BBioNets

Boosting the adoption of Bio-Based Technologies

Cross-Fertilisation Meetings

Bio-Based Practices on Farms & Forests

"Innovative Hemp Practices"

Potential of Industrial Hemp in the Bioeconomy

Hana Gabrielová, Czechemp

Online, 15/01/2026

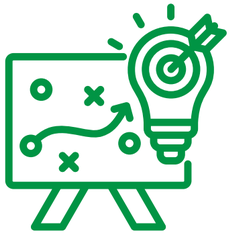
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Hemp in the EU bioeconomy strategy

"The 2025 EU Bioeconomy Strategy* recognises industrial hemp as a strategic bio-based resource, especially for textiles and construction — signalling stronger policy support and potential funding opportunities across the value chain."

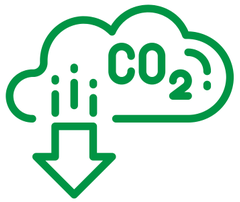
*published on 27 November 2025

- **Policy support for scaling, standardisation and market uptake**
- **Priority of the applications are in textiles and construction**
- **Scaling potential driven by investments in hemp-based low-carbon materials**
- **Opportunities to create regional cooperation clusters and hubs**



Why industrial hemp now?

- Low-carbon transition of materials and construction
- Reduce dependence on imported materials by creating resilient bio-based value chains.
- Shift from single-output crops to multi-stream biomass to diversify raw material supply.
- Creating rural jobs and strengthen regional manufacturing.







Hemp connects agriculture, bio-materials, construction, food, textile and biocomposites industry.



Agronomic hemp reality

→ Low Farm Profitability

→ Environmental & Climate Pressure

→ Structural & Demographic Challenges

- **Equipment for harvest**
- **Infrastructure for processing**
- **Experience with hemp farming**
- **EU 1940 -> 400 000 ha / over 53 000 today ha**


3–4 months vegetation


8-12 t/ha dry biomas
1 ton of seeds


Low pesticide and herbicides inputs


Diversification of the crop cycle


Efficient organic fertilisation


Protect soil agains erosion
Weeds mitigation

Hemp products and value streams

Stalk → long fibre / short fibre / hurd

Seed → food, oil, feed

Side streams → biochar, energy, composites

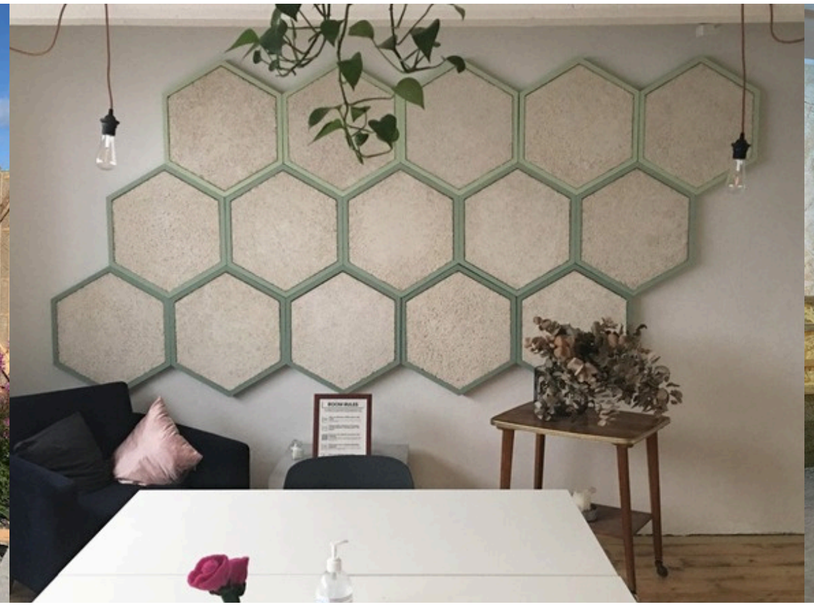






Construction sector

- Hempcrete (hemp-lime), insulation, prefabricated panels, hemp bricks
- Demand driven by low-carbon building and **healthy indoor** climate
- Increase of the **wooden based** construction



Wood construction sector

- low-carbon building targets
- market demand for bio-based materials
- wood supply has long renewal cycles
- hemp is fast-renewable material

The rise of wood-based construction opens the door for broader bio-based material systems — with hemp as a natural complement.

