Drax Independent Advisory Board
December 7th, 2020, Telcon Meeting

Invited Attendees

IAB: Sir John Beddington, Lord John Krebs, Professor Sam Fankhauser, Professor Virginia Dale, Forest Research represented by Robert Matthews, Elena Schmidt.

Drax: Laura O'Brien, Rebecca Heaton, Selina Williams, Emma Persson, Michael Goldsworthy, Richard Peberdy, Ross McKenzie.

Other: Richard Tipper (Ecometrica)

Agenda:

1. **13:00 – 13:15: Introductory session**
   - 1.1. Welcome (John Beddington)
   - 1.2. Brief introduction to today's meeting and Drax representatives present (Rebecca Heaton, Drax)

2. **13:15 – 15:30: Biomass Carbon Accounting**
   - 2.1. Introduction to the challenges to Drax by stakeholders (Ross McKenzie, Drax)
   - 2.2. The IAB, led by Sir John Beddington and Lord John Krebs, commissioned an Independent review of Carbon Accounting
     - 2.2.1. Presentation of carbon study by Richard Tipper at Ecometrica
   - 2.3. Introduction to Drax's approach to carbon accounting (Rebecca Heaton, Drax)
   - 2.4. Introduction to Drax's plans (Michael Goldsworthy, Drax)

3. **15:30 – 15:45: Drax's media update**
   - 3.1. Update on recent media activity (Selina Williams, Drax)

4. **15:45 – 16:00: Conclusions and wrap up**

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IAB: Sir John Beddington (JB), Lord John Krebs (JK), Professor Sam Fankhauser (SF), Professor Virginia Dale (VD), Forest Research represented by Robert Matthews (RM). Apologies were received from Elena Schmidt.

Drax: Rebecca Heaton (RH), Laura O'Brien (LOB), Mike Goldsworthy (MG), Emma Persson (EP), Ross McKenzie (RMcK). For final item: Selina Williams (SW).

Other: Richard Tipper (RT) (Ecometrica).

Introductory session

1. JB opened the meeting, explaining that the IAB wanted to examine stakeholder challenges on carbon accounting, and how Drax meets these concerns. He explained that the IAB had commissioned an independent organisation, Ecometrica, to write a paper on the issue.

2. RH acknowledged that this meeting is just the beginning of the IAB discussions on carbon accounting - the start of the debate and a gathering of information.

Drax on concerns of stakeholders on carbon accounting in bioenergy

3. RMcK introduced stakeholder concerns around forest carbon – which focus on two issues:

    a. a perceived 'loophole' carbon accounting under UNFCC accounting rules.
    b. 'carbon debt' -the concept of the emissions from burning biomass taking time (decades) to be reabsorbed by the growing forest.

Standards and methods used in carbon accounting – presentation by Ecometrica

Summary of carbon accounting issues

4. The aim of this presentation by Ecometrica was to clarify important accounting concepts for the IAB, in particular how they relate to the calculation of carbon impacts of biomass use for energy, and also explaining the aspect of carbon neutrality from the perspectives of three greenhouse gas accounting frameworks:

    a. National Greenhouse Gas Accounting Framework, used for Kyoto and UNFCCC reporting
    b. Consequential Accounting, used for lifecycle analysis
    c. Attributional Methods, often used for corporate greenhouse gas reporting.

5. RT explained the challenges around the concept of carbon debt, stack emissions, indirect land use change and economic disruptions. A lot of these come back to the underlying question of neutrality of forest carbon and whether it is considered carbon neutral.
6. The national inventory methods refer to emissions associated with three types of change in the forest:

a. land use change and emissions associated in going from forest to non-forest, often referred to as deforestation
b. forest that remains forest and is measured in change in carbon stock and
c. stock of carbon held within products, and the decomposition of these products.

7. If timber is harvested from the forest but not combusted, it would have to be accounted for as building up carbon in the stock of harvested wood products. For bioenergy that stock is accounted as zero. Accounting across borders should not change this. If you harvest wood for bioenergy from a forest, the impacts of harvesting that bioenergy are included in the calculation of forest carbon stock changes, which is why the emissions are not accounted for when burning the energy in a chimney stack - as that would be double counting.

8. Forest production, harvesting and growth is a cycle occurring over decades, and therefore looking at one year can cause problems. A distinction must also be drawn from where forests have been under long term management, producing a certain level of woody biomass, and where a decision is made to increase the supply of woody biomass from these forests.

