Thailand Taxonomy Phase 1

Additional FAQs

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Table of contents

Technical criteria related to the energy sector	3
Technical criteria related to the transport sector	8
Issues related to the Do No Significant Harm (DNSH) and the Minimum Social Safeguards	
(MSS).	10
Issues related to the implementation of Thailand Taxonomy	12

Technical criteria related to the energy sector

Scope of activities in the energy sector

1. How are the terms "Operation", "Construction and operation", and "Retrofitting" different?

"Operation" refers to the process of enabling an activity to function on an ongoing basis. This includes improvement works or maintenance. For example, Activity Article 4.2.1. Transport via railways.

"Construction and operation" refers to investment or installation, as well as enabling the activity to function on an ongoing basis. For example, Activity Article 4.1.1. Solar energy generation.

"Retrofitting" refers to the process of enhancing the efficiency of an activity. For example, Activity Article 4.2.8. Retrofitting of sea and coastal freight and passenger water transport.

2. Does the scope of Thailand Taxonomy include activities related to the oil and gas sector?

Yes, the scope of Thailand Taxonomy does include fossil fuel-based oil and gas activities. These activities are classified as non-compliant with the environmental objectives of the taxonomy and are considered red activities (see Section 4.3. Red list of activities, Table 16: List of activities not in compliance with the present taxonomy - page 71).

3. What types of activities are considered support for fossil fuel-based infrastructure?

Support for fossil fuel-based infrastructure refers to activities related to the extraction, transportation, and utilization of fossil fuels, such as installing solar panels within a fossil fuel-based power plant or at a gas or petrol station.

4. What color category would the installation of Carbon Capture & Storage (CCS) or Carbon Capture, Utilization & Storage (CCUS) extensions fall under in the following cases?

- 4.1 Installation of CCS or CCUS extensions at an oil refinery or power plant
- 4.2 If the oil refinery or power plant is in transition toward becoming a green activity and requires the installation of new technologies such as CCS or CCUS

In principle, if an activity qualifies as green but is intended to support a red activity or to prolong the use of fossil fuels, the activity will instead be classified as red. Therefore, the installation of CCS/CCUS at oil refineries is classified as a red activity, while the installation of CCS/CCUS at power plants is subject to different criteria depending on the energy source. Further information on the classification criteria for CCS/CCUS activities can be found in the draft of Thailand Taxonomy Phase 2 under the manufacturing sector.

Solar energy generation

5. What color category applies to the installation of solar rooftops in the following locations?

- Oil refinery
- Oil rig
- Office buildings of oil production companies
- Manufacturing facilities where fossil fuels are the primary energy source

The installation of solar rooftops that support fossil fuel-based activities or infrastructure, such as oil refineries and oil rigs, is classified as a red activity. However, the installation of solar rooftops on office buildings of oil production companies and on other types of manufacturing facilities are considered a green activity.

6. Is the installation of solar rooftops at petrol stations, where the stations use the generated electricity, considered a green activity?

No, such cases are classified as red activities. In principle, the installation of solar rooftops is considered red if it is done to support infrastructure associated with (1) vehicles and transportation that use fossil fuels, (2) the storage of fossil fuels, or (3) fossil fuel refueling stations and their parking areas, as these are considered non-compliant with the greenhouse gas (GHG) emission reduction objective of Thailand Taxonomy.

7. Is the installation of solar rooftops at petrol stations considered a green activity if the generated electricity is used by a convenience store located within the station, with a separate electricity meter for the store?

Yes, this case is classified as a green activity.

8. Is the installation of solar rooftops at petrol stations or on oil rigs considered a green activity if the electricity is sold back to the power grid?

No, this case is classified as a red activity.

Hydropower generation

9. "Amber criteria: Retrofitting that improves either power density or decreases emission intensity of the existing hydropower plant by at least 15% is eligible." How is this information evaluated, and how should the comparison of power density or emission intensity before and after retrofitting be made?