Market Trend
↓
Wood-Based Construction
↓
Need for Diversification
↓
Bio-Based Construction Systems
↓
Wood + Hemp

Composites & Other Innovative Materials

Non-woven

Geotextile
Landscaping
Insulation

Bio-composites

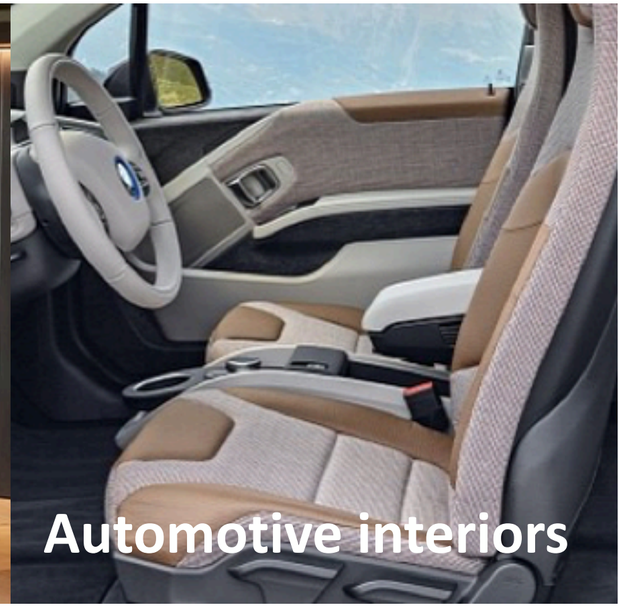
Automotive
Furniture
Sports

Interiors

Car interiors
Hotels interiors
Furniture textile







Economics: where is the value?

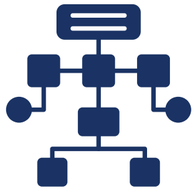
Three complementary perspectives



Farm level - €/ha
Yield × price → strongly dependent on processing access



Processing level - €/t biomass
Value created when the fractions have a market



System level €/t CO_2e
Relevant for construction, ESG and policy instruments

Hemp value is system economics, not commodity economics.

Current bottlenecks to scaling

Practical barriers

1. Lack of regional processing infrastructure - 10-20 milion investment
2. Lack of access to the harvesting equipment 100k-1 milion
3. Variability of raw material quality
4. Certification and standardisation (especially construction)
5. “Chicken-and-egg” problem between farmers and processors

Solutions

Support for farmers growing crops for biomass production

Fast quality classification methods

Robust LCA data and EPDs



Value chain models that work in practice

Contract farming + processor

Vertical integration

Cooperative shared infrastructure

LA CHANVRIÈRE LCDA
The field of your vision



Cluster message: Shared processing hubs + data = fastest way to scale.

Regional perspective and opportunities

- Technology hubs which supports the development and adoption of eco- and bio-based materials across multiple sectors
- Pilot processing and demonstration projects
- Shared data on yields, quality and LCA

FRD-CODEM supports innovation from concept to industrial scale (TRL 5–7), covering eco-design, development, standardisation and end-of-life considerations.

Cluster message: Shared processing hubs + data = fastest way to scale.

Cooperation and coordination

The Hemp European Hub - a core of 11 partners and more than 350 diverse actors involved. Organizator of the international conference - World hemp forum in 2026 Nov.

FRD-CODEM supports innovation from concept to industrial scale (TRL 5–7), covering eco-design, development, standardisation and end-of-life considerations.

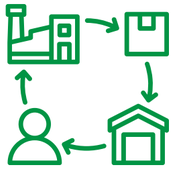
European Industrial Hemp Association advocating for the hemp sector in EU and international policy-making.

A sectoral cluster connecting industry, research and the public sector to advance the hemp industry in the Czechia.

Conclusion & discussion



- Industrial hemp is a multi-stream bioeconomic platform, with the highest value in material applications.



- Its potential depends on integrated value chains, linking agriculture, processing and end-use markets.



- Scaling requires coordinated action between agriculture, industry and research.



- EU policy recognition (Bioeconomy Strategy 2025) strengthens the case for investment and scale-up.

Thank you!

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