

Minutes from TEG Workshop

1. Overview of the Taxonomy objectives:

Objective is to develop a taxonomy that addresses climate change mitigation.

- This will apply directly to Europe, but also have global implications.
 - o European investors looking overseas, and vice versa.
 - o It will be harmonised with the Chinese taxonomy.

We are looking at ways to identify investments that are material to achieving substantial decarbonisation.

This is a guideline for financing projects. WE are not applying this project by project. When this becomes a public standard, it will be read by anyone wants to spend money in the sector.

Anchored in achieving the EU's net zero 2050 target, and its declaration of intent for 2030.

NOT focused on a 'deep green' pathway.

Looking for a dynamic approach, the Taxonomy will be updated in future

- Regarding financial sector: there are no retroactive changes.
 - o A platform will be developed that will continuously review criteria.
 - o Will have principles for people to make cases for green inclusion outside of taxonomy.

Taxonomy needs to be as simple as possible, easy to implement and low transaction costs.

- Will co-ordinate with Eurostat to discuss NACE codes that are missing.

Moral Hazard: agreement on prioritising the maximisation of solar and wind technology.

- Disagreement on whether 'green-light' for natural gas with CCS, and nuclear will compromise investments in RE and promote lock-in.
- We are running out of time, and we need to be careful about 'closing options'.

We are not discussing economics. This is not about a discussion on stranded assets, leave that to investors, do not need to be prescriptive about what is a stranded asset.

- We are discussing transition: how do we distinguish between transitional and non-transitional options.

Taxonomy should enable objectives from other European Directives:

- Suggest conducting economic assessment of proposals, input/output impact on the EU.
- An economic perspective of the capacity to deliver change and power of taxonomy to direct funding is important to ensuring a just and affordable transition.
- **We need clarity on what we are inferring from EU Directives.**

2. Emissions Threshold:

Taxonomy should enable objectives from other European Directive:

- Suggest conducting economic assessment of proposals, input/output impact on the EU.

- An economic perspective of the capacity to deliver change and power of taxonomy to direct funding is important to ensuring a just and affordable transition.

Two variations for the emissions threshold:

- Absolute and fixed threshold of 50gCo2e/kWh
 - Unlikely to exclude many technologies (potentially hydropower and geothermal).
- Two step approach consistent with original binary approach:
 - Use a threshold approach, and flag some investments as subject to regulatory review.
 - The benefits of this will be to help deal concerns over supporting hydrocarbon sector and promoting lock-in.

Underlying approach of the threshold is technology neutrality.

- Signal to investors that we want investments to be consistent with Paris Climate target.
 - Acknowledge possibility that some hydrocarbon based energy generation will have lower emissions than renewables.

Threshold is based of 2050 reference from PRIMES modelling:

- Provides implicit carbon intensity projections for the power sector
 - If we build something today, how long will it be there?
 - When examining investments, we are looking at physical emissions, thus physical maximum lifetime should be the value examined.
- 40 years: proposed as typical, medium/maximum age of asset.
 - This is much longer for nuclear and hydropower.

Revision frequency will be critical to validity – propose review every 5 years.

- We have targets for 2030, do we want to revise it every five years?
 - Also acknowledge communications aspect – will the methodology be published upfront?
 - New emissions data and project demand will require changing assumptions.

CONCERNS RAISED:

Focus of discussion and agenda setting is not aligned with transition to supporting 'green investments'.

- This group should focus on setting up rules for making green investments possible, otherwise we are making lock-in possible.
 - CCS is perceived as an end of pipe and end of time technology.
 - This has become an eat-or-die conversation.

Contention with using a single value threshold. There needs to be a more elaborate view on how to set thresholds and it cannot just be emissions per kWh.

- For natural gas: not including drilling.
- For nuclear: need to include decommissioning and waste disposal/storage.

- In Germany there is a system of avoidance factors. Separate between power production and heat sector. Calculates your emissions but also what you avoid.
- Suggestion that we need to define different targets for each application.
 - o This has not been part of discussion and cannot be accomplished within the time frame of TEG.

There should be a value that is an overarching guiding principle, and then you take from that approach that within that there are exceptions, and these need to be motivated.

Given that we are aiming for net-zero by 2050. Should we be looking at an average over the lifetime or should we look at something that bars or excludes things that are not emitting low levels of CO₂ by 2050?

