



GOVERNMENT OF KHYBER PAKHTUNKHWA
CLIMATE CHANGE, FORESTRY, ENVIRONMENT
AND WILDLIFE DEPARTMENT
(SECTION ENVIRONMENT)

NOTIFICATION

Peshawar Dated the 25/07/2025

No. SO(ENVT)/CCFE&WD/1-8/EPC-2025: In exercise of powers conferred under Clause xxii of Section 7 of the Khyber Pakhtunkhwa Environmental Protection Act, 2014, (Khyber Pakhtunkhwa Act No. XXX of 2022), the Khyber Pakhtunkhwa Environmental Protection Council (EPC) in its 3rd Meeting held on 13.05.2025 has been pleased to approve the following guidelines for General Environmental Approval (GEA);

GUIDELINES FOR TOBACCO KILNS

What is Tobacco:

Tobacco is the common name of several plants in the genus Nicotiana of the family Solanaceae, and the general term for any product prepared from the cured leaves of these plants

or

Tobacco is a plant that contains nicotine, an addictive chemical, and is used to make products that can be smoked, chewed or sniffed.

What is a Kiln:

A furnace or oven for burning, baking or drying OR An oven, furnace, or heated enclosure used for processing a substance by burning, firing, or drying.

Tobacco Kiln:

A tobacco kiln is also known as oast. Tobacco kilns are used to cure tobacco through a process called flue-curing. In this process, tobacco is hung from tier poles in the kiln and heated slowly over the course of a week.

The province of Khyber Pakhtunkhwa is suitable for processing relatively good quality of tobacco due to its more appropriate agronomic & soil conditions. The main areas where tobacco is grown are Mansehra, Charsadda, Mardan, Swabi & Buner which are favorable places for its cultivation. And among these mentioned districts, the District Swabi covered the largest area under tobacco cultivation which accounted around 37% of the total area under tobacco cultivation in the province.

Tobacco must be dried after harvesting to protect it from decay during transport, storage and processing. The tobacco growers hang green leaves of Virginia tobacco in specialized curing



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greenhouses / barns / kilns and use heated air to dry the green leaves. The tobacco drying and curing process is completed in one week and growers in Pakistan commonly burn wood to heat the air circulated in the barns. In Pakistan, some farmers have reforested small areas with eucalyptus plantations to ensure their own supply of fuel wood but mainly they are dependent on wood from wild forests.

Tobacco Curing Methods

Curing is a carefully controlled process used to achieve the texture, colour and overall quality of a specific tobacco type. During the cure, leaf starch is converted into sugar, the green colour vanishes and the tobacco goes through colour changes from lemon to yellow to orange to brown like tree leaves in autumn.

There are four main curing methods.

1- Flue-Cured Tobacco:

The most common curing process is known as flue-curing used mainly in the manufacture of cigarettes, the most common type of flue-cured tobacco is Virginia. This tobacco is also known as 'bright tobacco' because the heat-drying process gives the leaves a bright, golden colour. The most grown tobacco variety in the world Flue-cured tobacco is dried in a closed building with furnace driven heat directed from flues or pipes that extend from a furnace into the barn. The temperature of the furnace is gradually raised until the leaves and stems are completely dried. Flue-curing takes about a week and fixes the natural sugar of the leaf, which has a high sugar and a medium-to-high nicotine content. Racks of tobacco are placed in bulk barns where heat and ventilation are controlled while air is forced through the leaves. Flue-cured varieties require warm weather, humidity, light rainfall and a sandy, loam soil for their four-month growing season.

2- Air-Cured Tobacco:

Some tobacco leaves are air-cured following their harvest. Air-cured tobacco is traditionally cured hanging in structures with a roof, but with open sides to allow air to freely circulate. As with flue-curing, the aim of air-curing is the timely removal of moisture from tobacco leaves. This process takes four to eight weeks: If cured too fast, the leaf will become patchy, if cured too slowly, the leaf will rot away. Commonly, air-cured tobacco is subdivided into dark air-cured and light air-cured tobacco. Burley is the second most popular tobacco in the world, belonging to the light air-cured variety. Burley, also known as White Burley tobacco, is primarily used to make cigarettes and aromatic blends, whereas dark air-cured tobaccos are mainly used in the production of chewing tobacco and snuff. Burley is a slightly smaller plant than the flue-cured Virginia type, but with similarly broad leaves. Once picked, its



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leaves are dried naturally – or 'air-cured' – without the use of extra heat. This gives the leaves a light brown to mahogany appearance and very low sugar content. Burley tobaccos are somewhat cigar-like in taste and appearance, lending themselves to the production of flavoured, blended cigarettes commonly referred to as "American". Burley tobacco can be grown in limestone soils and requires only light fertilizer.

