

## **Wood-based liquid biofuels can offer a sustainable opportunity for the transport sector – UPM & WWF Finland dialogue and actions related to wood-based liquid biofuels in the Finnish context**

Sustainable biofuels are part of the solution towards a fully-renewably powered economy. In this context, sustainable biomass for wood-based liquid biofuels production is needed and wood-based liquid biofuels can be an essential part of fossil fuel replacement solutions in certain sectors.

Biomass used for wood-based liquid biofuels production sourced from forests that are sustainably managed provides a feedstock option that carries an opportunity for lower risk of adverse environmental and social impacts. Sustainable forest management must be ensured by implementing robust sustainability criteria covering all major environmental and social impacts.

This paper presents the current common understanding and action points of UPM and WWF Finland explicitly on wood-based liquid biofuels in the Finnish context. The issues WWF Finland and UPM could not agree, such as stump removal for energy purposes in broader bioenergy context, are excluded from this paper, but the dialogue continues and understanding of the impacts will increase through further research. The statements expressed in this paper will be reviewed annually or as deemed necessary.

### **Sustainable wood-based liquid biofuels are part of the solution in transport sector**

- Sustainable wood-based biofuels play a role in the 100 % renewable energy future.
- We support new generation biofuels that deliver high GHG savings (at least 70 % compared to fossil alternatives), are produced in highly efficient processes and comply with robust and credible sustainability criteria.
- New innovations and technologies allowing forest biomass to be converted to liquid biofuels are part of the energy transformation.
- At the current level of fossil transport fuel use the availability of sustainable biomass does not allow full replacement of fossil fuels with biofuels. Energy efficiency, modal shifts to public transport and electrification based on renewables where possible need to complement the careful utilisation of sustainable biofuels.
- Sustainable biomass is not an unlimited source of energy. Generally the end use of biomass to energy should be allocated to those sectors that presently have no other renewable alternatives, namely aviation, heavy duty road transport, shipping and a few industrial processes.

### **Wood-based liquid biofuels have several advantages**

- Wood-based liquid biofuels can have significantly lower GHG emissions than fossil fuels, provided that the carbon stock (carbon debt) impacts and indirect impacts are accounted for and minimised.
- If wood-based liquid biofuels are produced from raw materials originated from sustainably managed forests, such as FSC certified forests, they are among the most promising biofuel feedstocks, with less (environmental & social) risks.

- Presently and in the next few years wood-based liquid biofuels take up a minor share of annual wood harvest in Europe. In the decades to come wood-based liquid biofuel technologies will probably be rolled out in larger extent, which underlines the need of robust and credible sustainability criteria as the sector is building up. This also requires a review of the necessary political framework to ensure sustainability.

### **Sustainability of wood-based liquid biofuels must be ensured by meeting certain preconditions**

To ensure no decline in biodiversity or carbon stocks and no threats to food security, WWF Finland and UPM are jointly committed to promoting the following key principles in wood-based liquid biofuels production:

- Forest biodiversity and ecosystem services. Sustainable forest landscapes can be achieved through shared formal responsibilities and voluntary initiatives and commitments.
  - Sufficient level of protected areas network must be achieved by establishing formal and voluntary protection of forest areas.
  - In areas of forest management sustainability criteria of the highest standard, such as FSC, must be promoted and prioritized.
  - In forest areas of high conservation value biomass extraction should not be allowed.
- Climate impacts
  - Biofuels production, including all relevant direct and indirect impacts, must have substantially lower GHG emissions to the atmosphere compared to fossil alternatives.
  - Increased biofuel developments are likely to increase the pressure to harvest more biomass which in turn can affect land use and the forest carbon stocks negatively (carbon debt).
    - Impacts of biofuel production on forest carbon stocks (carbon debt) and on land use must be accounted for and minimised appropriately. A credible approach on carbon debt and indirect land use change accounting must be included in the greenhouse gas accounting for biomass used for biofuels.
    - High risk feedstock must be excluded from wood-based biofuels. Focus should be laid on development of lower risk streams (wastes, residues).
- Forest industry production process residue streams, such as crude tall oil (CTO), offer further low risk opportunities for the production of wood based liquid biofuels. The systemic impacts (substitution effect etc.) of increased by-product and residue usage for liquid biofuel production needs more research.
- Meaningful sustainability criteria for biofuels: Legally binding, robust and ambitious sustainability criteria should cover all biofuels use at EU level.
- Internationally proclaimed human rights, social integrity as well as legality of wood products must always be respected in biofuels production.
- Transparency and continuous improvement of private sector practices and of public policies to ensure sustainable production and use of woody biomass are essential principles in sustainable biofuels production.

## **Action points and process forward**

To further develop current practices, UPM and WWF Finland in cooperation are committed to the following actions:

- UPM and WWF Finland will contribute to the development of the RSB certification for wood-based biofuels by conducting a feasibility study for the RSB certification of wood based biofuels in UPM operations. Depending on the fitness of RSB certification to different markets UPM is committed to concrete steps in promoting the RSB certification option.
- UPM and WWF Finland together will conduct a science-based and balanced forest carbon impact study related to wood-based biofuels. The study will focus on clarifying how the direct and indirect climate impacts of different biomass streams should be taken into account in biofuels production. Possible policy recommendations arising from the study will be elaborated in cooperation.
- UPM and WWF Finland will develop FSC standard further and promote its credibility and use in Finland in forests owned by UPM and other forest owners.

This paper presents the current common understanding and action points of UPM and WWF Finland on wood-based liquid biofuels in the Finnish context. Therefore the statements expressed in this paper will be reviewed annually, starting from the date of signature, or as deemed necessary.

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### **About UPM**

Through the renewing of the bio and forest industries, UPM is building a sustainable future across six business areas: UPM Biorefining, UPM Energy, UPM Raflatac, UPM Paper Asia, UPM Paper Europe and North America and UPM Plywood. Our products are made of renewable raw materials and are recyclable. We serve our customers worldwide. The group employs around 21,000 people and its annual sales are approximately € 10 billion. UPM shares are listed on NASDAQ OMX Helsinki. UPM – The Biofore Company – [www.upm.com](http://www.upm.com)

### **UPM Biofuels**

UPM plans to become a major player in high quality, advanced biofuels for transport. Biofuels are an essential part of the Biofore strategy. The innovative wood-based biofuels developed by the company and their production technologies are part of a sustainable future. UPM's biofuels are frontrunners in quality, usability and sustainability. They will significantly decrease greenhouse gas emissions compared to fossil fuels. [www.upmbiofuels.com](http://www.upmbiofuels.com)

### **About WWF Finland**

WWF is the world's leading conservation organization and works in over 100 countries. Our mission is to build a future in which humans live in harmony with nature. Our target is to stop the loss of biodiversity and the growth of ecological footprint. WWF was founded in 1961. In Finland we have been operating since 1972. [www.wwf.fi](http://www.wwf.fi)