributed solar systems	35.11.5	Small-scale portable solar home systems, mini grid, and other types of standalone systems to power small communities	No limit
		1.2.3 Solar thermal application facilities	35.11.5	Facilities for application and generation of solar thermal energy, including solar water heating and other thermal applications of solar power in all sectors	No limit
	1.3 Geothermal	1.3.1 Power and heat generation facilities	28.92.1 35.11.9	Facilities for electricity generation and thermal applications of geothermal power in all sectors, geothermal heat pumps for space and centralized heating	No limit
	1.4 Hydropower	1.4.1 Small-scale hydroelectric power generation facilities (up to 10 MW)	35.11.2	Hydroelectric power plants with installations located in one hydroelectric complex, with a total capacity not more than 10 MW	No limit
		1.4.2 Medium hydroelectric power generation facilities (up to 100 MW)	35.11.2	Hydroelectric power plants with a total installed capacity of 10–100 MW, hydroelectric power plant with a pump	The conclusion of the EIA on the admissibility of the project or the conclusion of the screening of the impact of the planned activity on the absence of the need for a mandatory EIA or the conclusion of the EIA on the admissibility of the project

Level 1: Category	Level 2: Sector	Level 2: Subsector	GCEA2 Code	Examples	Threshold
1. Renewable energy	1.5 Others	1.5.1 Other heat generation facilities	35.11.9	Heat pumps using soil, water, and air gradients	No limit
	1.6 Bioenergy	1.6.1 Bio-energy product facilities	38.21.0 72.11.0	Facilities for producing biofuel, biomass, biogas, and other bioenergy products including fuel preparation process facilities, pretreatment facilities and bio-refinery facilities, gaseous, liquid, and solid (forest) biofuel manufacturing facilities (including anaerobic digestion plants). Equipment for the processing of sludge after wastewater treatment	Minimum share of waste: 50% or 300 g CO_2/kWh. Also for large plants, compliance with the requirements of BAT directory (BREF)[1] for large combustion plants, 2017, for the combustion of solid biomass and/or peat in terms of waste management, material use, meeting SO_2, NO_x, and CO emission thresholds
		1.6.2 Heat & power generation	38.21.0	Power and heat generation facilities; heating facilities; biomass and biogas power stations, biomass CHP station; improved biomass stove; use of agricultural and forest waste, wastage from crops for electrification	Minimum share of waste: 50% or 300 g CO_2/kWh. In addition, for large plants: compliance with the requirements of BAT directory (BREF) for large combustion plants, 2017, for the combustion of solid biomass and/or peat in terms of waste management, material use, meeting SO_2, NO^x, and CO emission thresholds
	1.7 Supply chain and supporting infrastructure for renewable energy	1.7.1 Manufacturing of renewable energy equipment	28.11.2 28.12.0 28.13.1 28.13.2 28.14.0	Plants for the production or assembly of wind turbines, hydro and geothermal turbines, PV cells and components, solar collectors (so-called plates or dishes), gutters and components, geothermal pumps. Manufacturing of products, key components, equipment, and automation technology for the following renewable energy applications: Geothermal energy Hydro energy CSP Solar PV energy Wind energy Green hydrogen	No limit

Level 1: Category	Level 2: Sector	Level 2: Subsector	GCEA2 Code	Examples	Threshold
1. Renewable energy		1.7.2 Transmission lines and supporting infrastructure for renewable energy systems	26.11.0 27.11.0 27.12.0 27.20.0 33.14.1 35.13.0 42.22.0	New, expanded, and improved transmission systems (lines, substations), storage systems (battery, mechanical, pumped storage), and new ICT (smart-grid and mini-grid) for scaling up the utility of renewable energy; dedicated transmission lines; large- and small-scale storage; smart grid; heat and electricity meters and sensors; at and electricity meters and sensors; transformers; voltage regulators; switchgears; ways for transportation environmentally friendly technologies; green hydrogen storage systems	No limit
		1.7.3 Renewable energy storage systems	27.20.0 27.90.9	Batteries, capacitors, compressed air storage and flywheels; large-scale energy storage facilities, and manufacture facilities dedicated to any of the above	No limit
	1.8 Hydrogen production	1.8.1 Green hydrogen production	20.11.0	Installations for the production of hydrogen using renewable energy ('green' hydrogen)	The minimum direct CO_2 emissions from hydrogen production are 5.8 tons CO_2e/ton of hydrogen; electricity consumption in the production of hydrogen by electrolysis is no more than 58 MW * h/ton of hydrogen; the average specific emissions from the production of electricity used in the production of hydrogen do not exceed 100 g of CO_2e/kW * h.
2. Energy efficiency	2.1 Improving energy efficiency in existing and newly created industrial facilities	2.1.1 Energy efficient equipment and technology improvement	25.21.0 25.30.0 27.11.0 28.11.2 28.15.2 33.20.0 35.30.2 43.22.0	Industrial energy efficiency improvements through the installation of more efficient equipment, changes in processes and management, reduction of heat losses and/or utilization of residual heat and pressure. energy efficiency measures based on energy audit report, energy-efficient motors, variable frequency drives for compressors, pumps, and fan systems, high energy-efficient boilers	Minimum energy consumption reduction of 20% from baseline (before project implementation)

