An better EU climate law would be more ambitious, separate reduction and mitigation targets and not ignore the most promising carbon sink solution.

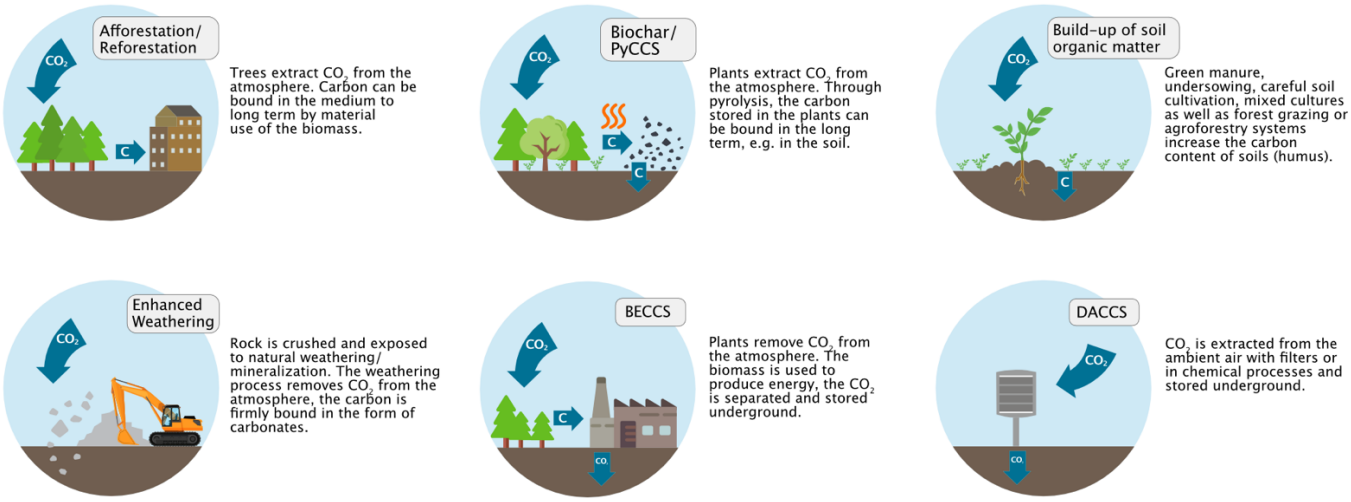
To tackle the climate crisis, the EU urgently needs not only ambitious reduction targets but also a stringent carbon sink strategy. Without a massive build-up of carbon sinks, it is impossible to reach climate neutrality by 2050. It is, therefore, unfortunate that the EU underestimates the role of pyrogenic carbon capture and storage (PyCCS), the most promising short-term carbon-sink solution. PyCCS is technology ready with no negative side-effects and could be scaled within the next decade.

The EU has agreed on enshrining climate goals into an EU climate law: A 55% reduction in greenhouse gas emissions by 2030, compared to 1990 levels, and climate neutrality by 2050.

Because of historical emissions of climate-changing gases, science agrees that creating carbon sinks is imperative to achieve the Paris Agreement to limit climate change to well below 2°C by the end of the century. The European Council and Parliament have recognised this and agreed on the creation of carbon sinks together with reduction targets.