The assessment can be conducted by comparing the current energy efficiency report of the power plant with the projected energy efficiency report after retrofitting. For example, if the hydropower plant has a certain GHG emission intensity before the retrofit, then afterward, the intensity should be reduced by at least 15% (which qualifies under the amber category). You may refer to further details or consult with the Ministry of Energy and Thailand Greenhouse Gas Management Organization (Public Organization) (TGO) regarding the evaluation of power density and GHG emissions.

10. "Green criteria: A hydropower facility can credibly demonstrate that the pumped storage will not be charged with an off-peak grid intensity that is higher than the intensity of the electricity that it will displace when it is discharged." Who is responsible for preparing this data?

In general, the power plant project owner should be responsible for collecting this data.

Bioenergy generation and production

11. Can wood be used as a raw material for bioenergy production? Does it need to comply with the Forest Stewardship Council (FSC)?

Wood can be used if it is part of "agricultural waste" and follows the guidance of at least one of the recognized organizations listed in Section 4.1.5., which includes the FSC. However, wood from trees that are planted specifically for electricity generation is not eligible, as wood sourced from intentionally harvested trees for fuel violates the "Do No Significant Harm (DNSH)" principle and will be classified as a red activity.

12. Does the Life Cycle Assessment (LCA) for bioenergy activity consider the source of raw materials? How should the assessment be conducted, and where can reference information be found?

The LCA for bioenergy activities must include consideration of the source of raw materials. The assessment can refer to the LCA guidelines or similar evaluation frameworks, either from Thailand or international standards, such as <u>ISO 14040</u> and <u>ISO 14044</u>. You may also consult the <u>TGO</u> for further details and guidance.

Energy production from natural gas

13. What documents should be used as a reference for new power plants, and do those constructed from 2024 onward follow the green criteria in Table 11?

A "new power plant" refers to a project that receives a construction permit after 31 December 2023. According to the thresholds and criteria, any power plant permitted after this date and therefore defined as a "new power plant", will be classified as a red activity.

14. If a power plant project has already secured a Power Purchase Agreement (PPA), is it necessary to begin operations before 2024?

If the project secured a PPA before 1 January 2024, it will be classified as an existing power plant, even if construction is completed after 1 January 2024.

Production of heating and cooling using waste heat

15. Does the activity of producing heating and cooling from waste heat refer only to heat generated by power plants? Can waste heat also originate from other industrial facilities?

Waste heat refers to residual heat that is a byproduct of production processes. It can originate from power plants or from other industrial facilities.

Electricity generation from renewable non-fossil gaseous and liquid fuels, including green hydrogen

16. Is hydrogen production in an industrial facility, where hydrogen is sold to members within an industrial estate, considered a green activity?

Such hydrogen production activity is not currently within the scope of Thailand Taxonomy Phase 1. However, if hydrogen is used for energy generation, please refer to the classification criteria outlined in Activity Article 4.1.8. Electricity generation from renewable non-fossil gaseous and liquid fuels, including green hydrogen.

Transmission and distribution of electricity

17. How will a power plant connected to a transmission line that supplies both green and red activities be classified?

The classification of such a power plant will primarily be determined based on the type of power plant, as outlined in Activity Articles 4.1.1. to 4.1.9. in Chapter 4. Meanwhile, the transmission and distribution of electricity will be evaluated separately under its own criteria, as specified in Activity Article 4.1.15.

Technical criteria related to the transport sector

1. Railway and non-railway transport, and water transport: Do these activities qualify as green only if they are new projects?

No. Both new projects and retrofitted existing projects may qualify as green, provided that the technology used meets the GHG emission thresholds specified in Table 15: Transportation sector activities criteria and thresholds.

2. Transport via railways: Can loans provided to customers for the construction of a new electric railway line or for the purchase of electric trains, whether for new or existing lines, qualify as green loans under the Taxonomy?