Level 1: Category	Level 2: Sector	Level 2: Subsector	GCEA2 Code	Examples	Threshold
2. Energy efficiency		2.1.2 Installation of CHP equipment / co- or tri-generation equipment	35.11.1 35.30.5	Installation and operation of co-generation and combined-cycle plants that generate electricity in addition to providing heating; CHP plant, combined-cycle power plants	Minimum energy consumption reduction of 20% from baseline (before project implementation)
		2.1.3 Energy efficiency in energy generation, transmission and distribution systems	27.11.00	Upgrading transmission lines or building new substations and/or distribution systems to reduce energy consumption and/or technical losses, including increasing grid stability/reliability; smart grids; high voltage networks	Minimum reduction of electricity losses by 20% compared to the baseline (before the project implementation)[1]
		2.1.4. Central heating	25.21.0 33.11.2	Modernization of district heating systems using small (distributed) generation stations or other technologies. Small (distributed) generation station	Minimum energy consumption reduction of 20% from baseline (before project implementation)
	2.2 Energy efficiency improvements in the utility sector and public services	2.2.1 Energy-efficient lighting or equipment	43.21.9	Energy efficiency improvement in utilities and public services through the installation of more efficient lighting or equipment; LED street lighting system, lighting improvements of commercial, retail, wholesale, office buildings and other non-industry facilities	Reduction of energy costs by 45%
		2.2.2 Energy efficient products (end user)	27.51.1 27.51.2 27.90.9 (for manufacturers), any GCEA code (for legal entities buyers), for physical persons (GCEA codes are not applicable)	Production or purchase and use of more energy efficient products; energy-saving refrigerators, washing machines, heaters, and other electrical energy-consuming devices (in accordance with the increased class of product labeling)	Highest energy efficiency class for a product type, including energy labeling according to national or international best practice, as well as the international energy efficiency rating of consumer products Energy Star
		2.2.3 Energy conservation services	33.20.0	Energy conservation services for energy end users, including industries, buildings, and transport systems, including energy audit, energy audits of energy service companies, contract energy management	In accordance with ST RK ISO 50001 "Energy management systems. Requirements and guidance for use" or internationally recognized similar standards

Level 1: Category	Level 2: Sector	Level 2: Subsector	GCEA2 Code	Examples	Threshold
2. Energy efficiency	2.3 Energy efficient buildings, constructions and installations	2.3.1 Energy efficient building construction	33.20.0 41.10.0 41.20.1 41.20.2 41.20.3 41.20.4 43.29.8 43.32.0	ENERGY: Use of energy efficient architectural designs, appliances, and equipment as well as construction technologies that reduce energy consumption in buildings	Presence of the following green building ratings: LEED, EDGE, BREEAM, DGNB, and/or Energy Efficiency Label (High Energy Efficiency Class))
		2.3.2 Improving efficiency in existing commercial, public, residential, and industrial buildings	33.20.0 41.10.041.20.1 41.20.2 41.20.3 41.20.4 43.29.8 43.32.0 36.00.0 37.00.0	ENERGY: Lighting, appliances and equipment, heating/cooling systems, architectural, or construction changes that enable reduction of energy consumption WATER: plumbing fittings, rainwater recirculation/collection systems, changes in building construction that enable reduction of water consumption	
3. Green buildings	3.1 Green buildings	3.1.1 Construction of new green buildings (commercial, public, industrial, and residential)	33.20.0 41.10.0 41.20.1 41.20.2 41.20.3 41.20.4 43.29.8 43.32.0 36.00.0 37.00.0	ENERGY: Use of highly efficient architectural designs, energy efficiency appliances and equipment, and construction methods that reduce building's energy consumption, by exceeding existing standards and meeting high energy efficiency certification or rating schemes. WATER: The use of water-saving fixtures and fittings and construction techniques that reduce building water consumption by exceeding existing standards and meeting water-saving certifications or ratings schemes. MATERIALS: Use of construction material which minimizes the number of components that require high amount of energy to manufacture, such as steel or cement, or components that use recyclable/ recycled materials.	Presence of the following green building ratings: LEED, EDGE, BREEAM, DGNB, energy rating labels such as the US Energy Star, and compliance with energy labeling schemes such as the Energy Performance Certifications used in the EU