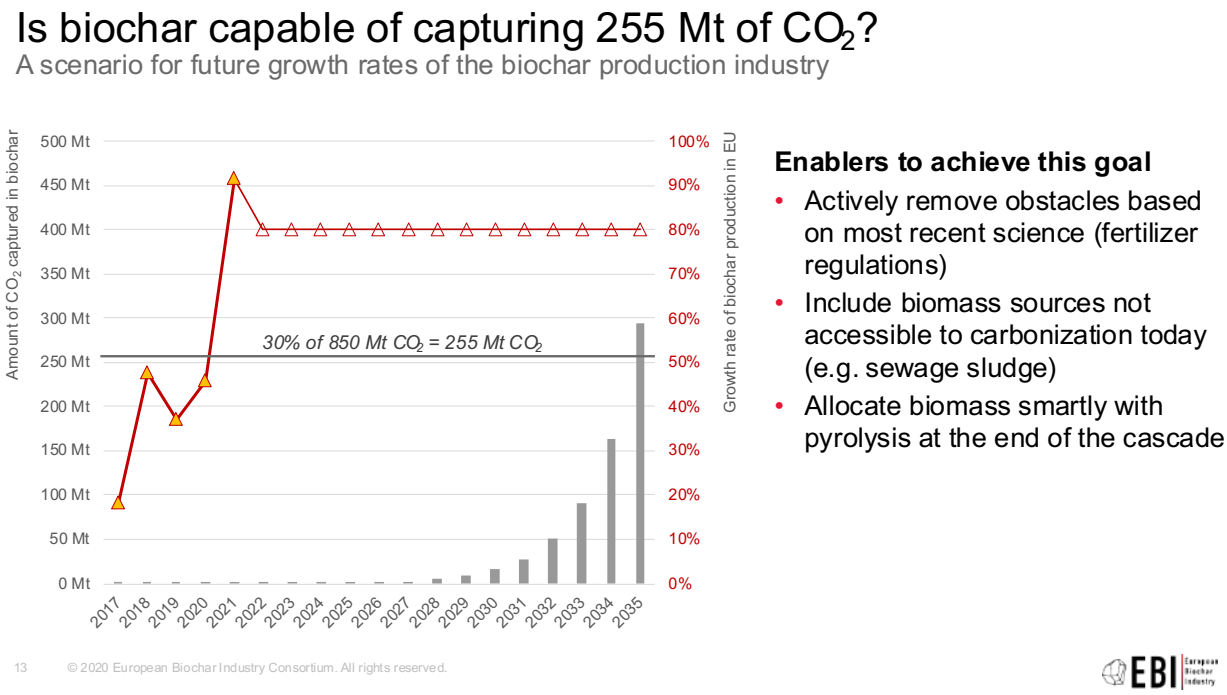
The European Biochar Industry Consortium (EBI) welcomes the conclusion of actively creating carbon sinks, still we would like to stress on the importance of separating emission reduction and carbon sink creation and of defining two separate goals for those intents. Both are imperative, and one cannot be substituted by the other. Therefore, we believe that the 55% reduction target has to be achieved by reduction alone and a separate carbon sink element has to be established. The latter should follow a progressive pathway and not be limited to 225 Mt of CO_2, as it is proposed in the climate law.

The EBI has calculated that, within the EU, active removal of CO2 from the atmosphere through the creation of carbon sinks must reach a level of up to 850 Mt CO2eq in 2050 in order to achieve climate neutrality. These carbon sinks must be additional, stable and reliable, and can only be credited if they lead to a net reduction in atmospheric carbon after subtracting all process emissions. The available options for negative emissions include short-term solutions such as biochar (PyCCS), carbon sequestration in forests and soils, and enhanced weathering, as well as technical solutions such as BECCS and DACCS, which require longer lead times for upscaling. The six realistic carbon sink options are shown in graphic 1 below.



Graphic 1: Six “Negative Emission Technologies” for the creation of additional carbon sinks. (Source EBI, based on MCC)

