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The European commission, The European Parliament, The European Committee of the Regions, The Swedish Government, The Swedish Parliament, SALAR

Bioenergy from Northern Europe – a key component in transitioning to a fossil-free economy

Europaforum Northern Sweden (EFNS) is a network for local and regional level politicians from Norrbotten, Västerbotten, Jämtland, Härjedalen, and Västernorrland. EFNS is a meeting place and information forum where EU policy is analysed and discussed in relation to how it affects northern Sweden. EFNS monitors EU issues to influence laws, strategies, and action programmes of the EU, including its budget. The purpose of EFNS is to safeguard the interests of northern Sweden, at both the European and national level, on issues with a clear European perspective.

Europaforum Northern Sweden (EFNS) welcomes the European Commission's announced proposal to create a package of measures for renewable energy and a new strategy for sustainable bioenergy after 2020, designed to ensure achieving the EU 2030 target for 27% renewable energy and speeding development toward a circular, fossil-free, and competitive European economy. Bioenergy has a vital role to play in Europe's transition to becoming a fossil-free society and for the commitments undertaken in the COP21-agreement. Bioenergy is currently the largest source of renewable energy in the EU and has important capabilities compared to other sources of renewable energy for replacing fossil fuels for vehicles, airlines, shipping, and heating. Northern Sweden is one of Europe's most heavily-forested regions and has one of the strictest regulatory frameworks for sustainable forestry. It has strong industrial value chains as well as research institutes and universities conducting forestry-related research. The region therefore has unique prerequisites for producing green bioenergy and conducting frontier research to speed up the development of advanced biofuels, offering significant added value to the entire EU.

Europaforum Northern Sweden hereby presents a summary of our views regarding sustainable energy below.

- EFNS asserts that bioenergy should have a central role in increasing the share of renewables in any future energy mix to achieve EU energy targets.
- Future EU regulatory frameworks regarding bioenergy must provide long-term ground rules and control measures focused on climate and energy targets, and on growth and job creation. These should also promote faster development of a fossil-free EU by facilitating and improving the investment climate for renewable energy.
- Common EU frameworks must respect the difference in sustainable forestry as practiced in northern Sweden compared to elsewhere in Europe. Planned sustainability criteria for solid biofuels must be designed to promote bioenergy production from sustainable forestry.
- EFNS asserts that there is significant potential for developing innovation and technology within bioenergy. To capture this potential, the EFNS urges that the EU market framework must be both predictable and long-term – especially to create necessary large-scale

investment in innovative technology and enable biofuel-based solutions to become competitive in various fields.

- EFNS also asserts that bioenergy, produced sustainably, should be considered climate-neutral.

- **Swedish forest based bioenergy – climate neutral and renewable**

Increased use of forest biomass can contribute significantly to meeting EU and Swedish climate and energy targets. Increased use of bioenergy was the most important factor enabling Sweden to reduce CO_2 emissions between 1990 and 2014 by 25% while increasing GDP by 60%.[1] In this period, bioenergy use doubled.

The forest has a key role in climate issues since it binds CO_2 to function as carbon sink. Swedish forests and the products from it already contribute to taking up and storing more carbon dioxide than all fossil CO_2 emissions in the country. Research shows that because growing forest binds more CO_2, forests provide the greatest climate benefit when actively managed through harvesting adult trees for use in various products while planting young trees in their place. It is also important to note the carbon stores built into various durable wood products, as with buildings and furniture. Forest-based products have the potential to eventually replace fossil fuels and materials.

Northern Sweden's sustainable agriculture and forestry provide a circular CO_2 budget, that is, released emissions are recaptured, creating a net zero CO_2 footprint, where no new net emissions of CO_2 arise over the long term. When biofuels are combusted, no new carbon is added to the biosphere, as with fossil fuels.

Research has shown that where forest is not actively managed, GHG emissions increase over the mid-term. Every cubic metre of forest biomass replacing fossil products in Sweden reduces CO_2 emissions by approximately 500kg. Research at SLU, Sweden's leading forestry university, shows that the forest contributes to a reduction of 60 million tons in annual CO_2 emissions.

- **Significant potential for greater production of bioenergy from forestry residues**

Northern Sweden has abundant amounts of biomass available as residual forestry products that are currently underused, including logging residues, stumps, and saplings. In addition, by-products are

[1] Swedish Environmental Protection Agency: http://www.ekonomifakta.se/Fakta/Miljo/Utslapp-i-Sverige/Naringslivets-utslapp/

used in less energy-efficient processes, as with black liquor from the pulp industry and industrial side-streams. Research shows that the Swedish production of bioenergy from biomass has the potential to grow through more efficient use of these residual products (resulting from biomass production and side-streams). Greater utilization through further development of uses can reinforce existing value chains for pulpwood and timber and increase production of green bioenergy – thereby reducing GHG emissions without increasing the total amount of harvested forest.

