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Perspectives on the Green deal industrial plan and the bioeconomy

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The Green Deal Industrial Plan – the aim

- To enhance the competitiveness of Europe's net-zero industry and support the fast transition to climate neutrality.
- To provide a more **supportive environment for the scaling up of the EU's manufacturing capacity for the net-zero technologies and products** required to meet Europe's ambitious climate targets.



The Green Deal Industrial Plan

A predictable and simplified regulatory environment

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Net-Zero Industry Act (NZIA)



Measures for **scaling up the net-zero technology products manufacturing capacity to increase the deployment of Green energy production**. Ensuring simplified and fast-track permitting, promoting European strategic projects, and developing standards to support the scale-up of technologies across the Single Market.

Critical Raw Materials Act



Ensure **sufficient access to those critical raw materials that are vital for the manufacturing key technologies**. Concerns in particularly materials for components of **green technologies** (as energy and batteries), used in digital applications, as well as needed applications crucial to the **defence, aerospace and health industries**. Selected Strategic Projects will benefit from support for access to finance and shorter permitting timeframes.

Reform of the electricity market design



Measure to make **consumers benefit from the lower costs of renewables**.

The Critical raw Materials act

Bioeconomy contributes to decrease the demand on critical raw materials

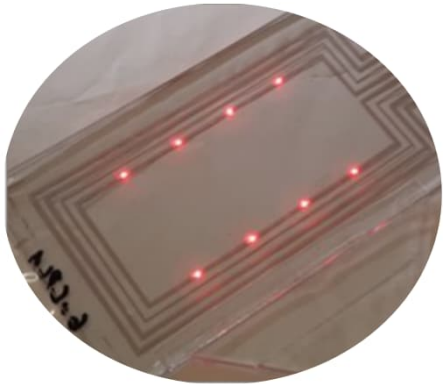
- The biggest potential is for **substitution materials for non-critical parts**, to which the expected functionality is not dependent on the critical raw material.
- **Bio-based materials have higher recyclability and cascading potential** and, therefore, contributing to circularity and reduction of demand.
- For many of these promising applications the **innovation pathways are still under development** to find the best substitutes while keeping all the demanded functional properties.
- The **investments in RD&I including technology infrastructures, testing and experimentation spaces are critical** and urgent.

The Net-Zero Industry act

Bioeconomy can create products “made-in-Europe” and hence reduce dependencies

- The bio-based components, materials and new products in the supply chain of the net-zero technologies, as e.g. bio-based electronics, can **substitute products which currently have constrains, and dependencies in the supply chains.**
- **Carbon capture, utilisation and storage:** although most of the focus in the Net-zero act is on the “carbon storage” the technologies for the capture and utilisation are also included and the bio-based products can offer a carbon sink.
- **Sustainable alternative fuels, sustainable biogas/biomethane** are included in the list of the net-zero technologies. The sector should discuss on **supply chain dependencies** and potential for increase the needed in manufacturing capacity on that supply chain.

Some specific examples



**Bio-based electronics
applicable as lightweight
functional structures**



**Technology Demonstration
for e-fuels and VTT Bioruukki
Pilot Centre**



**Optical cellulose materials
enable new sensors**



**Batteries from trees
Stora Enso Lignode®**

Research and innovation to increase the supply mix and reduce demand

Research, development and innovation actions should be set-up hand-in-hand with the Industrial green deal proposals to increase the supply mix, reduce demand on critical raw materials and ensure the development, maturation and scale-up of the almost ready net-zero technologies as well as the next generation of critical technologies.

- Identify and **develop bio-base substitutes, new processes, technologies, and materials**, for critical raw materials and net-zero technologies.
- This includes exploring novel bio-based alternatives, improving production efficiency, and **optimizing resource utilization**.
- **Research and pilot testing** to ensure cost-efficiency, durability, recycling, re-use and repairing of the alternative bio-based products.

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