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The Japan Electrical Manufacturers' Association

1. タクソノミー活用について (Using the Taxonomy)

●タクソノミーは、サステナブルな経済活動であるかどうかの適格性について分類及びその判断基準 (Threshold : 閾値) を提供しようとしているが、TEG レポートの原案は、特定の産業/事業分野の活動について、主に気候変動の「緩和」を中心に評価し、DNSH (Do No Significant Harm) として資源循環等の他の環境側面の影響を考慮する内容。サステナブルの適格性のなかで、環境、特に気候変動に限定 (偏重) したものである (気候変動を中心とした環境側面の Taxonomy)。

EU Taxonomy will be pursuing "classification and the criteria (threshold)" regarding eligibility with sustainability, but current draft of TEG report mainly evaluates "mitigation" of climate change about activities of specific industry/business fields, and considers the influence of other environmental aspects such as transition to a circular economy, etc. as DNSH (Do No Significant Harm). It is limited to (attaching too much importance to) the environment especially climate changes in the eligibility of sustainable (the taxonomy on the environmental aspects).

- サステナブルな経済活動を総合的に判断するものではなく、特定の活動について、環境側面 (主に気候変動「緩和」) に特化した一部を評価した内容に留まるもの (参考事例)。

Therefore, it's not comprehensively judge the sustainability about economic activities. We recognize as reference for limited example – only evaluate a part specified to environmental aspects (mainly "mitigation" of climate change) on specific activities.

●したがって、金融・投資機関の情報開示等にタクソノミーへの適格性が考慮される場合に加えて、企業の事業活動評価にも影響が及ぶ場合もあると考えると ;

Accordingly, it should be consider the cases that it may influence to evaluation of company's business activities (such as industry, commercial service sector and others) in addition to the cases that eligibility for taxonomy is regarded on information disclosure of financial/investment entities;

- TEG レポートは経済活動の内、特定の範囲で一部環境側面を評価した内容である。レポートでカバーされない経済活動や、Sustainable への適格性の評価等、企業自が説明できるなら、それらも適格性のある活動 (事業) として評価されるべき。

TEG report evaluates only a part of environmental aspects within a specific range in economic activities. When the companies can explain economic activities not covered by the TEG report, evaluation for eligibility on sustainability, etc., they should be evaluated as eligible activities (businesses).

- 金融・投資機関による投資のポートフォリオ、企業の事業活動のポートフォリオは多様であり、タクソノミーによる適格性評価等においては、単純な全体投資額あたりや全体売上額あたりの比率等で評価するような運用にならないことを要望したい。

Investment portfolios by financial/investment entities, and also portfolios of company's business

activities are very various (it always adapts to a changing in market). On eligibility evaluation, we request that it not to be facile evaluate with the ratio of total investment amount or total sales, etc., based on this taxonomy.

2. 分類・基準の考え方について (Development of classification and criteria)

(1) バリューチェーン、システム全体の視点の欠落

Lack of entire viewpoint for “value chains” and “systems”

●TEG レポートの原案は、セクター別に、製造時と最終製品・システムの適格性について、その分類・基準が検討されているが、重複も存在する。本来、経済活動は、個々のセクターに閉じるものではなく、原材料の採掘から運搬・加工、仲介する販売やオペレーションの行為といったバリューチェーン全体で連携している。したがって、タクソノミーの検討においても、基本は、当該活動（事業）のバリューチェーン全体を見通して総合的に適格性を評価・判断することが重要である。

Draft of TEG report examines the classification and criteria of manufacturing process, final products and the system about eligibility on each sector, but there are also redundancies. Originally, economic activities are not closed in each sector, and are linked in the whole value chain from mining of raw materials, transportation, processing, intermediate sales and operation. Accordingly, also when examining taxonomy, it is important in principle that the whole value chain of the activities (business) are comprehensively evaluated about eligibility.

