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 NEW IRRIGATION CANALS/ CHANNELS WITH LENGTH OF 10 KM AND ABOVE (OR) SERVING 15,000 HECTARES AND ABOVE

Glossary

S.NO	Term	Definition
1	**Agency**	Khyber Pakhtunkhwa Environmental Protection Agency
2	**Arid Zone**	Area Receiving no rain or less rain
3	**Environment**	(a) Air, water and land; (b) All layers of the atmosphere; (c) All organic and inorganic matter and living organisms; (d) The ecosystem and ecological relationships; (e) Buildings, structures, roads, facilities and works; (f) All social and economic conditions affecting community life;
4	**Habitat**	The general place or physical environment in which a population lives
5	**hydrology**	The branch of geology that studies water on the earth.
6	**Non-perennial stream**	Stream not flowing throughout the year.
7	**Tropical environment**	The humid and seasonal wet areas
8	**Sustainable Development**	Development that meets the needs of the present, without compromising the ability of future generation to meet their own needs.
9	**siltation**	Accumulation of silt in water bodies
10	**Soil Erosion**	Removal of soil either by wind or water.
11	**Impact on Environment**	Any effect on land, water, air or any other component of the environment, as well as on wildlife harvesting, and includes any effect on the social and cultural environment or on heritage resources.
12	**Mitigation Measure**	Measure for the control, reduction or eliminationof an

		adverse impact of a development on the environment, including a restorative measure
13	**Flora and fauna**	The plants and Animals
14	**GIS**	Geographic information system
15	**Remote areas**	Areas that are far away from cities
16	**Cumulative impacts**	Those impacts that result from the successive, incremental, and/or combined effects of an action, project, or activity (collectively referred. to as developments") when added to other existing, planned, and/or reasonably anticipated future ones.
17	**Indigenous species**	Specie that found in a certain ecosystem due to natural processes such as natural distribution.
18	**Water logging**	The rising of water table over time

1. Introduction

A canal is an artificial channel, generally trapezoidal, constructed to convey water from rivers, reservoirs, etc. for several purposes like irrigation, power generation, navigation, etc. Canals utilized for irrigation are the primary waterway that brings the water for irrigation from the main source to the areas to be irrigated. These artificial channels are constructed with stone, concrete, brick, or a flexible membrane to prevent seepage and erosion.

Irrigation canals or water channels is an open waterways whose main function is to convey water from one place to another and are referred to as main waterways supplying water to one or more farms.

2. Types of Canal Irrigation

Irrigation canals are classified into different types based on various factors which are as follows:

1. Based on the Nature of the Supply
2. Based on the Functions
3. Based on the Type of Surface Soil
4. Based on the Canal Alignment
5. Based on Financial Output
6. Based on Discharge

3. Objectives of the Guidelines:

These guidelines are designed to ensure that all potential environmental issues pertaining to the construction, operation and closure of Irrigation canals are adequately well assessed and addressed. Also, these guidelines will assist in sustainable project planning, permitting, and implementation for both project developers and regulators. These guideline aims to provide directions to project proponents, developers and regulators for the appropriate identification, assessment and evaluation of all potential environmental issues pertaining to irrigation canal/ channels projects.

4. **Project Justification**

The project proponent shall provide necessary and adequate information on the justification of the project. This shall include a summary of the report of the Project's feasibility study; the need, value and sustainability (social, cultural and economic) of the Project. Such justification shall expressly define the benefits of the Project to its intended end-users and indicate the over-riding advantages or positive impact of the Project over its anticipated environmental impacts. The justification may also include the rationale for selecting the Project amongst various available options or alternatives and any socio-economic factor's justifying the Project.

5. **Project Description**

The proposed irrigation canal project should be described in details. Description should include a schematic process diagram and a layout of the facility which should be detailed. The feasibility study should also report a description of the development in relation to the local environment as follows:

- Description of the main characteristics of the operational process with diagrams, plans and maps.
- A description of indication of the physical presence and appearance of completed development within the receiving environment.
- The land area to be taken by the development with its location clearly defined on a map.
- The uses to which the land will be put should be described.
- The estimated duration of the construction phase, operational phase and where appropriate, decommission phase should be given.
- The number of workers and/or visitors entering the site during construction and operation should be estimated. The access to the site and likely means of transport should be given.
- The means of power evacuation.
- An estimate, by type and quantity, of expected residues and emissions (heat, noise, vibration, light, radiation, air water, and soil contamination/pollution, etc.) resulting from construction and operation phases of the proposed project.