3. Life Cycle Analysis

- Cannot allow for arbitrary exclusions when setting parameters of LCA.
- Important to show that LCA compares technology provides a service.
- Cannot allow for an 'exemptions list' because then this becomes a political process about what is on the exemptions list and the LCA methodology becomes meaningless.
- Need to clarify if we are using attribution or consequential LCA.

Exclude Electricity-based emissions.

NEED ACTUAL MEASUREMENTS NOT ESTIMATIONS.

LCA compares technology which provides a service. Providing kit is a different service.

- o You cannot compare kWh provided to grid and kit?

Attributional LCA: describe the environmentally relevant physical flows to and from a life cycle and its subsystems.

- o This is used by EU Directive. Looks at limited scope, emissions are attributed to a specific activity (CBI approach).

Consequential LCA: aim to describe how environmentally relevant physical flows will change in response to possible decisions.

- But need to make clear the implicit scenarios that are in the scenarios.
- Opening a black box for scenarios.

Prospective LCA:

How will this methodology address indirect impacts, either through within the GHG methodology, or other methods.

- There is a general understanding – according to the regulatory scheme so far, that GHG threshold

If we are doing LCA for electricity grid, but we have also said that gas investments that don't measure emissions shouldn't be included. Then should we not allow any gas investments?

- Cannot exclude things arbitrarily.
- It's about a data quality issue...

Cannot differentiate thresholds by technology. Threshold currently discussed gives an upper limit.

Bioenergy

Can learn from (RED/REDD?)

There is not one single value for bioenergy, but a series of techniques represented by one value.

Cannot reach this goal Co₂e/kWh if we only use one single value.

- But in The EU Directive there is one threshold for power and any technology that can reach that threshold is okay.
 - o Except for forest biomass.
 - o Biomass using heat and power, not about feedstock but about where you use the technology.

GHG thresholds:

- Facilities producing heat and power from solid biomass (e.g. woodchips, woodpellets, straw) and liquid biofuels: 80% GHG emission savings calculated according to the methodology included in Annex VI of the Directive (EU) 2018/2001 on renewable energy
- Facilities producing heat and power from biogas/biomethane: 80% GHG emission savings calculated according to the methodology included in Annex VI of the Directive (EU) 2018/2001 on renewable energy
- Liquid and gaseous biofuels for transportation: Investments limited to advanced biofuels/biogas, i.e. all biofuels but those based on food and feed feedstock, unless they are certified as low-ILUC. 70% GHG emission savings calculated according to the methodology included in Annex VI of the Directive (EU) 2018/2001 on renewable energy
- Energy efficiency for new installations producing electricity: highly efficient CHP (defined as meeting the criteria of Annex II of the Energy efficiency directive), or 60% for electricity only installations.

B. Forest feedstock sustainability.

To our understanding this element is addressed by the forest and agri TEGs (for all uses of the material, not specific to energy). No need to replicate the same discussion in the energy TEG.

C. Low ILUC-risk:

Biofuels/biogas facilities must either: Be certified as low-ILUC under the EU renewable energy directive. Alternatively be certified under the RSB low indirect land use change (iLUC) optional module to demonstrate that they have low indirect land use impact; or Provide evidence and documentation to demonstrate that they meet low iLUC risk biomass criteria and compliance indicators under the RSB optional module, i.e.: Yield increase, Unused/degraded land, Use of waste / residues

Nuclear:

Nuclear is on agenda because from a mitigation perspective it is low carbon: we have not received any arguments against this.

- There are DNSH provisions that may affect this. But this discussions falls outside of the scope of this group.

Need to peer review the LCAs: we don't have a closed life cycle because no country in Europe has a waste repository running.

CCS:

CCS is on the agenda because it contributes towards significant reduction of emissions and a transition to a net-zero economy.

The below 2-degree scenario does not require CCS in the power sector, but it does in the industry sector.

- In CCS – need to break out from power.

Gas:

We may have fully gas-fired assets which are net-zero. But this will not happen if we do not start investing in CCS.

Two types of investments on gas transmission and distribution infrastructure:

Reduction of methane leakage

Converting the grid to accept hydrogen.

Short term investment opportunity – any signalling on gas infrastructure might not be positive, but emissions savings would be immediate.

There will be a marginal cost difference.

Flaring:

Methane leaking is worse than methane used.

- But there a justice and politics question. Should we rely on legislation to make this change?

Combined Heat and Power

 **comment:**

CHP will investments in generation and transmission infrastructure. This requires district heating pipes – which conflicts with gas infrastructure.