●さらに、社会インフラや社会システム全体という視点も必要。例えば、電力の社会インフラは、電力網（グリッド）全体で Sustainable をめざす中で、個々の発電技術、送配電、グリッドコントロール・制御等様々な組み合わせで、S+3E（安全性+安定供給、経済性、環境配慮）を考えている。こうしたシステム全体の適格性の判断が重要である。

The viewpoint of social infrastructure and entire social system is also necessary.

For example, S+3E (Safety + Energy Security, Economy, Environment) with various combinations such as each generation technology, transmission and distribution, grid control, etc. is considered power sector and its grid with "sustainability" as a social infrastructure. It is important to judge eligibility of such entire system.

- 実際、電力やその電力網などの社会インフラは、環境側面だけで評価されるべきではなく、持続可能性の全体的なコンセプトの中で、安定供給、効率的な運用、さらに災害に対する回復力などが考慮されるべき。今後、気候変動と環境の評価に限らず、さらに、Sustainability の包括的な評価がなされることを期待するが、例えば、ISO / TC 268 / SC1 スマートコミュニティインフラストラクチャは、持続可能な都市とそのインフラストラクチャに関する要求とガイダンスについて、以下の国際規格を開発している。これらは、更なる議論と開発プロセスのための有用な提案である。

Actually, the social infrastructure such as power and power grid should not be evaluated only by the environmental aspects. In the entire concept of sustainability, energy security, effective operation and recuperative power against disasters should be considered. After this, we expect that "sustainability" is comprehensively evaluated, not limited to evaluations of climate change and the environment. For example, ISO/TC268/SC1 smart community infrastructure developed the following international standard on the demand and guidance for sustainable city and the infrastructure. They are useful proposals for further discussion and development process.

- ・ ISO/DIS 37161 Smart community infrastructures -- Guidance on smart transportation for energy saving in transportation services in cities
- ・ ISO/DIS 37160 Smart community infrastructure -- Measurement methods for quality of thermal power station infrastructure and requirements for plant operations and management

(2) ライフサイクルエミッション (Life cycle emission) の評価について

Evaluation of life cycle emission (LCE)

●TEG レポートの原案では、エネルギーに関連する経済活動等について、ISO14040/14044 に基づくライフサイクルエミッション (LCE) が評価されている。ISO14040/14044 及び関連規格は算定の方法論を提供するもので、それに基づく算定結果は、実際、条件の設定 (システムバウンダリー、ライフサイクル各段階のシナリオ) や用いる原単位次第で結果や精度には差が生じる。

In the draft of TEG report, life cycle emission (LCE) based on ISO 14040/14044 is evaluated in the economic activities related to energy. ISO14040/14044 and the related standards provide the methodology of Life cycle assessment. Assessment results based on them are different in the results and precision actually depending on the setting of conditions (system boundary and scenario of each life cycle stage) and the primary and secondary data set (basic unit).

- 原案の基準 (いわゆる閾値 (Threshold)) には、LCE 評価結果が示されているが、その方法論及び算定の性格上、絶対的な基準にはなり得ない。諸条件の設定に基づき算定した目安の参考値として扱うことが適切である。

In the criteria of the draft (so called threshold), LCE evaluation result is shown, but cannot be the absolute criteria due to the nature of methodology and calculation. It would be appropriate to handle them as referential values calculated based on the settings of various conditions.

(Scientific approach based on LCA methodology is important, but it cannot be the absolute criteria due to the nature of its methodology and calculation. It would be appropriate to handle them as referential values calculated based on the settings of various conditions.)

(3) 移行期間 (Transition) の評価について

Evaluation of during transition period

TEG レポートの原案は、一部のセクターと分類について、「2050 年のゼロエミッション経済への移行に貢献 (Greening of activities)」という政策的な判断がなされている。移行期間を考慮しているように見えるが、実際に、分類に付随して提案されている基準 (閾値 (Threshold)) は、直線的なパスで評価されているのみ。

Draft of TEG report is politically judged as "Contributing to the transition to 2050 zero emission economy (Greening of activities)" in a part of sectors and classification. It looks to consider the transition period, but the standard (threshold) actually proposed relating to the classification is a linear pass for evaluation (e.g. On generation technology, it is only described as "An over-arching, technology-agnostic emissions threshold of 100g CO₂e / KWh is proposed for the electricity generation. This threshold will be reduced every 5 years in line with a trajectory to net-zero CO₂e in 2050."

