

## Annex

### EASAC – Comment on the Commission consultation on the ETS

submitted to the online consultation on the EU Emissions trading system – updated rules on monitoring and reporting (2021-30)

#### 1. Why the ETS?

The objectives of the [EU emissions trading system](#) (EU ETS) is stated to be “a cornerstone of the EU's policy to combat climate change and its key tool for reducing greenhouse gas emissions cost-effectively”. Note here the core objective to REDUCE GHG EMISSIONS to COMBAT CLIMATE CHANGE.

Since the objective is to combat climate change it is ESSENTIAL that the REDUCTION IN GHG EMISSIONS achieve REDUCTIONS in ATMOSPHERIC LEVELS of GHG since it is those concentrations that drive global warming which drives climate change.

#### 2. Current ETS

At present the ETS allows biomass emissions from power stations to be declared as zero at the point of emission. On the other hand, fossil fuel emissions from power stations must be declared. This is consistent with UNFCCC reporting (where accounting of forest harvesting is made under the LULUCF category). However, the delegating of all reporting to LULUCF which is often conducted in different countries (in and outside the EU) to that hosting the facility burning the biomass is [recognised by the IPCC](#) as meaning that “**the whole life cycle GHG effects of bioenergy systems are not readily observed in national GHG inventories**”. Given this fundamental weakness and the ETS's core aims, there is a need for the ETS to seek a more transparent link between reporting requirements and actual climate impacts.

#### 3. Incorporating scientific knowledge in the last 10 years

The effects of switching from fossil fuels to biomass for electricity generation has been widely studied in the last decade and it is now known to be inconsistent with current ETS assumptions and objectives.

EASAC's and many others' work has shown that switching from fossil fuels to biomass in power stations INCREASES net emissions to the atmosphere when emissions along the whole life cycle are properly accounted for (see [Norton et al., 2019](#), for an overview). Even groups such as [IEA Bioenergy now accept that](#).

- a) Emissions per kWh of electricity generated increase when coal (let alone natural gas) is replaced by biomass
- b) a significant time lag exists before any assumed regrowth in biomass after harvesting can offset this initial increase. This period may range from a decade at the shortest (e.g. with genuine forest residues or agricultural wastes, or some rapidly growing biocrops) to centuries.

There is thus a fundamental disconnect between the reported emissions (zero) and actual emissions and their effects on atmospheric concentrations (both of which are increased for significant lengths

of time). This is contrary to the aim of the ETS TO COMBAT CLIMATE CHANGE. In effect, the ability to report zero emissions constitutes an incentive which is not conditional on contributing to climate change mitigation.

EASAC has pointed to the extensive literature which allows carbon payback periods to be calculated. Using this, we conclude that the science requires a new condition in the ETS revision to add to those already in Directive 2018/2001 to **require that carbon accounting be conducted across the whole supply chain to calculate the period after which net reductions in atmospheric CO<sub>2</sub> concentrations can be achieved (the carbon payback period).**

Having calculated the 'carbon payback period', it would be necessary to **specify the periods that are accepted as compatible with avoiding overshoot of the Paris Agreement targets** to "keep the increase in global average temperature to well below 2 °C above pre-industrial levels; and to pursue efforts to limit the increase to 1.5 °C". Since recent estimates are that 1.5 °C will be exceeded in 10-20 years (e.g. see recent [Met Office forecasts](#)), such an acceptable period is likely to be in the region of 5-10 years.

From a scientific standpoint, EASAC concludes that a proportion of biomass emissions **should be reported in the ETS** determined by their effectiveness in mitigating climate change. This would argue for a staged adjustment related to the length of the carbon payback period associated with a specific facility's operations. Determining the detail will require further study and negotiations, but one possible rational starting set of assumptions and rationale would be as follows.

All energy installations involve 'sunk' carbon in their construction, but the literature suggests that with wind and solar a net reduction in atmospheric CO<sub>2</sub> levels results after a few years. This could be taken as a standard against which to compare current biomass-based electricity generation. Where such facilities can show that they ensure a net reduction in atmospheric CO<sub>2</sub> within (say) 5 years, there is a rational case for treating these in the same way as other 'renewable' technologies and continuing to report zero emissions to the ETS (the current situation). On the other hand, a technology which increases emissions beyond the period in which Paris agreement targets are overshoot would, on scientific grounds be ineffective in mitigating climate change, and thus should be treated in the same way as other high carbon fuels and should have to declare all emissions to the ETS.

The time remaining before Paris targets are overshoot depends on whether the 1.5 or 2°C target is taken, but let us assume that around 20 years remain. This would provide a graduated scale from 'zero' emissions at less than 5 years, declaring 25% of real emission for payback periods of 5-10 years; 50% from 10-15 years; 75% from 15-20 years; and 100% for longer than 20 years.

There could be objections to this on the grounds that carbon payback periods are difficult to quantify and are dependent on the assumptions made in the counterfactual scenario. However, we consider that methods to properly account for carbon are well-established. Moreover, independent verification would also be feasible. We consider the above proposals are fully consistent with the polluter pays principle. Reforming the ETS to reflect the real climate impacts and be compatible with the aims of European climate policy, would shift the burden of proof to the operator and require them to evaluate their whole supply chain from a climate perspective- and to assume responsibility for compliance with their assumptions.