Yes, in two cases:

- Construction of a new electric railway line: Loans will fall under the green criteria of Activity Article 4.2.5. Enabling infrastructure for low-emission transport, as the loan is used in the construction phase for zero tailpipe emission trains.
- Purchase of electric trains: Loans will fall under the green criteria of Activity Article
 4.2.1. Transport via railways.

3. Other passenger land transport: Can a vehicle be classified as green if it does not directly emit carbon dioxide but emits other gases, such as sulfur dioxide or carbon monoxide?

To be classified as a green activity, the vehicle must not directly emit carbon dioxide and must also meet the DNSH criteria, such as compliance with the environmental objective on pollution prevention and control, as well as the Minimum Social Safeguards (MSS).

4. Urban and suburban passenger land transport: What is the meaning and difference between the terms "scheduled passenger road transport" and "scheduled passenger urban suburban rail transport"?

The term "scheduled passenger road transport" is used for road-based transport services, while "scheduled passenger urban suburban rail transport" is used for rail-based services.

5. Freight transport by road: Which vehicles qualify under the amber criteria denoted as "if a vehicle fits into 15% best available in Thailand (in its weight class) in terms of GHG emissions per tkm" and which document can be referred to for reference?

The Office of Transport and Traffic Policy and Planning (OTP) under the Ministry of Transport is currently in the process of developing the relevant data.

Issues related to the Do No Significant Harm (DNSH) and the Minimum Social Safeguards (MSS).

1. How should the assessment and verification in accordance with the DNSH and MSS principles be conducted?

In general, the assessment of whether an activity is aligned with the DNSH principle considers: (1) General requirements including (1.1) an assessment of potential risks to other environmental objectives and (1.2) measures to manage and mitigate those risks until they no longer cause significant adverse impacts, and (2) Specific requirements for certain activities to ensure that assessments under the Taxonomy remain robust. For example, land transport activities should consider their impact on the environmental objective of pollution prevention and control, with reference to international or domestic standards such as ISO 362 for measuring noise levels from vehicle acceleration on roads.

If an activity is found to be non-compliant with the DNSH principle, the owner of the activity may submit a remediation plan and is required to mitigate the adverse impacts within a grace period of three years. During this period, the activity will be considered as having limited compliance with the Taxonomy. If the activity owner successfully addresses the impacts within the three-year timeframe as outlined in the remediation plan, the activity may retain its original classification. However, if no remediation plan is submitted, or if the plan is not fulfilled within the grace period, the activity will be reclassified as red immediately.

For the assessment of compliance with the MSS principle, the owner of the activity must act in accordance with Thailand's legal and policy frameworks, as well as internationally accepted principles and standards, supported by relevant social management systems. MSS compliance must be assessed at the organizational level (not at the individual activity level). Unlike DNSH, MSS compliance does not allow for a grace period, meaning the activity owner must maintain ongoing compliance throughout the entire lifecycle of the activity.

2. Will Thailand Taxonomy include additional DNSH and MSS criteria to provide a consistent standard for financial institutions when assessing the same activity, thereby reducing the cost of developing separate internal criteria?

Currently, the working group has no plan to add further DNSH and MSS criteria. Based on research findings and consultant recommendations, defining these requirements in a strict rulebased format, as done in the EU Taxonomy, may pose challenges and place unnecessary burdens on financial institutions and businesses. The European Union is also reviewing its own rules to improve practicality and ease of implementation.

3. According to the procedures and recommendations outlined in the Business Guide, how should businesses prepare assessment reports for work or target groups related to their activities?

The owner of the activity should collect, summarize, and disclose all necessary information that demonstrates alignment with Thailand Taxonomy. This generally includes information regarding: (1) an indication of which color category the activity or project qualifies under, and (2) an assessment of compliance with the DNSH and MSS principles. Additionally, in the case of debt instrument issuance, compliance with the Green Bond framework must also be considered. The reporting frequency should be determined based on the intended purpose of use; for example, once annually in the case of annual reports.

4. Will there be a requirement for an external party to verify or review whether and how a company's activities comply with the DNSH and MSS principles?