Heat is a big portion of Europe's CO2 emissions, for Nordic countries this is important.

District heating needs to be compared with baseline in built environment.

Will require co-ordination with the buildings sector.

We want a green heat market, what are the switches we have to get there?

Generation: Problem with CHP is that today it is largely fossil fuel based, we need to transform this market.

Transmission: There is also no investment in district heating pipes, we have conflict with gas infrastructure.

Metric: Can we apply the electricity threshold for heat as well?

Do not count it if it is fossil based (unless it is using CCS).

Could calculate a threshold comparable to a reasonable heat pump.

CHP grid:

We already see that there are grids that are at the heart of the system.

Investment in heating grid system is mostly a good idea, it allows for storage, interseasonal storage, but regarding the source of the heat being generated, you have to assume it would meet some threshold.

MRV:

Propose including all emissions and then reducing the threshold.

- Need a review clause: does not need to apply to solar, wind, geothermal, but likely to apply for CCS.

- Need annual disclosure or review to ensure asset still qualifies: can use supply contracts as a record.

- If the investment runs the risk of losing credibility to deliver on climate mitigation then the damage is done, is this ex-post or ex-ante?

- The proposal is ex-ante.

There will always be people trying to game the system. In manufacturing they're looking at CCS, but CCS can be turned off. Verification and sanctions are important.

CLOSING NOTES

Closing comments

[REDACTED]: Replacing parts of equipment of grid, requirements should be fulfilled, these are usually entry level requirements, eco-design. We need to look at higher level requirements.

[REDACTED]: Bioenergy is a thorny issue, fossil fuels, it's about what you're burning, not how sustainably the stuff is produced.

Shouldn't have biomass used at all in the power sector. won't be the priority compared with aviation.

[REDACTED]: - We need to be careful when we develop threshold, accurate and usable also on storage. - we need to develop thresholds now but they will be reviewed.

[REDACTED]: - talking about thresholds, plan next steps for discussion.

[REDACTED]: - Need significant short term immediate reduction of carbon. - RE need to be phased up.

[REDACTED]: - LCA important - evolution of system, LCA of technology today will change. - this needs to be taken into account.

[REDACTED]: - Bioenergy - key for getting into TEG. - Note the reflection that regulation is outlined today, does not include a risk dimension, but talks about continuous emissions, this is an issue. - LCA, important, demanding. So we need to bare that in mind on how we make this operational.

[REDACTED]: - nothing.

[REDACTED]:

- Important to stay focused on the mission, emissions reduction.
 - We ought to support a wider range of optionality to deliver that.
 - In favour of the fastest possible build out of renewable energy.
- but I have a view that that won't be fast enough and other things are going to be required. We need to keep that optionality in the system.
- Once something is excluded, it's excluded.
 - WE can't get into moral hazard, issue. If we are promoting something is to be done, we need to have complimentary policies to make sure other objectives are met.

[REDACTED]: - Important to have interaction with other groups. - Especially with DNSH.
- Touch on the difficulty of dealing with - Need to be consistent across the groups.

[REDACTED]:

- DG Energy
- comments approach on grids.
- on Bioenergy, will try to make sure colleagues on transport and agriculture sector are covering the areas - push for consistency.
- Gas grids, once we enter discussion into transforming gas system we might need to consider redrafting/regulating asset base. Need to see today's exchange on what's happening.

[REDACTED]:

- Threshold, how are we going to put LCA into that. the question.
- Cooling, air conditioning, is another issue. We cannot ignore it.
- need to think about how we will tackle it.

[REDACTED]: OECD tells me that in last 3 years we've added more energy for cooling than renewable energy.

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- six years ago, i wanted to move to something distinct and sustainable.
- was stuck on CCS.
- What i've learned on CCS
- the scale of the challenge of the energy transition.. there is 25% electrons, the rest is molecules. We need low carbon molecules in the system.
- build on graeme notes, not wise to cut out technologies, we need to make sure range of options. There needs to be thresholds, that comply with LCA analysis. If we don't do that, then we will have risk of not meeting ambitions.

█ : - some open leads,

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- bleak outlook.
- we have the capital. \$21 trillion in europe, invested in zero or low-carbon instruments.
- it's about choices we make about allocation of capital going forward.
- template for choices, to make it easier for investors.
- make it easier for governments.
- butting heads with EU directives.