6. **Description of Project Environment/Baseline Study**

A detailed description of the existing environmental status, in terms of the biophysical and human environment, in which the proposed irrigation canal is to be sited. The methods and investigations undertaken for this purpose should be disclosed and be appropriate to the size and magnitude of the project. The baseline data (primary and/ or secondary) shall be collected and interpreted to describe the proposed project area. The description shall include, but not limited to, geographic location, topography and elevation, climatic conditions and the ecological characteristics of the project area. **Table 1** below gives a detailed description of some relevant environmental components to be examined while describing the Environment.

Table 1: Environmental Components and Indicators of Existing Environment

S.NO	Environmental Components	Indicators
1	Climatic variables	Climatic zone Climate variability and Extreme events Climate change projections

		Solar Radiation Temperature (air and land surface temperature) - pattern, seasonality and trend Rainfall – Pattern, amount, trend Prevailing wind – direction, speed
2	Topography	Drainage pattern, elevation and slopes this can be presented with a digital elevation model, Specific landform types, etc.
3	Soil	Type, properties and characteristics
4	Water	Availability and abundance Water quality Wastewater discharges Waste discharges, etc.
5	Air	Ambient air quality (for gaseous and particulate pollutants)
6	Biological	Flora – type, density, exploitation, etc. Fauna – distribution, abundance, rarity, migratory, species diversity, habitat requirements, habitat resilience, economic significance, commercial value, etc. Fisheries – migratory species, species with commercial/ recreational value, etc.
7	Land Use	Land use pattern, actual and projected, specially designated areas, manmade features, incompatible land use attributes (e.g. public water supply, tourism site, etc.), ESAs – sensitivity (distance, area and significance).
8	Socio-Economic Factors	Demography details of all project affected communities, economy (employment rate, income distribution), services (types, capacity, and adequacy), housing, etc. cultural

7. Associated and Potential Environmental Impacts

The identification, prediction and evaluation of potential impacts of the project on the environment should be investigated and described. The impacts should be broadly defined to cover all potential effects on the environment.

a. A description of direct impact and any indirect, secondary, cumulative, short, medium and long-term, permanent and temporary, positive and negative impact of the project should be addressed.
b. The types of impact in (a) above should be described with regards to human beings, flora and fauna, soil, water, air, climate, land, cultural and interactions amongst them.
c. Impacts during construction and operation phases should be considered including impacts that might arise from non-standard operating conditions, accidents etc.
d. Predicted impacts should be derived from baseline conditions as to prevail as a consequence of the project.
e. Identification of impacts should be by a systematic methodology such as project specific checklists, matrices, overlays, Ad-hoc, networks, geographic information system (GIS), expert opinion, etc.
f. A brief description of the impact identification method should be described and the rationale for using it.
g. The significance of impacts should be assessed, taking into account appropriate national and international standards where available. Consideration should also be made for magnitude, location and duration of the impacts. The choice of significance assessment should be justified and any contrary opinion elaborated upon.
h. The feasibility study for irrigation canal project should also consider the cumulative impacts that could arise from a combination of the impacts due to other projects, especially impacts that has to do with the human component (socio-economics) of the environment, with those of other existing or planned projects in the surrounding area and including residual impacts.

8. Mitigation Measures for Potential Impacts of Solar Energy Projects

a. Conduct pre-disturbance surveys as appropriate to assess the presence of sensitive areas, fauna, flora and sensitive habitats;
b. Plan visual impact reduction measures such as natural (vegetation and topography) and engineered (berms, fences, and shades, etc.) screens and buffers;
c. Utilize existing roads and servitudes as much as possible to minimize project footprint;
d. Site projects to avoid construction too near pristine natural areas and communities;
e. Locate developments away from important habitat for faunal species, particularly species which are threatened or have restricted ranges, and are collision-prone or vulnerable to disturbance, displacement and/or habitat loss;
f. Fence sites as appropriate to ensure safe restricted access;
g. Ensure dust abatement measures are in place during and post construction;
h. Develop and implement a storm water management plan;
i. Re-vegetation with appropriate indigenous species to prevent dust and erosion, as well as establishment of alien species.