Thailand Taxonomy does not require third-party verification. Activity owners may submit relevant documents to demonstrate compliance with the DNSH and MSS principles.

5. What are the procedures for verifying compliance with the criteria on improving efficiency of use, repair, recycling, and reuse of materials during the activity's operational life cycle?

Activity owners may refer to standards on sustainable resource use and transition to a circular economy, such as ISO 14040 and ISO 14044 (or other equivalent international methods), for the assessment of the life cycle of products, materials, processes, or other measurable activities. Alternatively, they may conduct self-assessments and report their performance on improving efficiency of use, reduction, repair, recycling, and reuse of materials during the activity's operational life cycle.

Issues related to the implementation of Thailand Taxonomy

1. Who is Thailand Taxonomy applicable to; for example, lenders, borrowers, or businesses?

Thailand Taxonomy does not have legal enforcement. Taxonomy users may voluntarily adopt it as a reference. Examples of its implementation include businesses using it to support operational disclosures, financial institutions using it to design financial products, and government agencies referencing it in policymaking.

2. What is the scope of application and reporting requirements with respect to compliance with Thailand Taxonomy in the following cases?

- Which types of loans are covered, such as loans denominated in Thai Baht or foreign currencies?
- Which borrowers are covered, such as borrowers residing in Thailand or abroad?
- Which activities or projects are covered, such as activities or projects based in Thailand or abroad?

Thailand Taxonomy serves as a reference for classifying and grouping environmentally friendly economic activities in Thailand. It is available for voluntary adoption by all sectors and is not legally binding for financial institutions. Its adoption depends on the readiness of each financial institution. Financial institutions may use the Taxonomy to classify activities that contribute to GHG emission reduction goals, covering both loans denominated in Thai Baht and foreign currencies, as well as financing for projects based either within Thailand or overseas. Currently, there are 23 activities in the energy and transport sectors included under Thailand Taxonomy. The development of Phase 2 is underway, which will expand coverage to include the agriculture sector, the buildings and real estate sector, the manufacturing sector, and the waste management sector.

3. In reporting or disclosure, how should activities be referred to ISIC 4, and what should be done if there is no ISIC code available for a particular activity?

Taxonomy users may refer to Table 10: Table of sub-sectors and activities of Thailand Taxonomy (Phase 1) or the Excel Tool: Activities thresholds and criteria, published on the websites of agencies involved in the working group (such as the <u>Bank of Thailand (BOT)</u> and the <u>Securities</u> and <u>Exchange Commission (SEC)</u>). In cases where a specific ISIC code cannot be identified for an activity in Thailand Taxonomy, users may refer to the relevant ISIC division-level code.

4. What indicators can be used when disclosing that a company's activities are aligned with Thailand Taxonomy?

Taxonomy users may disclose information based on the proportions of revenue, Capex, and Opex, to reflect how the company's activities align with Thailand Taxonomy.

5. How should assessment specialists interpret each detailed criterion when assessing whether an activity is aligned with Thailand Taxonomy?

The steps for assessing alignment with Thailand Taxonomy are as follows: (1) determine whether the activity or project falls under the green, amber, or red categories, based on the conditions and technical screening criteria specified for each activity in Chapter 4, and (2) assess compliance with the DNSH and MSS principles. Users can refer to the Usability Guideline for Thailand Taxonomy available on the websites of the <u>BOT</u> and the <u>SEC</u>.

6. Is it necessary for the technologies used for GHG reduction to be certified by an international standard or organization?

Taxonomy users should refer to the specific requirements each activity. Some activities require additional international certification standards. For example, bioenergy production activity may require certification by the Roundtable on Sustainable Biomaterials (RSB).

7. For activities that only have green criteria (without corresponding amber or red criteria), if an activity does not meet the green criteria, will it be classified as "Unclassified"? For example, Activity Article 4.1.12. Heating and cooling distribution.