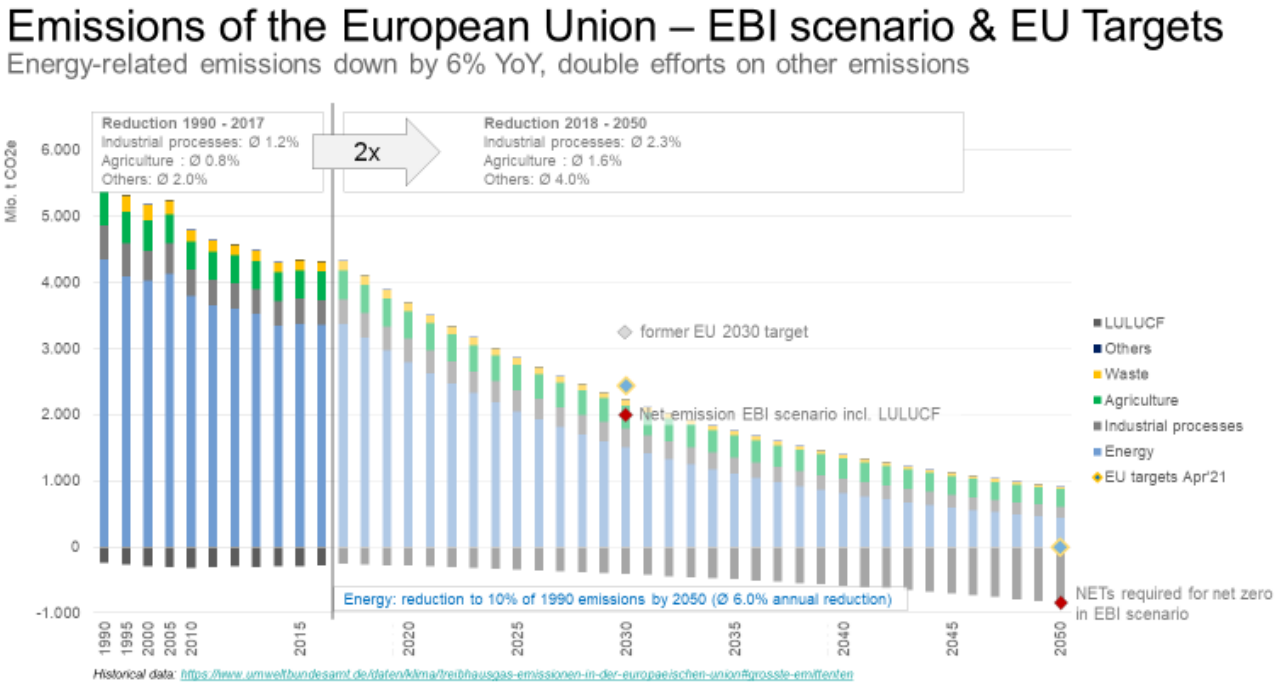
Biochar, as a readily available and scalable solution, can store 30% of the above mentioned 850 Mt CO2eq in 2050 and thus be an important part of the solution. It is stable carbon from biogenic material that persists for hundreds to thousands of years, creating a reliable and safe carbon sink and additional benefits if used in soils or a variety of materials. A market study published in February 2021 showed strong growth of the biochar sector in the EU, especially in the last 5 years, and that if current growth rates continue, the 255 Mt CO2 (30% of 850 Mt CO2eq) removal level can be reached by mid-century (see graphic 2 below).



Graphic 2: Historic growth of the biochar market and extrapolation until 2035. Red: Annual growth rates of biochar production until 2021 with continuation at 80% growth rate until 2035.

Background:
In October 2020, the EBI has published the Whitepaper "Biochar-based carbon sinks to mitigate climate change", highlighting that carbon neutrality can only become a reality through a combination of rigorous emissions reductions and massive carbon sink creation. To quantify how much negative emissions are needed by 2050, the following scenario was created: Reduction of existing GHG emissions along a path of 6% p.a. reduction for the energy sector and doubling of historical reductions between 1990 and 2017 for all other sectors.

The scenario shows that under these assumptions, the remaining emissions would amount to 850 Mt CO2 in 2050, which is 15% of 1990 emissions. This 850 Mt CO2 would thus be the required amount of carbon sinks to achieve climate neutrality by 2050. From then on, further creation of carbon sinks would have to successively reduce the CO_2 concentration in the atmosphere until the end of the century. This active net reduction is imperative to achieve the Paris climate goals. Against this background, the most recent EU targets were compared with the EBI scenario (see below).



Graphic 3: EBI scenario of EU emission reduction and the simultaneous creation of carbon sinks, including the former and actual EU target.

While we welcome that the 2030 reduction target is far more ambitious than the previous EU target, it is nevertheless questionable whether it is sufficiently ambitious given the urgent need for decarbonisation, especially as it includes a C-sink element of up to 225 Mt CO2. Moreover, at least according to what has been communicated so far, the Climate Change Act lacks a realistic path to achieving climate neutrality by 2050.

In order for biochar to reach the 255 Mt CO2 target and thus become one of the few relevant NET solutions, we urge regulators and policy makers to:

- Actively remove barriers based on the latest scientific evidence (e.g. Fertiliser Regulation),

- include biomass sources that are not accessible for carbonisation today (e.g. sewage sludge), and
- to feed biomass intelligently into pyrolysis at the end of the utilisation cascade.