



Opportunities from Industrial Hemp

Author: Luke Strong



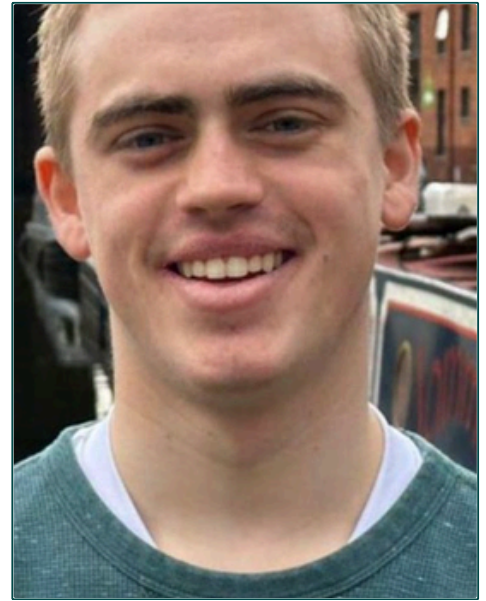
**Cannabis
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About the Author

Luke Strong is a Student Ambassador of the Cannabis Industry Council.

Luke is currently studying an MPhil in Policy Analysis at the RAND School of Public Policy. Luke has a BA in Philosophy from Queen's University Belfast, where he secured a First.

He eagerly wants to aid in the pursuit of ethically realising the medicinal potential of cannabis and psychedelics. Luke aspires to contribute to these industries from a policy perspective, advocating for a more complete approach to modern medicine by integrating these substances.



Acknowledgements

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About RX Extraction:

RX Extraction Ltd specialises in the conversion of cannabis plant material into defined cannabinoid active pharmaceutical ingredients (APIs).

Using advanced supercritical CO₂ extraction, controlled purification and crystallisation processes, we transform complex botanical inputs into consistent, high-quality cannabinoid active substances suitable for medicinal development, research, and pharmaceutical supply chains.

Our work focuses on the technical challenges of cannabinoid manufacture: selectivity, purity, reproducibility, and scalability — bridging the gap between raw plant material and pharmaceutical-grade outputs.

All activities are conducted within an MHRA-inspected GMP framework, ensuring that technical performance is matched by regulatory confidence. RX Extraction was established to support a UK-based medicinal cannabis supply chain, reducing reliance on imported intermediates while maintaining pharmaceutical standards.



About Unyte Group:

Unyte Group is committed to delivering regenerative solutions that go beyond sustainability — actively restoring the environment while driving economic growth. At the heart of their mission is Unyte Hemp, which harnesses the natural power of hemp to accelerate the UK's transition to net zero.

Unyte Hemp is pioneering hemp-based innovations, including:

- Hempcrete – A sustainable, carbon-storing building material.
- Bioplastics & textiles – Replacing fossil-fuel-derived products with biodegradable alternatives.
- Regenerative farming – Supporting UK farmers in growing hemp for climate-positive impact.

While hemp is their core focus, Unyte Group also drives impact through:

- Unyte Solutions, which delivers carbon removal, waste management, and sustainable infrastructure projects.
- Unyte Knowledge, which provides education, research, and training to accelerate the adoption of green technologies.

At Unyte Group, they are not just working towards net zero—they're committed to regenerating industries, ecosystems, and economies.

Foreword

Industrial hemp has long been recognised for its versatility, but only recently has its transformative potential in addressing the climate crisis gained the prominence it deserves. This report, 'Opportunities from Industrial Hemp', arrives at a critical juncture: the UK stands at a crossroads in its Net Zero journey, with ambitious targets, but daunting challenges. Hemp, as this study demonstrates, can play a decisive role in bridging that gap.

The strength of this work lies in its ability to connect the urgency of decarbonisation with practical, scalable solutions. Hempcrete, with its ability to store carbon, improve energy efficiency, and provide safe, durable building materials, is no longer a speculative concept—it is a proven tool with measurable impact. Beyond construction, the report highlights innovations in road reinforcement, biofuels, and regenerative agriculture, illustrating hemp's potential to permeate multiple sectors of the economy.