Activities that only have green criteria and no amber or red criteria are considered activities that do not cause significant environmental harm. Therefore, if such activities do not meet the green criteria, they will be classified as "Unclassified" or "Out of Scope."

However, taxonomy users must also assess the activity against the DNSH and MSS principles. If the activity fails to meet either the DNSH or MSS requirements, it will instead be classified as red. 8. If a company conducts both green and non-green activities and wants to apply a Green Loan or issue a Green Bond by restricting the use of proceeds exclusively to green activities, can it report the transaction as a Green Loan or Green Bond? What conditions must be met for such reporting?

If a company applies for a Green Loan or issues a Green Bond, and the use of proceeds is explicitly designated and controlled for green activities only, the company may report the transaction as a Green Loan or Green Bond, provided that it complies with the agreed-upon terms and conditions for green financing.

9. How can financial institutions calculate the targets they are responsible for based on the reference tables in Thailand Taxonomy (Tables 11 and 15), given that the size of the energy and transport sector portfolios varies across financial institutions?

Financial institutions may calculate their GHG emissions reduction targets and develop transition plans for each sector as appropriate. They may refer to current international standards, such as the Science Based Targets initiative (SBTi) and the Net-Zero Banking Alliance (NZBA).

The BOT encourages domestic systemically important banks (DSIBs) to develop environmental transition plans focusing on the management of GHG emissions from their business operations for at least one priority sector by 2025. Meanwhile, the SEC requires companies listed on the SET and MAI to disclose environmental targets and action plans in accordance with the International Financial Reporting Standards (IFRS) S1 and S2, starting from 2026.

10. What should financial institutions do if customers do not have the necessary information for assessing the progress of activities based on the conditions and indicators under Thailand Taxonomy?

In the case of new loans, financial institutions may establish requirements and conditions for customers to provide the necessary data for assessment and progress monitoring.

For existing loans, financial institutions should review the customer's activity status during loan review cycles and may request additional information from customers. In cases where customers request credit limit increases or loan renewals, financial institutions may consider adding conditions requiring customers to disclose GHG emissions data and other relevant information in line with Thailand Taxonomy.

11. Should the classification of an activity's color status be conducted only once at the time of initial loan approval, and is it necessary to revalidate the information over time?

Financial institutions should review the customer's information throughout the loan period to ensure that the activity's status remains consistent, particularly if there are changes in the activity's indicators over time. However, the review approach may vary depending on the internal policies of each financial institution.

12. When assessing compliance with Thailand Taxonomy, should financial institutions use customer information as of the date the loan application is made, current information, or future projections? Should the information come from customer reporting or estimates?

Financial institutions may consider using information from the loan application date, the most recent available information, or reasonable projections, depending on the availability of customer data and the discretion of the institution. In addition, financial institutions may agree with customers on conditions related to data monitoring and reporting, including specifying the frequency of required updates on taxonomy compliance assessments.

13. Is Thailand Taxonomy related to government policies, such as government subsidies or carbon taxes?

The Department of Climate Change and Environment under the Ministry of Natural Resources and Environment has incorporated Thailand Taxonomy into the draft Climate Change Act. The objective is for government agencies to use the Taxonomy as a reference for developing policies, action plans, GHG reduction measures, and climate change adaptation initiatives, as well as for supporting the implementation of climate change measures, including the use of the Climate Change Fund.

14. Is it true that the BOT prohibits financial institutions from providing loans to energy and transport sector activities classified as red from 2040 onward?

The BOT does not have a policy prohibiting financial institutions from providing loans to activities classified as red. Loan approvals and credit limit reviews remain at the discretion of each financial institution. In addition, Thailand Taxonomy serves as a voluntary reference framework for classifying and grouping environmentally friendly economic activities in Thailand. Financial

institutions may choose to use it as one of the tools to support their credit product design and credit assessment processes.

15. What actions must financial institutions take if some of the activities they finance are assessed as red under Thailand Taxonomy? For example, must financial institutions require customers to implement GHG reduction measures or gradually discontinue lending to red activities?

