

Technical Expert Group on Sustainable Finance

Workshop details

Taxonomy Sub-group: Information and Communication Sector

Expert workshop

26th March 2019, Brussels

Workshop Objective

The objective of the Technical Expert Group (TEG) workshop was to take stock of the work done so far and make progress in defining screening criteria for the ICT related economic activities.

Workshop Participants

| Name | Organisation |
|--------------|------------------------------------|
| | European Commission |
| | Borsa Italiana |
| | EBRD |
| | EBRD |
| | EBRD |
| | EIB |
| | GRESB B V |
| | JRC |
| | London Stock Exchange Group |
| | Schneider Electric |
| | SEV-BCSD |
| (dialing in) | Sitra, the Finnish Innovation Fund |
| | Telefonica |
| | University of East London |

Proposal for a classification of “greening by” activities: discussion on the screening criteria

Question 1: how does energy efficiency (EE) reflected in the definition of significant contribution to mitigation?

The Taxonomy is focused on developing criteria for critical economic activities (carbon intensive, or with significant mitigation potential) that can contribute to the EU decarbonisation objectives. The link with EE comes from the “performance” as we look at “the best performing” solutions including EE performance. Performance here is considered vis-à-vis a benchmark or the contribution to Paris Agreement alignment and decarbonisation objectives.

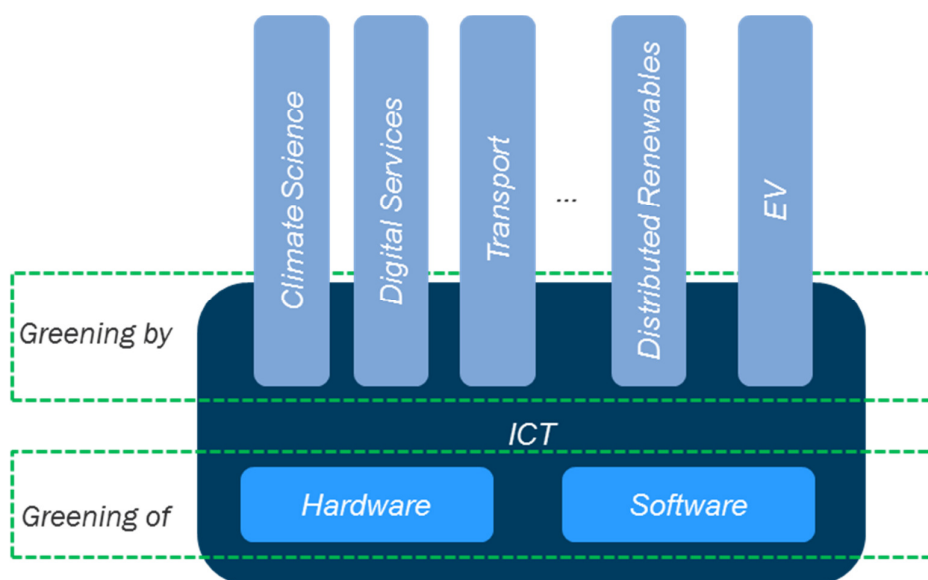
Question 2: how do we define the boundary between ICT and other economic activities?

From the Taxonomy perspective the overlap is not an issue. For example, a company producing sensors for smart buildings system and a company assembling those sensors with software and installing the system are both claiming to be compliant with the Taxonomy.

Question 3: how will the compliance of the activity with the Taxonomy be defined?

Compliance can be confirmed if disclosure is in place. The example has been provided on how London Stock Exchange Group is doing this with regard to the green revenues indexes. Artificial intelligence techniques are used to analyse company data because 70% of companies do not disclose the proportion of measure of revenue that comes from green services and products. 40% do not disclose CO2 emissions. As a consequence, setting very specific targets is challenging, as this requires extensive data.

Figure 1 - Proposed Taxonomy



Discussion on the setting of thresholds for “greening by” activities

A proposal of qualitative criteria defining whether an activity could contribute to the mitigation targets divided in three levels:

- 1) **Purpose built systems** (pure players): technologies necessary for climate monitoring or systems backing ETS for example.
- 2) **Critical systems**: ICT that supports anticipated climate solutions necessary to the implementation of those systems – the question of the **additionality of ICT** (block chain for peer-to-peer electricity trading or the use of electric vehicle for balancing of the grid).
- 3) **Context specific systems**: or systems that have the potential to green other activities but that are not critical and could be used for different purposes (the contribution depends on the way these are deployed). The systems could have a rebound effect that cancel out the mitigation benefits.

Box 1 – Examples of Digitalisation Rebound Effect on Energy Consumption

Although reducing material use, digital photography created and increasing energy demand as users take unnecessary number of picture some of which would not be used.

Similarly, software such as WebEx are supposed to reduce mobility and facilitate e-meetings, yet there is no guarantee for this outcome.

With the gaming industry moving away from CDs, the game developers are able to use more space to store their code. This results in substantial increase in energy consumption even if the technology allows material efficiency gains.