3- Fire-Cured Tobacco:

Although curing methods may vary, all fire-cured tobaccos are subjected to wood smoke to dry the leaves. It is the type of wood used to smoke the tobacco leaves and the amount of smoke exposure that gives fire-cured tobacco leaves their distinctive flavors. Fire-cured tobacco, generally darker in colour, is used mostly for pipe tobacco mixtures, snuff, and chewing tobacco and has a low sugar but high nicotine content. Fire curing uses an enclosed barn similar to that used for flue-curing. Small fires are built on the floor, and the leaves cure in a smoke-laden atmosphere. Whereas flue-curing takes about a week, fire curing, using far lower temperatures, may take from a few days up to 4 weeks. Fire-cured tobacco is dried with low-burning wood fires on the floors of closed curing barns. The leaves have low sugar content but high nicotine content. Fire- cured tobacco is a robust variety of tobacco used as a condimental for pipe blends, cigarettes, chewing tobacco, snuff and strong-tasting cigars.

4- Sun-cured Tobacco:

A comparatively small amount of tobacco is sun-cured. Leaves are exposed to the sun to remove most of their moisture before being air-cured to complete the process. Of all sun-cured tobaccos, the best known are the so-called Oriental tobaccos of Turkey , Greece , Yugoslavia , and Balkans. A more labour-intensive product to harvest, Oriental tobacco is characterised by high aroma from small leaves, being low in both sugar and nicotine. The leaves are mostly sun-cured. Usually, the larger the leaf, the milder the aroma. Hence Oriental tobacco is regarded as expensive to harvest by many tobacco manufactures. Oriental tobaccos are often grown in poorer soils in southern Europe and the Middle East.

Types of Tobacco grown in Pakistan

There are five types of tobacco grown in Pakistan including:

- Flue Cured Virginia (FCV)
- Dark Air Cured (DAC)
- Light Air Cured (LAC)
- Light Sun Cured tobacco (LSC)
- Semi-Oriental or White Patta (WP)

Environmental Impacts of a Tobacco Kiln:



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- In developing countries like Pakistan, forests are often harvested to provide space for tobacco cultivation.
- More forests are cleared (deforestation) to provide fuel for tobacco drying and curing process.
- Clearing of forests results erosion of fertile soil (soil degradation), change in temperature, loss of biodiversity etc.
- Improper disposal of tobacco wastes (leaves & other plant parts).

Mitigation Measures:

- Regulate the barn using a wet-bulb thermometer. Ventilate only enough to hold humidity down (wet bulb temperature); the wider the vent opening, the more fuel that is consumed.
- Harvest only ripe tobacco; shorter curing times mean less heat loss and more efficient curing.
- Stop hot air leaks; check door gaskets and structure for cracks.
- Add insulation; well insulated walls, roof and floor can save 10 to 20% of fuel consumed per cure.
- The kiln shall be installed in a well ventilated area.
- Never operate in an enclosed space, such as a closet, without proper ventilation to avoid fire hazard.
- Ventilation shall be to the outside.
- The kiln shall be constructed away from populated area, educational institutes, health care facilities etc.
- The companies involved in manufacturing and marketing of the products made from the tobacco shall encourage local farmers for plantation / afforestation in order to reduce the pressure on natural resources / forests. And the companies shall also allocate a sufficient amount under the CSR for block plantation in consultation with Forest Department.
- The solid waste produced shall be disposed off at TMA designated dumping sites.
- Forest department may impose complete ban on illegal cutting of trees.
- Alternate source of energy shall be used for curing process (i.e., Natural Gas/ CNG, LPG, LNG etc.).
- Proper PPEs shall be provided to the workers involved in the curing process.



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ENVIRONMENTAL ASSESSMENT CHECKLIST

- 1- Name of the owner of Tobacco Kiln _____
- 2- Complete Address _____
- 3- Tehsil _____ 4- District _____
- 5- Police Station _____ 6- CNIC # _____
- 7- GPS Coordinates: N: _____, E: _____
- 8- Total cost of the project (Tobacco Kiln) including constructional cost: _____
- 9- Space occupied by the tobacco kiln _____
- 10- Capacity of the kiln (weight of the leaves for curing) _____
- 11- Source of Energy / fuel _____, 12- Current Land Use: _____
- 13- Amount of energy / fuel required per cycle _____
- 14- Detail of PPEs _____
- 15- Distance of the kiln from:
 - i- Human Settlement: _____
 - ii- Educational Institutes: _____
 - iii- Health Care facilities: _____
 - iv- Agriculture Fields: _____
- 16- Solid waste disposal mechanism _____
- 17- Any Approval obtained from Govt. Department? _____
- 18- Any idea about alternate source of energy for curing purpose? _____
- 19- Life span of a tobacco kiln _____
- 20- Any plantation plan _____
- 21- Detail about storage of the cured plants/leaves _____
- 22- Detail about ventilation system inside the kiln _____

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Secretary to Govt. of Khyber Pakhtunkhwa
Climate Change, Forestry, Environment & Wildlife
Department

No. SO(ENVT)/CCFE&WD/1-8/EPC-2025:

Copy for information to:

1. All members of Environmental Protection Council (EPC) Khyber Pakhtunkhwa
2. PS to Secretary Climate Change, Forestry, Environment & Wildlife Department, Khyber Pakhtunkhwa


Muhammad Ishaq
Section Officer (Environment)