Environmental Assessment Checklist

Section-I

File No _____

Date _____

General Information

1. Project Name or Title _____
2. Project Proponent (Department, organization, or owner) _____
3. Address _____
4. Telephone _____
5. E-mail _____
6. Representative of the Proponent _____
7. Designation _____
8. Name of the person who conducted this assessment _____
9. Designation _____

Project Information

10. Project Location & GPS Coordinates _____
    a. Khasra No _____
    b. Village/Mouza _____
    c. Tehsil _____
    d. District _____
11. Cost of the Project _____
12. Area of the proposed land for the project

    Total _____ m^2

    Proposed covered _____ m^2

    Open space _____ m^2
13. Brief Project Description _____
14. Design production capacity of the unit _____
15. Number and type of qualification of required staff to run the project? _____

Construction

16. Who owns the proposed land for the project? _____

17. What is the present use of the land? _____
18. Are there any settlements on the land? _____
19. If yes, please specify
    Number of settlements _____
    Will any compensation be paid to them? _____
20. Are there any structures on the proposed site now? ☐ Yes ☐ No
21. Are there any trees on the proposed site? ☐ Yes ☐ No
22. Will any tree be removed? ☐ Yes ☐ No
23. If yes, how many? _____
24. Period of construction (start and end dates) _____
25. Is construction work during the night planned? ☐ Yes ☐ No
26. Is the proposed project located in an ecologically sensitive area? ☐ Yes ☐ No
27. Describe the terrain of the project area:
    ☐ Flat or Level (Slope < 3%)
    ☐ Level to moderately steep(Slope 3%-30%)
    ☐ Moderately steep to mountainous (Slope > 30%)

Mitigation Measures

28. Are there signs of soil erosion or landslide anywhere within 500 m of theproposed site?
    ☐ Yes
    ☐ No
    If yes, please describe (where, nature) _____
29. Is there any surface water body (river, canal, stream, lake, and wetland) within1,000 m of the proposed site?
    ☐ Yes
    ☐ No
    If yes, describe each water body:

Name (including type, i.e., river, canalor stream)	**Dimensions**	**Status and Uses** (Is it polluted? Is domestic or other wastewater discharged to it? What are its uses, e.g., agriculture, domestic, industrial, washing, fishery?)

30. Is there any groundwater well on the proposed site or within 500 m of the proposed site?
    ☐ Yes
    ☐ No
    If yes, describe each well:

Type (Dug well, tube well, hand pump)	**Location** (Village, road, mohalla, etc. and distance from the site)	**Depth and Yield**	**Uses** (Drinking, agriculture, domestic, industrial, washing, livestock)

31. Are there any reserved forest or protected area within 1,000 m of theproposed site?

☐ Yes
☐ No

If yes, please describe?_____

32. What is the present land use in the vicinity (roughly a radius of 500 m) of theproposed site?

S.No.	**Residential** (Thick, Moderate, Sparse)	**Commercial** (Office, Shops, Fuel Stations)	**Open Land** (Parks, Farmlands, unutilized plots, barren land	**Industrial**	**Other**
Description					

33. For any agricultural farmland on the proposed site and a radius of 500 m around it, provide the following information:

Main crop(s) and average yield _____ Source of irrigation water_____

Area affected by salinity or water logging _____

34. Roughly, how many houses are within a radius of 500 m of the proposed site?

_____

35. What is the total population of the area?_____

36. What proportion of the houses in the area are *pukka, semi-pukka, and* kucha? _____

What are the main sources of income of the surrounding community?

_____

37. Is there any site of cultural importance (graveyard, shrine, mosque,archeological site, etc.) within 1,000 m of the proposed scheme?

☐ Yes
☐ No

If yes, please describe?_____

Section-III **Environmental Management Plan**

1. Constructional Phase:
2. Operational Phase:

Section –IV **Documentation**

1. Location plan of the project
2. Site plan of the project
3. Landownership Documents
4. Copy of lease or rental agreement of land or property
5. Copy of NOC from Wildlife Department (if any)
6. Copy of NOC from Forest Department (if any)
7. Copy of CNIC of the Focal Person/Representative of the proponent
8. Copy of CNIC consultancy Firm/ the person who conducts the assessment.

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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

20/8/25
Muhammad Ishaq
Section Officer (Environment)