Level 1: Category	Level 2: Sector	Level 2: Subsector	GCEA2 Code	Examples	Threshold
3. Green buildings	3.2 Associated systems and building materials	3.2.1 Production and application of systems, green building materials, and products	23.14.0 23.31.0 23.32.0 23.65.0 23.99.2 23.99.3 33.20.0 41.10.0 41.20.1 41.20.2 41.20.3 41.20.4 43.29.8 43.32.0	Efficient and low carbon building systems (lighting, heating, air conditioning, lifts, escalators, metering, ground source heat pumps, and so on) and low energy efficiency materials, organic wool insulation materials	Presence of the following green building ratings: LEED, EDGE, BREEAM, DGNB, and/or Energy Efficiency Label (High Energy Efficiency Class)
	3.3 Green infrastructure	3.3.1 Green infrastructure	42.11.1 81.30.0	Multipurpose green areas (water retention, shading, recreation, biodiversity corridors, padded walking and cycling paths); flood protection (surge fences, pumping stations, dams, gates); street lighting; improvement of waste collection areas at buildings	Presence of the following green building ratings: LEED, EDGE, BREEAM, DGNB, and/or Energy Efficiency Label (High Energy Efficiency Class)
		3.3.2 Construction and modernization of private residential buildings and adjacent territories	35.11.5 35.22.0 36.00.0 37.00.0 38.11.0 38.21.0 38.32.3 41.20.1 43.21.1 43.21.9 43.22.0 43.29.1 43.2z9.8 43.31.0 43.32.0 43.33.0 43.34.0 43.91.0 43.99.9	Construction of new energy efficient and green houses. Modernization of existing houses; improvement of sanitary conditions (septic tank, waste disposal); electricity supply; the use of alternative fuels; use of heat pumps or connecting to central heating; energy storage, rainwater harvesting; processing of gray and black water	Reducing water consumption by at least 15%; the use of renewable energy sources; the minimum reduction in energy consumption is not less than 15%; energy efficiency labeling (high energy efficiency class) (if applicable)

Level 1: Category	Level 2: Sector	Level 2: Subsector	GCEA2 Code	Examples	Threshold
3. Green buildings		3.3.3 Self-contained and eco-sanitation toilet solutions for private houses, tourist camps and small businesses	37.00.0	Installation of self-contained and eco-sanitation toilets that contributes to soil pollution reduction. Composting toilets, container-based toilets, dry toilets, septic systems, urine-diverting dry toilet	100% of waste is utilized without damaging ecosystems, water reuse
4. Pollution prevention and control	4.1 Air quality	4.1.1 Air purification from industrial pollution and urban air pollution, recirculation equipment	28.11.2 28.13.1 28.13.2 33.12.2 43.29.8	Treatment facilities for industrial air pollution and urban air pollution, exhaust gases; equipment for reducing industrial waste; air recirculation equipment; desulfurization and denitrification, use of filter bags, exhaust gas burners	Air emissions are within the BAT Associated Emission Levels set in BREFs, including under the Industrial Emissions Directive (applicable to industrial pollution)
		4.1.2 Production and deployment of clean heating appliances for households and small and medium-sized enterprises (SMEs)	27.52.0 28.21.1 43.33.0	Production, purchase, and deployment of clean heating appliances to reduce air pollution. electric radiator (space heater), electric cartridge heater, night storage heater, electric floor heating, heat wall	Minimum 20% GHG emission reduction
		4.1.3 Carbon capture and storage	39.00.0	Devices and products for carbon capture and storage	Compliance with BAT directory (BREF) for emissions during storage under Integrated Pollution Prevention and Control, July 2006, in terms of waste management and material use
	4.2 Soil	4.2.1 Soil pollution reduction; remediation facilities and infrastructure	01.11.1 to 01.30.0 28.30.4 39.00.0 43.12.3	Equipment and infrastructure that use technologies and products to restore soil from pollution and degradation, improve soil fertility; sustainable agriculture, transition to sustainable farming systems, including organic farming systems; application of phyto-meliorative and mechanical methods of soil protection; application of zero and sparing technologies in tillage; cultivation of locally adapted crops and varieties; purification from man-made and anthropogenic pollution	No limit