Yet innovation alone is not enough. The barriers identified here—onerous licensing, restricted seed access, and counterproductive rules on plant utilisation—paint a picture of an industry held back by outdated regulation and bureaucratic overreach. The testimonies of farmers who have struggled with arbitrary refusals and administrative inefficiencies underscore the urgency of reform. If the UK is to unlock hemp's potential, it must align policy with the environmental and economic realities of the 21st century.

Civil servants in the space need to be given the resources they need, and work more efficiently to allow UK PLC to prosper in a growing global market.

Encouragingly, the report also emphasises the opportunities ahead. Private sector investment, driven by ESG imperatives, is increasingly recognising hemp's value in reducing embodied carbon. Certification systems such as BREEAM, alongside expanding carbon credit markets, provide additional pathways for hemp to thrive commercially while delivering public good. The international context is equally important: as nations around the world liberalise and expand hemp regulation, the UK risks being left behind unless it embraces bold, forward-looking change.

What emerges is a vision of hemp not merely as a crop but as a regenerative solution—one that heals soil, captures carbon, stimulates innovation, and creates new economic opportunities. Combined with medical opportunities, there is a great opportunity for the UK to participate in this global market. This is not a niche agenda but a mainstream pathway to resilience, sustainability, and prosperity.

It is our hope that policymakers, investors, and industry leaders alike will read this report as both a call to action and a roadmap. Industrial hemp can, and must, be central to our collective efforts to achieve Net Zero, regenerate our landscapes, and secure a greener future for generations to come.



Jamie Bartley, Unyte Group



Damien Bove, RX Extraction



Overview

The pressing weight of the climate crisis has wreaked havoc on the natural and built environment.

From increased intensity of natural disasters to gradual erosion of roads, climate change present numerous threats, both imminently and in the long-term. As a response, this report seeks to find a place for hemp in the UK's Net Zero Agenda. Hemp, a plant with vast sustainability benefits possesses a notable ability to decarbonise the built environment, which is the primary focus of this report. In presenting this capacity of the plant, this report explores hemp-based innovations like hempcrete and how they can lead to a Net Zero future. To conclude, the report goes on to review the current UK hemp industry, noting ways in which it can be bolstered through private and public sector solutions that reduce barriers to this sustainable future.

The Scope of the Problem

The Net Zero Agenda

The UK's Net Zero Agenda is a response to the aforementioned perils of climate change. The original announcement of this agenda begins with the clear declaration that [w]e are at a crossroads in our history¹. Currently², floods, wildfires, and extreme heat are already ravaging the globe, with gaining rates of incidence each year. If work is not done, this pattern will only increase, posing a threat to human lives and all that they have produced. The roots of the Net Zero Agenda are found in the Climate Change Act 2008.

This Act formulated the UK's approach to the climate crisis by instigating binding targets for an 80% reduction in greenhouse gas (GHG) emissions by 2050, compared to 1990 levels.³ This landmark goal signalled the UK's commitment to reducing its part in causing climate change, and the Committee on Climate Change (CCC) was created to advise the government and monitor its progress on curbing emissions.⁴ The reduction target of 80% for 2050 was supplemented with interim targets as well, to be monitored by the CCC. However, this target of 80% was amended in 2019 to Net Zero, again legally binding, meaning that the UK would emit no more than it could recapture by 2050.⁵

In the most recent report from the CCC, published July 18th, 2024, the advisory body identified key areas of concern that threaten the Net Zero project.⁶ Particularly, it noted that the UK is not on track for the upcoming 2030 target of 68% reduction of GHG emissions. Limited plans are in place to achieve this goal, as only a third of necessary emission reductions are addressed by credible plans. The report covers a plethora of cross sector recommendations for targeted investments from the UK government, like ensuring the decarbonisation of public sector buildings. These goals make clear that innovation and unique approaches are necessary to ensure that such targets are met, providing an assurance for not only the 2030 target but also the Net Zero target and its perpetuation after 2050.

