

[Subject]

ROLE OF INNOVATION IN A FOREST BASED ECONOMY

Wood-based biomass plays an important and constantly growing role in the bio-economy. In the view of the Confederation of European Paper Industries (CEPI), by 2050 the bioeconomy could become the greatest single driver of the global economy. It is an economy where the basic building blocks for our industries, raw materials and energy are derived from renewable sources.

The world around us is changing; global population is growing and wealth is increasing. At the same time the challenges of combating climate change and resource scarcity become more and more evident.

One part of the solution to these challenges is to increase sustainable consumption of reusable and recyclable products based on renewable raw materials. It is also self-evident that whatever is produced or consumed the focus needs to be on material and energy efficiency. We need to create more from less.

Added value from scarcity

The “more from less” philosophy aiming at efficient use of materials lies at the core of UPM’s Biofore concept, of which green innovations are an important part. For example, new products have been developed by making use of by-products or residue materials, or where it has been possible to replace non-renewable materials with renewables. Such products include wood composite materials and biofuels.

Consumer and producer behavior is crucial

We are living in the middle of the sixth industrial revolution. This revolution is bio-based. It means that already now new disciplines and motives steer the behavior of people. Today people justify their purchasing decisions on totally new grounds. The key word is sustainability — sustainability understood in a rather wide context.

Sustainable bio-economy means that people prefer renewable energy, renewable raw materials and recyclable products. For the manufacturing industry, it means the demand for industrial ecology — sustainable combinations of environment, economy and technology.

Innovations are a foundation for renewal and development. Using the knowledge we have we can through innovations both increase the productivity of our existing processes and create new sustainable products to meet the needs of the consumers.

Innovations in new and existing businesses

The forest based industry in Europe is in transformation. The consumption of paper is decreasing and there is over capacity of paper production in Europe. Therefore renewal and cost competitiveness are essential for the companies to be able to grow.

The more we are able to improve on resource and material efficiency the more competitive we are. The aim is to find innovations and technologies that enable this.

While cost competitiveness is in key role in existing businesses these activities are also crucial for financing the creation of new products and businesses. New revolutionary technologies for the production of biofibrils, high quality biofuels or biocomposite materials are just examples of the opportunities.

Partnering with research institutes and inside the sector is crucial

The EU Commissioner for Research, Innovation and Science Máire Geoghegan-Quinn has stated that "Europe needs to make the transition to a post-petroleum economy. Greater use of renewable resources is no longer just an option, it is a necessity. We must drive the transition from a fossil-based to a bio-based society with research and innovation as the motor. This is good for our environment, our food and energy security, and for Europe's competitiveness for the future"

For example there is a gap in demonstration scale advanced bio-refineries to mature technologies and commercialization of high value products. The main challenge in EU is overcoming the innovation "valley of death".

The 8th EU research framework program Horizon 2020 aims at tackling these challenges by helping to bridge the gap between research and the market. This market-driven approach includes creating Public-Private Partnerships in the form of Joint Technology Initiatives. The JTIs should bring together the resources needed for addressing specific societal challenges. For us the most important is around the biobased economy and the proposed PPP.

Actually Europe offers a variety of policies that are relevant to the biobased economy and can trigger its development by 2020.

The role of policy is to

- Incentivise supply (Support biomass mobilisation as part of greening the CAP)
- Secure demand (Support demand for advanced biofuels as part of RES policy)
- Trigger investment (Support investment in biorefineries with a possible PPP on Biobased Industries)

Also the UNECE and especially your Timber Committee is doing an important work in increasing the understanding of the forest sector's role in the green economy. We all have a common challenge to raise the opportunities. The 2-3 years process involving all stakeholders to prepare the "Action Plan for the Forest Sector in a Green Economy" is a brilliant example of increasing the knowledge among members on how the forest sector can contribute and lead the way towards the emerging green economy at the global level.

A forest of new opportunities

As the Biofore Company, UPM's vision is to integrate the bio and forest industries. Our target is to create value from renewable and recyclable materials by combining expertise and technologies within fibre-based, energy-related and engineered materials businesses. For us cost leadership, change readiness and innovations are the important factors to strengthen our competitive position, to create new markets and to increase shareholder value in the long term.

One concrete example is UPM's recent biorefinery investment in Finland. By 2014 the Lappeenranta biorefinery will be producing 100 000 tonnes of advanced second generation biodiesel from wood based tall oil, which is a residue from chemical wood pulping. The biodiesel is an innovation which will decrease greenhouse gas emissions of transport up to 80% in comparison to fossil fuels. Still the product's characteristics correspond to those of the traditional oil-based fuels and highly complement today's vehicles and fuel distribution systems.

Long term commitment a key to success

Future orientation, innovation and sustainability are the key ingredients for the development of the bioeconomy. It requires commitment to efficient operations, a more sustainable future and profitable business demonstrated through concrete actions and a string of R&D success.

Wood provides many opportunities in a multitude of uses – like biofuels, bio fibrils and new bio-based chemicals in addition to printing, packaging and construction. Exploitation of new opportunities also requires good supporting policies and competitive companies.

UPM is committed to constantly develop even more efficient use of renewable raw material, various CO₂ binding recyclable bio-products, more sustainable forest management and new biomass based technologies. A prerequisite for success is that society and decision-makers are committed to the same targets.