Level 1: Category	Level 2: Sector	Level 2: Subsector	GCEA2 Code	Examples	Threshold
5. Sustainable water and waste use	5.1 Sustainable water use and water conservation	5.1.1 Production, purchase and deployment of water saving, storage, and distribution technologies and systems	01.61.2 36.00.0 37.00.0 42.21.2	Production, acquisition and installation of technologies and systems for water conservation, storage, and distribution; technologies and equipment for drinking water treatment; groundwater reservoirs for collecting snowmelt or floods, as well as for regulating the water level in the river; use of mine and quarry water for industrial, agricultural, recreational, or other uses; industrial water-saving technologies and measuring equipment; agricultural water-saving irrigation; rainwater collection systems; groundwater recharge systems; channels and distribution systems; stormwater management, water circulation systems	Reduction of consumption of fresh (natural) water not less than 40% for household and drinking needs, 30% for irrigation and 70% for industrial and technical needs
		5.1.2 Monitoring and early warning and response systems at water bodies	26.51.7 84.25.0	Monitoring, early warning systems for storms, droughts, floods, or dam failures; processes for monitoring and measuring water quality or quantity; intelligent networks for water monitoring	SMART (self-monitoring, analysis and reporting technology), automated monitoring system
		5.1.3 Water treatment facilities (installations)	36.00.0	Equipment or infrastructure for water use; water treatment systems; desalination plants	Drinking water: The water must comply with the sanitary requirements/regulations in force at the time of the Taxonomy Threshold Assessment. Process water: water must comply with equipment certificates
		5.1.4 Wastewater treatment plants for further reuse	37.00.0	Wastewater treatment equipment; wastewater treatment plants; mine and quarry water treatment, sewerage/drainage networks with separation of storm water from other wastewater, systems for reuse and recirculation of domestic and industrial wastewater; closed loop use	Application of treated water for intended use for secondary water use
	5.2 Waste and wastewater	5.2.1 Equipment for collecting and sorting municipal waste	28.12.0 28.22.2 28.22.3 28.22.5 28.22.9 38.11.0	Equipment for collection and sorting of municipal waste, including receiving points for secondary raw materials	Municipal waste must be collected separately and secondary raw materials sent for recycling

Level 1: Category	Level 2: Sector	Level 2: Subsector	GCEA2 Code	Examples	Threshold
5. Sustainable water and waste use		5.2.3 Disposal and recycling of waste, equipment for recovery, reuse and recycling of secondary raw materials	28.22.9 33.12.2 33.20.0 38.32.1 38.32.2 38.32.3	Creation of ecological infrastructure for the municipal solid waste, recycling and reuse infrastructure for the waste generated during the construction and repair of buildings, facilities, and infrastructure facilities. Equipment for recovery of secondary raw materials (excluding incineration), reuse and recycling of secondary raw materials, including equipment for processing construction materials, scrap metal, plastics, glass, paper, electronics (excluding hazardous components), used tires	Recycling of collected secondary raw materials not less than 80%
		5.2.4 Facilities for collection, sorting, recovery, reuse, recycling and disposal of industrial and hazardous waste	28.22.9 28.95.0 28.96.0 33.20.0 38.12.0 38.22.0	Equipment for collection, sorting, recovery, reuse, recycling, and disposal of industrial and hazardous waste	Compliance with BAT directory (BREF) for waste treatment in terms of waste management and by-products, especially hazardous industrial waste
		5.2.5 Construction and modernization of landfills and plants for the processing of waste prohibited for burial	38.21.0 38.22.0	Construction and modernization of landfills; construction of plants for the processing of waste prohibited for disposal	Compliance with the established requirements and norms of Kazakhstan, in force at the time of the assessment of compliance with the Taxonomy threshold (until 2030)
		5.2.6 Equipment and machinery for composting of waste	28.15.2 28.22.3 28.22.9 38.21.0	Equipment and machinery for the production of compost from organic waste	The resulting compost is used to fertilize the soil. No plastic, glass, and metal in the finished compost. Compost compliance with national standards for biofertilizers
		5.2.7. Wastewater treatment plant	37.00.0	Wastewater collection, storage, treatment, and disposal networks; sewage treatment plants; sludge treatment facilities; drinking water purification equipment; desalination plants; sewage treatment plant for manure and slurry	Emissions to air and water are within the BAT-AELs level of associated emissions, set in then BAT (BREF) for anaerobic waste treatment (if applicable)