Defining Hemp

Hemp is the common name for *Cannabis sativa* L.⁷ The genus of the plant, cannabis, represents a handful of species that contain two notable compounds: THC and CBD.⁸ THC is the heavily regulated compound that is fundamental to medicinal cannabis, while also commonly sought by the illicit cannabis market due to its intoxicating psychoactive effect.⁹ Meanwhile, CBD, legal in the UK and broadly across the world, has non-intoxicating, mild psychoactive effects, acting on cannabinoid receptors in the brain in a far different way than THC. Hemp, unlike medicinal cannabis, is low in THC,¹⁰ while CBD is typically present at a higher rate than found in recreational or medicinal cannabis.¹¹ THC content within hemp is primarily determined by its genetics and is often regulated to a maximum of 0.3%.¹²

Once planted, hemp grows quickly and resiliently to a height of 1 to 5 metres throughout a growing cycle of 90-120 days.¹³ It has a multiplicity of uses after being harvested. Namely, the stems and seeds are cultivated for industrial purposes, giving it the common nickname “industrial hemp.” Regardless of its name, however, hemp simply represents low-THC *Cannabis sativa* L.

Hemp’s growth displays a sustainability potential that goes largely unmatched. During its growth cycle, hemp requires limited fertilisers and pesticides, as it is resilient in growth and has innate pest-repellent¹⁴ properties. In addition, hemp does not require large amounts of land for its growth, and its water usage is vastly lower than in other plants.¹⁵ But, perhaps most incredible among its range of traits is its capacity for carbon sequestration. Throughout its growth, hemp takes a notable amount of carbon dioxide (CO₂),¹⁶ the most prominent of GHGs, out of the atmosphere. An estimation for this sequestration is 8 to 15 tonnes of CO₂ per hectare of hemp, as opposed to 2 to 6 tonnes per hectare of trees.¹⁷

The impressive growth of hemp and its reliance on such little amounts of the typical resources consumed by plants makes it one of the most sustainable plants in the world. This versatility, coupled with its usage dating back centuries, represent hemp’s ability to serve as a green, multi-faceted material.



The Built Environment and Its Footprint

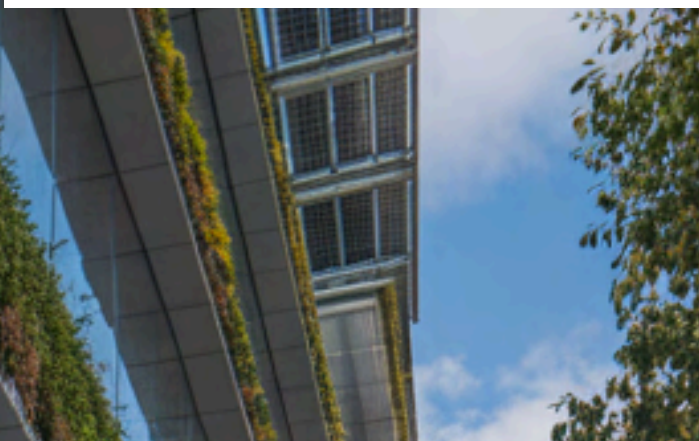
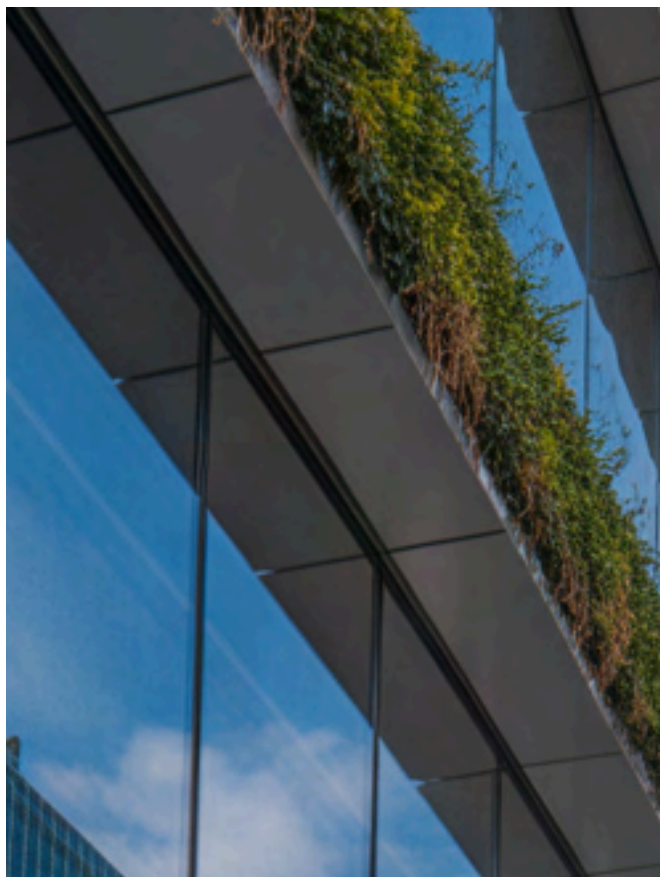
The built environment, at its simplest conception, refers to human-made creations that define the places that humans work, live, and recreate in.¹⁸