- 実際の技術開発の進展や時間軸は複線/複層的であって、単純なバックキャスト的思考のみで基準を設定することは適切ではない (現実的ではない)。この移行期間は、段階的且つ複線/複層的な思考が

必要になることから、IEA 等の国際機関の知見も活用しながら、柔軟で、現実に即した目安を設定していくべき。

Actual progress and time axis are double-track/multiple-layer, and it is not appropriate (not actual) to set the criteria only with a backcast thinking. Since the transition period will require a gradual and double-track/multiple-layer thinking, we should set a flexible and actual guide utilizing the knowledge of international organizations such as IEA. It should assess the improvements rather than the levels of performances at a particular time, and rather, we should focus on these progresses and develop the taxonomy that intensive investment will be carried out.

3. Part F Technical screening criteria

Detailed activities: climate change mitigation / Electricity, gas, steam and air conditioning supply

- ・ Production of Electricity from Gas Combustion
- ・ Transmission and Distribution of Electricity

(1) 電力技術の評価基準

Evaluation of criteria for power technologies

●長期的なエネルギー政策と戦略は、各発電技術の評価を考慮しながら、セキュリティ、安全性、環境、および経済性を備えた電力網全体の構造を考慮する必要がある。例えば、移行期間において、電力網全体のベストミックスとして、VRE（負荷変動の再生可能エネルギー等）の導入には、調整電源としてガス火力発電は不可欠。タクソノミーの検討においても、社会インフラとしての電力/およびそのグリッドは、それら最適且つ柔軟な組み合わせ（相互運用性「system flexibility」）のアイデアを必要とし、さらに移行期間を考慮した段階的な目安であるべき。

On the long-term energy policies and strategies, we need to consider the entire structure of power grid with security, safety, environment and economy, considering evaluation of each generation technology.

For example, during the transitional period, gas fired power generation is essential as a regulated power grid when introducing VRE (renewable energy etc. with load fluctuation). In addition, when examining taxonomy, power supply as social infrastructure and the grid require the idea of their optimum and flexible combination (system flexibility), and should be a gradual guideline considering the transitional period.

- ・ Potential Environmental Benefits (To provide flexibility to support the integration of VRE) ;
 - “System flexibility” as “a core component of core component of electricity system design and management”. System flexibility is regarded by the IEA WEO 2018* as the core feature of future electrical systems which will still include conventional power assets, T&D investments, but also energy storage, sectoral integration (integration of gas and electricity systems), etc. Limiting the value of flexibility (read also stability and security) to single components can have negative impacts. *IEA WEO 2018, 7.4 Electricity flexibility
- ・ Environmental Performance Indicators in trend (transition term) ;
 - State-of-the-art combined-cycle gas turbine (CCGT) efficiency now exceeds 60%, with expected improvements to 65% efficiency over the next decade. Top open-cycle gas turbine (OCGT) efficiency is at around 42%, up from around 35% in 1990. *IEA ETP 2017

（２）技術開発/実証段階にある技術への投資（ファイナンスの手当）の重要性

Importance of investment (allowance for finance) to the technologies under the development / empirical studies.

●例えば、CCS や CCUS 等の炭素循環技術は、2050 年への移行期において、電力分野のゼロエミッションに向けて重要な技術である。移行期間においてこれらの技術開発・実証の活動を促進する必要がある、むしろこうした技術に焦点を当てて、重点投資がなされていくようなタクソノミーを開発していくべき。

For example, carbon circulation technologies such as CCS, CCUS, and etc. are important technologies for zero-emission of electricity field in the transition period toward 2050. In the transition period, we need to promote activities of such technology development/ empirical studies, and rather, we should focus on these technologies and develop the taxonomy that intensive investment will be carried out.