Level 1: Category	Level 2: Sector	Level 2: Subsector	GCEA2 Code	Examples	Threshold
5. Sustainable water and waste use	5.3 Resource conservation and recovery	5.3.1 Replacement of raw materials	39.00.0	Replacement of toxic raw materials with non-toxic ones	No limit
		5.3.2 Use of secondary raw materials for production	38.11.0 38.32.1 38.32.2 38.32.3	Replacement of natural resources with secondary raw materials, production using secondary raw materials	At least 30% of secondary raw materials in the product
6. Sustainable agriculture, land use, forestry, biodiversity conservation, and ecotourism	6.1. Sustainable agriculture	6.1.1 Organic agriculture products (plant growing and animal husbandry) (except textile)	01.11.1 to 01.64.0	Production of agricultural, agricultural and fish organic products (including construction and operation of facilities), that meet clean production standards	Relevant international, interstate, or national standards for organic products as well as labeling of purchased organic or green products Environmental and quality standards for the use of pesticides, fertilizers, veterinary drugs, feed and food additives, and animal hygiene Sustainable farming practices such as waste management and water use efficiency, including rainwater use; sustainable supply chain methods (for example, preventing food loss); production of organic products that have received an international, interstate or recognized national certificate
		6.1.2 Climate smart agriculture (=Sustainable pasture & livestock management)	01.41.0 to 01.64.0	Reduction in energy use and water use in traction, irrigation, and other agricultural or husbandry processes, and decrease in land use, that is, application of livestock standards to sustainably managed pastureland and to promote quality (high yield) based livestock production/management; efficient tillage (prevention from drought), aquaculture, herders/herding communities reducing their herd sizes and adopt more sustainable livestock production practices	Reduction of consumption of fresh (natural) water by at least 30%; reuse of water; the use of renewable energy sources; minimum reduction in energy consumption of at least 20%
	6.2 Sustainable forest management & conservation of biodiversity and ecosystems	6.2.1 Afforestation and reforestation	02.10.0	Planting of forest crops; creation of forest plantations, including projects that meet the standards of REDD+ or other international standard; creation of green zones around settlements	No limit