The term, by encompassing buildings and the urbanisation of the natural environment, is representative of the effects of the construction industry. As such, large amounts of GHG emissions are attributable to the built environment each year. For example, in 2018, buildings made up 36% of final energy use, while 39% of energy and process-related CO₂ emissions were attributable to the construction industry.¹⁹

The emissions and energy usage of the built environment come from a variety of sources. The most obvious of these sources is the fact that buildings emit GHGs while in operation, through processes like heating, cooling, and simple energy consumption.²⁰ However, there is a hidden cost to the built environment, laden in the materials used for construction.

These materials release carbon throughout their lifecycle, from “extraction, transportation, manufacturing, installation, maintenance, and disposal of materials, a factor known as ‘embodied carbon.’”²¹ Material manufacturing and construction, for example, account for 11% of GHG emissions in the world.²² Essentially, embodied carbon represents a significant, unseen footprint, highlighting the need for decarbonisation in all areas of the built environment.

As the United Nations Environment Programme notes, the carbon footprint of the built environment has surpassed its pre-pandemic peak and is far from the necessary targets needed to stem the tide of the climate crisis.²³ This stark warning underscores the necessity for innovation in the built environment to ensure a sustainable transition to a Net Zero future.



Decarbonising the Built Environment

Hemp provides numerous opportunities for decarbonising the built environment.

As the plant has over 50,000 uses, many are under-researched in terms of commercial usage at scale. However, several of them have been extensively detailed and are already found in the construction industry, the most researched being hempcrete. These innovations provide excellent opportunities²⁴ for decarbonising the built environment.

Hempcrete

Hempcrete is created by the hemp plant undergoing the decortication process, where fibres from the bast of the plant are separated from hurd fibres, the wooden core of the plant's stalk.²⁵ This is a mechanical process, utilising a specialised piece of equipment known as a decorticator.²⁶ Following decortication, the hurd fibres are cut again to a size of 6-25mm, which are used in the creation of hempcrete.²⁷ Hempcrete encompasses a wide variety of different combinations, as the ratio between its three ingredients—hemp hurd, binder, and water—differs with the intended purpose of the hempcrete.²⁸ Particularly of note is the binder, which is often a form of lime. Lime has a carbon-light manufacturing process and, like hemp, further absorbs carbon from the air after being processed.²⁹

Bound together, hempcrete can be used in many ways, from building blocks to walls, floors, and more.

As such, hempcrete is seen as an environmentally friendly concrete alternative. This is not just because the growth of hemp sequesters carbon; hempcrete has a multiplicity of positive effects, like increased energy efficiency and insulation, which can decrease the need for artificial heating.³⁰ For example, using hempcrete instead of concrete has been shown to result in a 45% reduction in energy consumption.³¹

Though hempcrete is appealing for its environmental properties, it serves as an attractive alternative to concrete for a range of reasons. Due to the alkaline and non-combustible properties of lime, hempcrete enjoys a higher fire resistance than concrete, along with repelling both insects and mould at much higher rate.³² Though it cannot be used on its own to support buildings, the use of hempcrete in tandem with materials like wooden frames creates a durable structural integrity that makes it a viable building tool.³³

Ultimately, hempcrete is a proven, low-carbon alternative to conventional construction materials, like concrete. While the manufacturing of hempcrete, particularly during the decortication process, releases GHGs, the carbon sequestration during the growth of hemp, as well as the carbon that is absorbed over time far outweighs these emissions.



Beyond Hempcrete: Notable Innovations

The built environment encompasses far more than just buildings, and many hemp-based innovations display promise in decarbonising other aspects of the built environment.