Comments on the Proposed Approach

- Category 1 and 2 represent 1% of existing systems and the challenging category 3 accounts for the rest
- It is necessary that the first category is comprehensive
- Proposal to merge category 2 and 3 as rebound effects might be addressed in the “greening of” category.
- Categories 2 and 3 can be similar in terms of thresholds
- It also possible to see things in terms of “who controls” and “who uses” the system
 - o Category 2: has to do with the ability to control and affect the outcome of the technology and provide data on the outcome (revenue for example in that case)
 - o Category 3: has to do with behavioural/adaptive aspects and the way users use the resource. In that case it will be challenging to collect that.
 - o → **Data collection for verification is an important aspect to keep in mind already at this stage.**
- A test for the differentiation of the categories 2 and 3 could be outlined in a form of decision tree:

- Is the activity contributing to the mitigation of CO2 emissions? (YES/NO).
- If “YES” go to the next step, if “NO” - activity does not qualify
- Is the ICT element critical? (YES/NO).

Box 2 - System Boundary Setting: The Example of Water Sensors

With the growing use of Internet of Things (IoT), the question of boundary setting will become increasingly relevant. An example is an investment company investing in sensors for the calculation of soil moisture levels and the optimisation of water use. The sensors use mobile networks to manage data flows. Would the mobile network be used for other purposes be counted as green? Or the revenue of the telecom company from that data stream is counted as green?

The size of the market of green ICT

- The green economy represents 6% of the equity markets 14% of which is technology.

Are thresholds needed?

- Category 1:
 - A clear philosophy is needed to identify the systems in this category
- The categories should be MECE [Mutually Exclusive Collectively Exhaustive]
- Approaches that have been suggested for categorisation
 - B-to-B vs B-to-C
 - Direct benefit vs Secondary benefit
 - Users vs manufacturers/suppliers

What should be considered as a baseline?

- London Stock Exchange Group considers that technologies with a penetration of more than 50% are a market standard.
- Difficulty to identify benchmarks can get more difficult when differentiating brownfield and greenfield.

Conclusion

- The line between “greening by” categories as well as “greening of” and “greening by” is blurred.
- A solution to bring more clarity could be through a **decision tree**.

Open issues regarding scope and metrics for ICT “greening of” activities

One of the challenges in this area is identifying operational units that are comparable.

The “greening of” approach to the taxonomy could be challenging as the current categories do not capture concepts such as the end-to-end energy efficiency or system level optimisation of electricity consumption.

Figure 2 - End-to-End Energy Optimization



Source: Authors based on TEG Workshop discussion.

The impact of digital services on electricity demand is growing with increasing questions on the best approach for energy efficiency:

- Trade-offs between energy efficiency in the network vs energy efficiency in data centres (i.e. the location of the data centre)
- Trade-offs between the optimisation of energy consumption at a system level (the end-to-end approach) or optimisation at data centre level
- The end user behaviour and consumption of digital content is shifting energy consumption patterns (for example peak demand is shifting to the evening hours and the behaviour of single users (the football star example) is having large energy consumption consequences)

Generally, the areas of growth in greening IT could be summarised in:

- Taking into account energy efficiency when developing software (for instance, the energy consumption was not taken into account for the development of blockchain)
- New technologies such as zero power computing
- Holistic energy optimization such as mentioned above and system transformation.

How could such areas be captured in the taxonomy?

ICT is defined according to NACE categories although the taxonomy can go beyond NACE codes. **The question of what is considered as ICT is important to define:** component manufacturers? Telecom operators? Systems integrators?

Discussion on quantitative and qualitative setting of thresholds for “greening of” activities

Existing KPIs (eg CEN/CENELEC TC215, through its 50600 series,) were not designed for external benchmarking but rather for the definition of internal baselines. Some metrics can be misleading:

- Energy Usage (PUE) could be a misleading metric and should not be used as it was recently taken out of CEN/CENELEC TC215 50600 series, . The

- indicator gives perverse incentive to improve the PUE through energy inefficient software (numerator in the equation)
- Renewable Usage (REF) could also be misleading as datacentres positioned near hydropower plant for example could have a good REF without a particular implementation cost.

High level KPIs are needed to allow cross-cutting optimization as opposed to usual data centre KPI such the ones in the data centres code of conduct. **The question for the Working group is to define the relevant level to focus on: cross-cutting or specific.**

It is important to link to the business process as some other requirements might enter in play when looking at specifications for IT systems: the availability of the service, the encryption and security, integrity or service. Such an approach calls for a different type of indicators linked to business activities. For instance, eBay used “energy consumption per business productive activity” (energy consumption per search) which allowed to reduce energy consumption by 98%.

The outcome of the working group in terms of KPIs could be a generic statement that sets general principals and allows flexibility to adjust in light of future developments: *“energy efficiency improvement of YY% based on a business-meaningful metric”*. Other suggestions included (i) % GHG reduction in comparison with a baseline, (ii) energy efficiency improvement in comparison with baseline, or (iii) GHG savings per unit of investment.

Additional Considerations

It is important to align the taxonomy with the objectives of the Digitising European Industry strategy¹.

The TEG should consider a process based approach to eligibility under the taxonomy.

¹ <https://ec.europa.eu/digital-single-market/en/policies/digitising-european-industry>