- **Sustainable forestry and protection of biodiversity is a precondition for the EU's emerging bioeconomy**

Swedish forests currently grow approximately 130 million cubic metres every year. Of this growth, barely 90 million cubic metres are used industrially. Notably, the total volume of growing forest has consistently increased since introduction of the Swedish Forestry Act in 1903. The total stock is greater today than ever before. The commercial forestry industry has successively captured more carbon in Swedish forests over more than one hundred years, while the volume of refined forestry products has steadily increased.

The success of Sweden's development in bioenergy is based on the country's long history of using natural resources in our forest while also protecting and developing these resources. For products from the bio-economy to be sustainable in the long term and therefore provide a credible market alternative, the forest's value in terms of recreation and biodiversity must also be safeguarded in the EU. Currently, Sweden has one of the world's strictest regulatory frameworks for the forestry industry with supervisory authorities responsible for ensuring existing regulations for replanting, retaining biodiversity, and good water quality are followed so that valuable forest cultural environments are not destroyed. Consideration for the environment in current forestry practices, FSC marking, and similar are a strong point in the emerging Swedish bio-economy. The likelihood of conflicting objectives between an emerging forestry-based bio-economy and a sustainable forestry industry is thereby limited in Sweden. Planned sustainability criteria for solid biofuels must be designed to promote bioenergy production from sustainable forestry.

- **EU regulations for bio-economy must consider regional differences in sustainable forestry.**

Forest biomass is an important source of raw materials for emerging bio-based industries. The production of new materials, products, and energy from the forest can significantly contribute toward attaining EU targets for a developed bio-economy based on regional conditions and create new job opportunities.

Unfortunately, we see trends for limiting distribution and development of bioenergy in the EU. Resource-efficient use of all parts of the tree has been developed thanks to strong synergies between end-users over an extended period in northern Sweden. Raw material flows vary over time and across regional markets. It is therefore not possible to define at an EU level what is primary

product, co-product, by-product, and waste material. Cascading use is in no way a guarantee of efficient use of resources or even of sustainability. Biomass suppliers, including forest owners, must continue to be able to decide for themselves where they sell raw materials.

The forestry industry in northern Sweden is sustainable and already strongly regulated under the Swedish Forestry Act, making it vital for Sweden to maintain national authority over the forestry industry and sustainable harvest levels. Further, EU regulations should dress reinforcing transition to a bio-economy, consider regional differences, and not add administrative burdens to the 16 million small-scale forest owners in Europe.

- **Innovation and new technology within bioenergy results in more jobs, economic growth, and contributes to the EU sustainable economy**

Currently, several of the largest investments in modern history are being made in the forestry industry of northern Sweden. There are four universities, research centres, and clusters of leading-edge competencies and research in bioenergy. There is significant interest and potential for investment in northern Sweden regarding R&D in advanced biofuels. However, progress is slow due in part to conflicting signals from Brussels on the future role of bioenergy, creating market uncertainty.

For northern Sweden to fully exploit our potential, we need to create more synergies and partnership opportunities in the EU to support sustainable research, develop new products and methods to create new jobs, new innovations, and a Europe that benefits sustainable development.

For this to be possible, EU regulatory market frameworks must be certain and long-term, especially to facilitate necessary investment in innovative technology that considers:

- **The EU should enable faster development and distribution of innovative technologies within biofuels**
  Many new products replacing fossil-based products have already been created in the field of bioenergy. Some of these are in their early phases, while others are ready to be scaled up. It is therefore important that the EU increases support for technology development to enable large-scale demonstrations and “take-offs” on the market for new technologies in actual situations, that is, to support commercialisation.
- **The EU should have high ambitions for development of renewable energy**
  The EU regulatory framework must benefit development of renewable energy and allow leading countries to inspire development, and provide incentives for renewable fuels and renewable energy. Sweden provides an example in this with its exemptions from energy and

carbon taxes, so that renewable energy from first- and second-generation biomass remains competitive.

- **The EU should support sustainable and renewable energy in public procurement**
  It is important to facilitate and strongly encourage demands for fossil-free transport and energy in public procurements. This is important not only in cases where transport services, vehicles, or energy are procured; but also where other goods and service are procured that include a significant portion of transport or energy. When public operations have this opportunity, they can create markets for sustainable transport and sustainable energy.

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