One such innovation is hemp-based asphalt reinforcement. Research has been gaining regarding the benefits of hemp-reinforced asphalt, particularly highlighting an increase in the strength of roads, as well as long-term prevention of cracking.³⁴

Given that asphalt roads encompass over 95% of UK roads, hemp provides a great opportunity for long-term durability.³⁵ The use of hemp in this context does not imply a complete hemp-based asphalt alternative but rather emphasises its role as a small percentage of the total asphalt mixture.³⁶

Not only would this help sequester carbon emissions throughout hemp's growth, but hemp fibre-reinforced asphalt requires far less energy during both production and layout than a pure asphalt alternative.³⁷

The UK currently faces a backlog of carriageway repairs estimated to cost £16.3 billion,³⁸ positioning hemp-reinforced asphalt as a durable, long-term opportunity for structural improvements that could strengthen the integrity of UK roads.

In addition to reinforcing asphalt, hemp shows great promise in the creation of renewable energy sources known as biofuels. Biofuels come from the biomass of plants and provide an important alternative to fossil fuels.³⁹

One example of a biofuel is wood, as it provides heating and lighting, though it releases pollutants into the atmosphere in so doing.⁴⁰ While biofuels, like bioethanol and biodiesel, can be created with plants like corn, the necessity for non-edible plant sources has arisen out of concerns that the use of edible plants could impact food production.⁴¹

Hemp can serve as such a non-edible source of biofuels, as its high biomass makes it ripe for bioethanol production, and its seeds contain large amounts of oil, which can be pressed to make biodiesel.⁴²

The energy potential of hemp is notable when compared to other plants, as the biomass energy yield is double that of wheat and comparable with corn and other edible alternatives.⁴³

As with other hemp innovations, carbon is released during the production of biofuels from hemp, but these biofuels provide a renewable, effective alternative to typical, harmful fossil fuels.



Projecting Hemp's Impact

The UK's construction industry is not on track to achieve Net Zero emissions by 2050, particularly due to high embodied carbon.⁴⁴

This is largely because 80% of the buildings that will be occupied by 2050 already exist, at least, in material form.⁴⁵

Despite this fact, the Net Zero goal is within reach, though it requires embracing unique ways of retrofitting current materials, as well as creating new ones, all with low or negative embodied carbon.⁴⁶

To that effect, a 2021 study identified hemp-based materials, like hempcrete, as effective, achievable means of fulfilling the Net Zero Agenda in construction, as opposed to conventional materials that fall short of meeting necessary targets.⁴⁷

Simply put, hemp, through its low embodied carbon and sequestration properties, opens tangible pathways toward Net Zero targets.



To quantify hemp's potential in decarbonising the built environment, consider a scenario in which 50% of all completed permanent UK dwellings in 2024 (roughly 180,000)⁴⁸ utilised hempcrete as a concrete alternative. Hempcrete, in its entire lifecycle, will sequester up to 108 kg of CO₂ per m₃ of material.⁴⁹

Given that the average house would require roughly 35 m₃ of material in its construction,⁵⁰ this equates to a lifetime carbon capture of up to 3,780 kg of CO₂ for each average hempcrete home.

Thus, if half of the completed dwellings in 2024 utilized hempcrete instead of concrete, lifetime carbon sequestration could be as much as 340,200 tonnes of CO₂, a figure that equates to the greenhouse gas emissions of 79,353 gasoline-powered passenger vehicles driven for one year.⁵¹

Though this scenario is optimistic, it showcases the scalable impact of hemp in decarbonising the construction industry.



Scoping the State of UK Hemp

The UK's Current Regulations

Due to the legal status of cannabis, hemp is regulated under the Home Office, which grants licenses for industrial cultivation of the plant.⁵² Applying for a license primarily entails informing the Home Office of the intended use of the hemp grown, allowing for a DBS check, and providing information about the location of the farm.⁵³ The application portal opens in January and closes on April 1st, making applications submitted after this period likely invalid. The license is granted upon application approval, along with the payment of a £580⁵⁴ fee. After this payment, the license allows for 3 years of growing, along with consenting to occasional checks⁵⁵ from the Home Office throughout this period to ensure compliance. This 3 year duration will be increased to 6 years soon, as per November 2024 reforms, which will likely take hold ahead of the 2026 growing season.⁵⁶ Additionally, the November regulatory changes will allow for farmers to defer a year to better prepare for growing hemp, again likely to come into effect in 2026.⁵⁷