Level 1: Category	Level 2: Sector	Level 2: Subsector	GCEA2 Code	Examples	Threshold
6. Sustainable agriculture, land use, forestry, biodiversity conservation, and ecotourism		6.2.2 Sustainable forest management	02.40.0 71.12.4 71.12.5	Projects that increase the carbon sequestration function of forests or reduce the impact of forestry activity through the relevant sustainable management practices of forest ecosystem, information systems and technologies	No limit
		6.2.3 Conservation of biodiversity and ecosystems	91.04.2 93.19.0	Projects for the conservation of biosphere through the protection and / or restoration of degraded ecosystems; creation and maintenance of an ecological functional area such as specific wildlife habitat, wetlands, peatlands, deserts	No limit
	6.3 Sustainable tourism	6.3.1 Products and services promoting eco-tourism development	41.10.0 to 43.99.9 64.19.1 64.19.2 64.19.3 64.19.9 64.20.0 64.92.2 64.92.9 64.99.1 84.13.0 85.10.0 to 85.60.9 88.99.0	Creation of conditions aimed at the development of eco-tourism, involvement of the local population (micro-credit programs, subsidies), eco-education, creation of infrastructure for eco-tourism	Compliance with the legislative norms of Kazakhstan (on tourism activities) as well as the presence of a national, international, interstate ecological standards or ecolabel in the field of tourism services and environmentally friendly routes, including recognized ecolabels of a foreign state
		6.3.2 Sustainable hotel and camp management	55.10.1 55.10.2 55.10.3 55.10.4 55.20.0 55.30.1 55.30.2 55.90.1	Managing hotel and camp activities in accordance with national or international sustainable hospitality standards	Compliance with the national, international, interstate ecological standards or ecolabel in the field of accommodation services and ecological requirements for the hotels, hostels, or a recognized ecolabel of a foreign country for the hotel sector, for example, Leaf of Life, EU Eco-labeling, Nordic Swan, and so on
7. Clean transport	7.1 Low carbon vehicles	7.1.1 Low carbon vehicles purchase	Any GCEA code (any type of company activity)	Low carbon vehicles purchase, including electric vehicles, hydrogen vehicles, hybrid vehicles	<90 g CO_2e/km
		7.1.2 Low carbon vehicles manufacturing supply chain facilities	27.20.0 27.90.9 29.10.2 29.31.0	Dedicated manufacturing facility for vehicles and key components; batteries used in the respective vehicles	<90 g of CO_2/km

Level 1: Category	Level 2: Sector	Level 2: Subsector	GCEA2 Code	Examples	Threshold
7. Clean transport	7.2 Low carbon freight and cargo transportation	7.2.1 Low carbon freight and cargo transportation	30.20.0 49.20.0 49.41.0	Rolling stock for electrified and non-electrified rail freight	For road transport 100 g CO_2e/ton * km; for rail transport–40 g CO_2e/ton * km
	7.3 Clean transport infrastructure	7.3.1 Public transport infrastructure	30.91.0 30.92.1 42.11.1 42.13.0 42.99.0 49.31.1 49.31.2 49.31.3 49.31.3 49.39.0 72.19.1	Public transport and transport infrastructure; bus rapid transit (BRT) systems; public cycling infrastructure	For public transport 50 g of CO_2e/passenger-km; no restrictions for cycling infrastructure
		7.3.2 Low carbon transport infrastructure	42.11.1 to 42.13.0 42.99.0 45.20.2	Dedicated charging and alternative fuel infrastructure (when separate from fossil fuel filling stations and garages); eco-fuel station, charging station/pile for electric cars, trolleybus, tram bus, electric buses, and associated infrastructure	No limit
		7.3.3 Low carbon transport planning	49.31.1 to 49.32.0	Integration of transport and urban development planning leading to a reduction in use of passenger cars; dense development; multiple land use; walking communities; transit connectivity; smart freight logistics	No limit
	7.4 Clean transportation ICT	7.4.1 ICT that improves asset utilization, flow, and modal shift, regardless of transport mode	62.02.1 62.02.2 62.03.1 62.03.2 62.09.1 to 63.99.9	Public transport information, car-sharing schemes, smart cards, road charging systems, and so on.	Availability of a certificate of compliance with the ST RK ISO/IEC 30134 series of standards: Information technology. Data processing centers. Key performance indicators; ST RK ISO 14001: Environmental management systems. Requirements and guidance for use; and ST RK ISO 50001: Energy management systems. Requirements and guidance for use

Source: Decree of the Government of Kazakhstan dated December 31, 2021, No. 996 titled 'Approval of the classification (taxonomy) of "green" projects, subject to financing through "green" bonds and "green" credits'.

Note: [1] In the absence of a national guide to the BAT, reference should be made to the BREF, which stands for "BAT Reference Document." [2] The codes of the GCEA corresponding to a specific subsector of activities and assets are provided to simplify the application of the green taxonomy by organizations whose activities provide for the classification of economic activities. Note that one GCEA code may contain many types of goods, services, and works, not all of which are included in this taxonomy, and compliance with the threshold values established in it, if any, is a condition for classifying projects as 'green'. The specified classification of GCEA is applicable to manufacturers of goods, works, and services and does not apply to individuals and legal entities purchasing the relevant goods, works, and services.

Guidance Note on Uzbekistan Green Taxonomy

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