Different carbon accounting methodologies

9. RT explained the basics of consequential life cycle analysis (CLCA) and National life cycle accounting, what each looks at and how they differ.

10. RT then outlined Attributional accounting – the most commonly used framework for corporate GHG accounting and the accounting method generally used for individual products and services.

11. Comparing national, consequential and attributional frameworks:

    a. national gives a consistent annual reporting of anthropogenic GHG emissions and large-scale emissions, but does not show the impacts of specific activities or technologies;
    b. the consequential approach estimates impacts of new technologies, processes and demands and gives a picture of how emissions may change, but doesn't quantify the actual emissions assimilated within a specific unit of production, but looks at marginal changes;
    c. the attributional approach divides the observed emissions between the users and provides consistency for accounting purposes in a simple and direct way but does not show the impacts of particular technologies and systemic changes.

12. Within the forest sector, there is a limit to granularity and breakdown at a national level. For attributional accounting, which 'divides observed emissions between users of a certain service or product' for a forestry system, it is not clear what the observed emissions are.

13. It was noted that there are no lifecycle analyses for fossil fuels that cover the full lifecycle in the same detail as it is covered for bioenergy and forest products.

Accounting for Biomass in the RO and ETS, and challenges

14. RT discussed how forest accounting frameworks play out in specific legislation, particularly the schemes which reward renewable energy production in the UK (the UK Renewable Obligation and Contracts for Difference). These schemes set a number of checks that need to be applied to ensure biomass comes from an area under a management scheme deemed to be suitable for these purposes - which is usually the forest production area. Some standards now include criteria on sequestration.

Presentation by Michael Goldsworthy, Drax on potential approaches to carbon accounting, followed by group discussion.

15. MG began by explaining that there are numerous concerns about biomass lifecycle emissions and that no one individual approach to lifecycle analysis (LCA) is suitable for dealing with these issues. Attributional LCA does tell us certain things that consequential lifecycle analysis does not and vice versa.

16. MG presented Drax's lifecycle emissions of biomass for its main sourcing regions and compared these to gas and coal. MG included stack emissions for biomass. It was clarified that the concern that wood has a lower energy density than coal is built into this data because results are presented per unit of electricity generated. While bioenergy and coal combustion emissions are comparable due to similar thermal efficiencies, gas combustion emissions are smaller due to a higher efficiency of conversion.

17. MG presented some early LCA work undertaken by Drax that includes biogenic removals and emissions for biomass sourced from 7 of its catchment areas (5 In the US South and 2 in the Baltic states). MG explained that the approach allocates physical emission and removal data observed at a landscape level to all harvested material from that region, in a manner consistent with early proposals under the Corporate GHG Protocol standard.

18. The analysis demonstrates that when all emissions and removals are included in an attributional LCA for Drax's wood pellet supply chains, the result is a net removal of carbon from the atmosphere (i.e. net negative emissions). It was emphasised that the LCAs do not necessarily demonstrate a causal effect (i.e. that biomass supply chains are directly contributing to a net sequestration of carbon from the atmosphere) but evidences that Drax is sourcing from forest systems that have a very positive contribution in terms of their contribution towards climate change mitigation.

19. It was noted by MG that this only provides a snapshot in time, and so such analysis requires continuous monitoring.

Causality: understanding forest supply base response to demand over time.

20. MG presented some historical data showing the relationship between forest removals (harvest), growth and inventory in the US South. When looking at this data you see close relationships between the amount of wood fibre removed from forests and the amount of additional growth and inventory. This provides evidence to suggest wood fibre demand in the region promotes a building of carbon stocks. Provided that demand from the biomass industry will have comparable impacts on the forest, it was argued that this evidence is consistent with the attributional LCAs presented earlier.

21. Some critics consider forest markets to behave differently than other markets regarding supply and demand relationships, and that increased demand results in a depletion of the required resource, and not a building of inventory. However, the counterforce to that is that the existence of demand is maintaining the forest resource on the landscape in the first place, incentivising investment and improving silviculture. It is important to understand the extent to which the resource is being depleted and the extent to which it is being maintained or enhanced – and what the net result of this is, as a result of the demand for biomass.

22. The Board agreed that this was a start at looking at how we might understand better our impact on carbon, but that it was of such importance that it would need to be discussed again. One of the challenges for Drax is how to communicate the complexity of this subject in an easily understandable manner.

JB thanked and closed the meeting.