Notably, the Home Office, in November 2024, accepted a recommendation from the Advisory Council on the Misuse of Drugs (ACMD) to increase the legal THC limit in hemp from 0.2% to 0.3%. The THC content in hemp fluctuates due to environmental factors,⁵⁸ and this change mirrors the limits in other countries, including the US, China, and the EU. As such, this change remedies the problem of farmers needing to destroy their crop due to a failed THC test,⁵⁹ risking further criminal prosecution and license suspension. Moreover, UK laws currently necessitate the destruction of both flowers and leaves of the hemp plant, even under the THC threshold,⁶⁰ as these parts have the most significant concentrations of THC⁶¹ and CBD.⁶² This requirement is found in some countries across the globe, though not in the US, Canada, and much of the EU, setting the UK apart as a strict regulator.⁶³



Case Studies

The Home Office, through unclear communication and inefficiencies, have presented farmers with several challenges within the hemp application process. One example is demonstrated by Andre from Waltham Place, who garnered the support of both his local MP and his town council in the process of filling out the lengthy application. However, the Home Office, without explanation, informed him that his DBS check was insufficient for growing hemp. Andre, who used the same DBS check to ensure suitability for housing a child from Ukraine, noted the irony that this “DBS check is sufficient to show my suitability to look after a child from a war zone, but not to grow industrial hemp with less than 0.2% THC.” Not only did Andre financially suffer from this failed application, given the £150 spent on aerial photography and the DBS check, but he also lost 16 hours of his time throughout this unsuccessful application process.



The Home Office, in 2021, additionally rejected the application for license renewal of Josh Dugdale of the Wasing Estate, listing the following reasons as problematic:

- 01 The farm is too close to AWE Aldermaston.
- 02 There are Travellers camped in woods nearby.
- 03 There is a road running alongside the field intended for growing.

Point 1 and 3 were both the case upon the original granting of the application in 2018, while Point 2 seems irrelevant and unduly discriminatory towards an ethnic minority. Put simply, it is not clear what risk hemp poses when being grown near roads, nuclear weapons facilities or temporary Traveller sites.

The Home Office's lack of further explanation or willingness to work with Josh is indicative of the discouraging nature of hemp's regulatory landscape.

Iain Tollhurst of Tollhurst Organic in Reading had similar struggles with the Home Office. His application process began with 6-7 weeks of emails with the Office to establish which fields would be suitable for a successful application. This meant that Iain had to consistently survey his fields with extensive photography, despite already being a busy farmer.

Close to the deadline for applications, Iain had not yet received a response from the Home Office and was tasked with the decision of whether to prep the field for hemp or to prepare his farm for other crops.

This is a common challenge that hemp farmers face on the cusp of the growing season due to a lack of clear communication from the Home Office, compounded by the brevity of the period for license applications. Iain's story, along with Andre and Josh's, demonstrates how the Home Office, through inefficiency and opaque communication, has reduced the UK's potential for carbon sequestration and green innovation.



Private Sector Encouragement

Investments in the UK's green construction industry reached an all-time high of around £5 billion in 2024 and is expected to increase to £13 billion by 2033.⁶⁴

Demand is matching the trends in investment, as sustainability has been a growing focus of consumers in all aspects of purchases, including housing⁶⁵. This combination of increased investment and demand for a sustainable built environment makes it a ripe landscape for the private sector. Business opportunities are only growing, underscored by an increase in UK hemp licenses, from 6 to 136 between 2013 and 2023.⁶⁶ The following sections emphasise the ways in which the private sector can encourage and grow this trend.

Sustainable Investment



A focus on hemp as a sustainable building material is largely aligned with firms seeking recognition for ESG initiatives. Notably, private investment portfolios that emphasise ESG criteria will likely find hemp-based innovations to match their environmental goals. Hemp start-ups benefit greatly from investment considering that the start-up costs for the industry are quite high.

