That the Legislative Council requires the Economy and Infrastructure Committee to inquire into, consider and report, by 15 November 2023,
https://new.parliament.vic.gov.au/get-involved/inquiries/hempindustry/submissions/
on —

1. issues, barriers and opportunities within the current Victorian industrial hemp industry;
2. the current Victorian industrial hemp industry compared to other relevant jurisdictions;
3. the constraints and confounders to expanding the industrial hemp industry in Victoria;
4. the environmental benefits and costs of an expanded industrial hemp sector;
5. how industrial hemp can be best utilised to assist Victoria in meeting emissions reduction targets;
6. how the Victorian government could support industry development and growth across Victoria;
7. whether the regulatory and licensing framework for hemp cultivation and hemp products may be streamlined to benefit the expansion of the industrial hemp industry, including but not limited to the introduction of a standalone industrial hemp act;
8. key elements for the potential development of a hemp industry plan for Victoria; and
9. any other relevant matters.

These are my comments under each heading

1. issues, barriers and opportunities within the current Victorian industrial hemp industry
Industrial Hemp originated in the cold temperate to temperate climate zones of the northern hemisphere. It has extended into the Mediterranean Region. The main production zones are now Canada, Europe and North China. The implication is that a tract taking in southern Australia incl Tasmania, and northern NSW and southern QLD presents, a suitable summer climate for many existing varieties provided adequate irrigation (⇔4 ML/ha) is available . Attempts to grow hemp in the tropical North are proving somewhat successful, but have yet to blossom forth.

Frost kills hemp plants**. The daylight:night cycle** in this region will induce flowering in late summer (important for grain and seed production). **Rain** falls mainly in the winter. Hemp is a summer crop which means that crops require irrigation through all or part of the growing window (October to April).

The 2022-23 season was poor nationally (2400 MT) because crops across the country were killed by inundation or were not sown. The 2021-22 harvest was double this total.

The industrial side awaits guaranteed yields and quality. The market for products remains somewhat dormant, but there is a lot of latent interest, especially in the building industry. The demand for grain production has reached its peak. Cheap imports from China remain a challenge.

2. the current Victorian industrial hemp industry compared to other relevant jurisdiction
Victorian farmers contributed about 8% of Australia's hemp harvest in the 2022-23 season.

The small Victorian industry operates under the same constraints as those of other jurisdictions with minor variations*. They are a deterrent to farmers because they are expensive and they also include elements that farmers cannot control (e.g., THC concentration in the terminal leaves at harvest. This varies according to the climatic conditions experienced by the crop and the date at which inspectors took the sample).*

If the Victorian Government wishes its State to benefit from the unique qualities of industrial hemp the mind set has to change. Currently many people still think of industrial hemp as potential source of narcotics. Industrial hemp per se *is* ***just another arable crop****.*

3. the constraints and confounders to expanding the industrial hemp industry in Victoria
Victoria has the potential to equal and better Tasmania and NSW in terms of ihemp production if the market for products appears. The **ongoing problem** is the need to synchronise production and processing.

The requirement is for an industry that is organised **into hubs** owned by **individual commercial entities** that are:

- **vertically and horizontally orientated and where the owners of the on-farm production process are part of the enterprise as a whole. (Currently farmers are excluded from benefitting from the high profits that can be achieved at the other (retail) end of value chain**)
- have all the facilities (dryers, decorticators, fibre cleaners, etc.) close together, and are also in close proximity to the dedicated farmland so as to reduce transport costs
- close to convenient road and rail links to major urban centres, an airport and docks.

- Ideally hemp will be processed to provide biofuel or electricity so that access to the state power grid would have to be built in.

More simply, the processing units are surrounded by the farms that supply them. Hemp crops have to be rotated (grown in a crop cycle meaning - *never hemp after hemp*), so that this system would accommodate one or more set of crop products to achieve maximum efficiency.

Such hubs are obviously best located near to large centres to promote retail sales, including farm shops – outer Melbourne (?Sunbury), Geelong/Werribee, Hamilton, Mildura) close to suitable (irrigated farm land) farmland.

4. the environmental benefits and costs of an expanded industrial hemp sector
Hemp production is less pollution than that of many crops. When grown for its biomass it requires no or only small amount of pesticides (i.e., some herbicide and a small amount of fungicide to protect the seed). It does require fertilizer. Hemp is a cleansing crop and is therefore beneficial within a rotation because it reduces soil-borne disease propagules.

5. how industrial hemp can be best utilised to assist Victoria in meeting emissions reduction targets

Hemp crops sequester carbon faster and in larger quantities than any other crop plant or forest tree. A potential of 20-30 or more MT harvested dry matter/ha in 5 months. This resource can be pyrolised to biodiesel, or converted to hydrogen or ethanol. This translates to as much as 11-16 MT carbon, sequestered in 5 months by the whole plant (= roots, leaves, stems and trash).

The sequestered carbon can be locked up in e.g., building material (hempcrete, hemp blocks) and embedded in plastic or converted into useable energy.

The production process of energy crops can, for instance, be linked to sewage treatment facilities as sources of water. Microbial *(E.coli*) and heavy metal contamination are not issues in the bioenergy sector (as is the case for food production and the manufacture of building materials).

5. how the Victorian government could support industry development and growth across Victoria

a) Stimulate research aimed at enhancing the productivity of this crop across the mainline Universities, with the Department of Agriculture and the private sector. (See the Agrifutures GAP analysis for hemp crops).
b) Switch to hempcrete and hemp blocks and replace natural timber hemp composites for Government buildings.
c)
d) Promote hemp weed mating in its plant nurseries (replacing non-degradable black plastic mulch).
e) Promote hemp products for recyclable food packaging,
f) Substitute hempcrete for concrete when specifying street furniture.
g) Encourage a hemp-based biofuel industry.
h) Switch to hemp fabrics for uniforms for first responders (firefighters, police and ambos).

(Thanks to Mr Charles Kovess of the Australian Industrial Hemp Alliance for b to h)

7. whether the regulatory and licensing framework for hemp cultivation and hemp products may be streamlined to benefit the expansion of the industrial hemp industry, including but not limited to the introduction of a standalone industrial hemp act

Participants in the industry are bemused by the regulations govern hemp production and processing. For instance, those that that restrict livestock from being fed hemp plants because minute traces of THC may be found in their flesh. This needs to be re-rationalized. Nobody is going to get high from eating roast lamb containing minute amounts of THC. Meanwhile farmers and their animals are excluded from an excellent stock food and the legislators wisdom is challenged.

8. key elements for the potential development of a hemp industry plan for Victoria

Simplify, or better, deregulate, the industry. Encourage the development of 'Hemp hubs'. Give hemp the same amount of support as cotton – it is a lot more versatile.

9. any other relevant matters

Dr John A Wightman
[redacted]

11 August 2023

John Wightman is an agricultural scientist who has focused on providing farmers in New Zealand, Australia, Africa, Asia, and the Pacific with science based solutions to their crop production problems.

He has worked with eastern Australian hemp growers for 12 years (Townsville to Tasmania). He has been a fulltime consultant since he was instrumental in staging the first hemp farmers' workshop in the Hunter Valley in 2018.

He is now resident in Melbourne and will be pleased to provide further in-depth information to the Economy and Infrastructure Committee on this subject