Thailand Taxonomy serves only as a reference tool for classifying environmentally friendly economic activities to promote a common understanding. It does not impose any prohibitions on undertaking or investing in specific activities. Therefore, lending decisions remain at the discretion of financial institutions, and the BOT does not have a policy prohibiting investment or lending in such activities. However, the BOT encourages domestic systemically important banks (DSIBs) to develop transition plans for at least one priority sector by 2025.

Carbon intensity assessment

16. What are the differences in carbon intensity assessment methods for activities under Thailand Taxonomy between LCA methods and non-LCA methods?

LCA-based GHG emission assessment evaluates the environmental impact of a product or service throughout its entire life cycle, from sourcing raw materials to end-of-life. Activities that require LCA-based assessment typically involve significant Scope 3 emissions, such as bioenergy production and hydrogen energy production. However, for activities with near-zero GHG emissions or activities that primarily involve Scope 1 and Scope 2 emissions, LCA-based assessment is generally not required. Examples include solar energy production and wind energy production.

17. When calculating carbon intensity using the LCA method, is it necessary to use GHG emission data across the entire supply chain, including data from suppliers? What should be done if supplier data are not available?

Yes, LCA-based GHG emission assessment requires data across the entire supply chain, including data from suppliers. However, if assessors do not have all the suppliers' data, they may use proxy data or estimation techniques to fill the data gap. For reference, please see the Technical Guidance for Calculating Scope 3 Emissions under the GHG Protocol.

18. When assessing carbon intensity at the activity level, is it necessary to evaluate GHG emissions across the entire life cycle (life cycle assessment: LCA) of the project, or only during the construction or operational phases?

It depends on the specific requirements of each activity. For example, bioenergy production activities require assessment across both the construction and operational phases. Therefore, taxonomy users must conduct an LCA covering both the construction and operational stages of the project.

19. In practice, how should GHG emissions be assessed for the energy sector? For example, should a power plant operator assess GHG emissions separately for each plant?

If a power plant uses only a single energy source, GHG emissions can be assessed on a plant-by-plant basis. However, if a power plant uses multiple energy sources, GHG emissions must be assessed separately for each activity based on each energy source.

20. How should GHG emissions be calculated according to the conditions specified for each period?

Taxonomy users may calculate GHG emissions using internationally recognized or equivalent standard methodologies, such as the carbon footprint calculation for products certified by TGO or carbon calculation platforms, including the Thai Carbon Footprint Calculator by TGO (link) or other carbon calculation platforms certified by TGO (link).

21. What should a company do if it cannot fully collect the necessary data for GHG emissions assessment?

In the initial stages, the company may consider using proxy data from other companies engaged in similar businesses or industry averages from other countries. However, the company should begin collecting base-year data and projecting future GHG emissions to ensure that the information reflects the current situation as accurately as possible.

22. What should a financial institution do if it cannot obtain data from customers or verify GHG emissions data?

Financial institutions may advise customers to begin collecting data, referencing internationally recognized GHG emissions calculation guidelines or those issued by TGO. They may also encourage customers to conduct preliminary calculations using carbon calculation platforms. In

addition, financial institutions may consider using proxy data from other companies engaged in similar businesses or industry averages from other countries for initial assessments.

Verification / Verifier

23. Is it necessary to have a verifier or third-party verifier to confirm compliance with Thailand Taxonomy? If verification is required, where can verifiers be sourced from?

Thailand Taxonomy does not require third-party verification, and there are currently no officially accredited verifiers specifically for Thailand Taxonomy compliance. However, taxonomy users may consider engaging environmental consulting firms with expertise in environmental assessment.

24. If a financial institution's customer or a bond issuer has already obtained thirdparty verification of compliance with Thailand Taxonomy, is it necessary for the financial institution or investor to conduct a separate verification?

No, it is not necessary. This is subject to the internal policies of the financial institution or at the discretion of the investor.