One of the largest start-up costs is the decorticator. While entry-level machines can be found for prices like \$11,000 USD, the quality and speed of hemp processing drastically increases with the money spent, reaching prices of up to \$2-2.5 million USD. Such investment from VCs and other private investors can spur growth in the hemp industry by providing start-ups with the funds and encouragement to grow their firms. This will only encourage more entrepreneurs to become involved in the hemp industry, marking a strong shift towards a green future.

Creating Green Reputations



It is also clear that, through the usage of hemp, many businesses can increase their sustainability profile. This is because companies are beginning to report Scope 3 carbon emissions in their environmental reports.

These emissions encompass the entire supply chain, as well as construction inputs, like concrete.⁶⁷ Utilising hemp as a building material significantly lessens Scope 3 emissions, giving businesses greater recognition for environmental efforts that do not merely cease at immediate emissions.

Marks and Spencer's decision to utilise hemp materials, as well as glulam timber, in the walls of their Cheshire Oaks store⁶⁸ shows that companies are willing to commit to lessening their carbon footprint. Hemp can help with this ambition, and, in so doing, increase companies' credibility as environmentally conscious businesses, a strong consumer consideration.

The BREEAM certification furthers the above sentiment, as it is an assessment tool that rates the green nature of buildings.⁶⁹ Created by the Building Research Establishment, buildings can earn scores from Pass to Outstanding based on a variety of factors.⁷⁰

The BREEAM standard implicitly promotes the usage of hemp in construction by assessing buildings on embodied carbon, indoor air quality, and innovative material use.⁷¹

The pursuit of Excellent and Outstanding ratings encourages the usage of sustainable materials, notably hemp. In 2015, the Bright Building at the University of Bradford, which was built using hempcrete, achieved the highest BREEAM rating for an educational building.⁷² The BREEAM rating, thus, helps recognise the efforts of businesses and other institutions in making a Net Zero future a reality.

Innovative Research Support

The need for further research and development on various hemp-based solutions is strong, and innovative incubators can play a role in helping start-ups, scientists, industry experts, and more do just this. Green-focused innovation clusters like BioYorkshire⁷³ and the Net Zero Industry Innovation Centre⁷⁴ are continually looking for new ways to decarbonise the built environment, providing an opportunity for a focus on hemp. Such support and emphasis from these tech-accelerators can move hemp from a niche building material to a well-tested, commercially attractive option for the construction industry and beyond.



Carbon Credits

Hemp additionally presents a promising opportunity for businesses seeking to earn carbon credits. Given its impressive rate of carbon sequestration, hemp can become a part of the UK's voluntary carbon markets. The government has signalled strong support for expanding carbon credit systems, which grant businesses a greater ability to emit when they take action to offset these emissions, like through afforestation.⁷⁵ Businesses, through growing hemp, would not only reap the benefits of increased carbon credits but would also increase carbon capture by encouraging adoption of hemp innovations across other sectors.





Regenerative Agriculture

Estates throughout the UK are turning towards regenerative agriculture as a means of reducing carbon emissions. The Duchy of Cornwall is one example of a strong commitment to sustainable farming aligned with the Net Zero agenda.⁷⁶ Hemp, given its incredible effects on the natural environment throughout the growth period, fits perfectly with these goals.

As well, hemp can even provide an opportunity for circular exchange: processing hemp on-site for use in in-house projects. In this way, soil regeneration becomes a key component of decarbonising the built environment.

Policy Solutions

The UK's potential to become a leader in hemp is high, and recent political events have made this potential more apparent.

The use of emergency powers to ban hemp in Italy,⁷⁷ as well as state-based hearings evaluating hemp in the US⁷⁸ present opportunities for the UK, under proper regulation, to become a leader in industrial hemp and further decarbonisation efforts. To that effect, policy changes are necessary to ensure such a position, as explored in the following sections.

Whole-Plant Use

The UK is one of few nations still requiring the leaves and flowers of hemp to be destroyed.

This destruction releases GHGs into the atmosphere, as hemp's destruction is commonly carried out through incineration or the plant being mulched and left to decompose. Burning hemp releases carbon dioxide,⁷⁹ while the piles of mulched flowers and leaves, unmanaged, can cause methane and nitrous oxide to be released into the atmosphere.⁸⁰ These harmful effects can be mitigated through non-destructive, currently disallowed disposal means, like composting hemp to allow the soil to sequester carbon in the ground.⁸¹

Moreover, the UK has a regulated CBD market, all the while necessitating that the flower used for CBD products comes from outside of the country. This has created a paradoxical system, whereby the full economic potential of cannabis is outsourced to other countries, while UK hemp farmers have the capacity and willingness to embrace such opportunities. Allowing for whole-plant usage, ultimately, creates both environmental and economic opportunities.



Increasing Seed Availability

Currently, hemp farmers are restricted to using only EU-approved seed varieties.⁸²

This heavily limits experimentation that could lead to greater hemp-based innovation. Hemp is typically bred for specific ends, as different seeds produce varieties of hemp with differing possibilities.⁸³ Especially considering that EU seeds are bred to perform best in their respective mainland European climates, hemp farmers in the UK are restrained in their ability to produce hemp that is apt for the UK conditions it will grow in. To find adequate hemp for construction usage requires the most viable and effective hemp possible, which is difficult under current regulations. Creating a UK-based approval process for seeds would allow for this experimentation, encouraging greater innovation in the hemp industry.

Increased Home Office Efficiency

Regulatory changes for industrial hemp must be underscored by effective processes to allow for clear communication and ease of application for licenses. Though the Misuse of Drugs Act 1971 stipulates that the Home Office takes precedence in governing industrial hemp, the Office has many more pressing concerns that have taken its attention away from the slow, lengthy process of applying for hemp licenses. Currently, the Home Office should emphasise transparent communication throughout each farmer's application, updating its status clearly throughout the process. As well, this would be best done if the application window was not restricted to a three-month period but extended to allow for year-round consideration.

In the long term, transferring oversight of industrial hemp from the Home Office to a more appropriate governing body, like the Department for Environment, Food and Rural Affairs, would enable more informed, effective regulation aligned with the plant's agricultural and environmental potential.

Reforming the THC Limit

Despite the UK's increased THC limit of 0.3%, more can be done to unlock the potential of hemp. Particularly, increasing the limit to 1.0% THC reflects the evolving regulatory landscape. Australia, Thailand, and Switzerland have all made this increase, among other countries.⁸⁴ The change largely serves to broaden the variety of seeds available to hemp farmers in these nations. Many farmers and agricultural scientists have struggled with creating hemp varieties that are fit to their uses, all the while maintaining compliance with the 0.3% limit.⁸⁵ This hinders innovation and leaves farmers with subpar crops. Increasing the limit to 1% additionally reduces the likelihood of accidental non-compliance with regulations, as hemp would be far less likely to breach 1%, as opposed to 0.3%. Making such an increase would set the UK apart from most of its EU neighbours, presenting a distinct advantage for meeting the hemp needs of the built environment. Importantly, doing such would not provide a substantial risk of increased recreational cannabis consumption, as it would allow for a maximum of 1mg for every 1g of raw cannabis. Recreational cannabis purchased in the US tends to have a THC content of 17-28%, ranging to 95%+ in concentrated dabs.⁸⁶ In short, to feel intoxicated from hemp would require consuming a relatively large amount of the plant.



Conclusion

Overall, hemp provides a multitude of opportunities to decarbonise the built environment.

From hempcrete to biofuels, hemp displays a strong potential for sustainable development, allowing for carbon sequestration and a reduction in GHG emissions.

Unlocking the potential of hemp should be a priority for the UK given its legal, binding commitment to be Net Zero by 2050.

This requires private sector encouragement to incentivise and capitalise on growing consumer interest in sustainability trends, as well as amending the current policies of the Home Office to encourage greater hemp production.

Through these changes, a significant step can be made towards making the UK Net Zero.

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About the CIC

The Cannabis Industry Council (CIC) is a leading membership organisation representing the entire UK cannabis industry. Membership is open to organisations and business which either work within or operate from the United Kingdom, the Channel Islands, and the Isle of Man.

Together, our mission is to lead the industry to success and enable it to speak with one voice – for, and by, the sector.

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and hemp sector
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Contact

Cannabis Industry Council
64 Nile Street
London N1 7SR

enquiries@cicouncil.org.uk
cicouncil.org.uk





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cicouncil.org.uk