



Ministry of Water Resources  
Government of Pakistan

وزارت آبی و مسائل حکومت پاکستان

# YEAR BOOK

FOR THE PERIOD 2017-18, 2018-19 & 2019-20



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## PREFACE

As required under Rule 25(2) of the Rules of Business, 1973, each Ministry / Division of the Federal Government is required to prepare a Year Book of the of the activities, achievements, progress and programs undertaken during the preceding FY. In pursuance thereof, MoWR has prepared the year book for the FYs 2017-18, 2018-19 and 2019-2020 which entails the details of its performance and achievements executed through various Wings/Departments and Autonomous Bodies under its administrative control. Consequent on the creation of MoWR the activities initiated during the period 2017-18 were in line with the Mission Statement of the Ministry and the functions/business assigned to it as per the RoB, 1973. It describes the processes of high impact water and hydro power development projects that play an essential role in employment generation and growth in national economy, being the ultimate purpose.

In line with the Prime Minister's vision for efficient water resources management and cheap energy for competitive growth and enhanced agricultural productivity, work on a number of mega projects have been launched which were struck up on account of multiple issues since long. The economic cost of indecision on such mega projects was terrible besides flood havoc and other incidental losses.

The year book is brief in contents and material but lucid and comprehensive in understanding. It would provide the readers an opportunity to know about various projects presently undertaken by MoWR or in pipeline to be initiated in the near future all over the country



for the development and management of water and hydropower resources to address the challenges of water security leading to food, agriculture, mankind and energy security.

The main objective of writing this book is to flag some of the most significant challenges to ensure adequate under supply in Pakistan and offer recommendations for improvement. MoWR presents this year book to the general public and the researchers with the hope that they will find it as a valuable reference and would sufficiently address the queries regarding the importance of water.

**"SAVE WATER SAVE PAKISTAN"**



## INTRODUCTION

### 1.1. Mission Statement

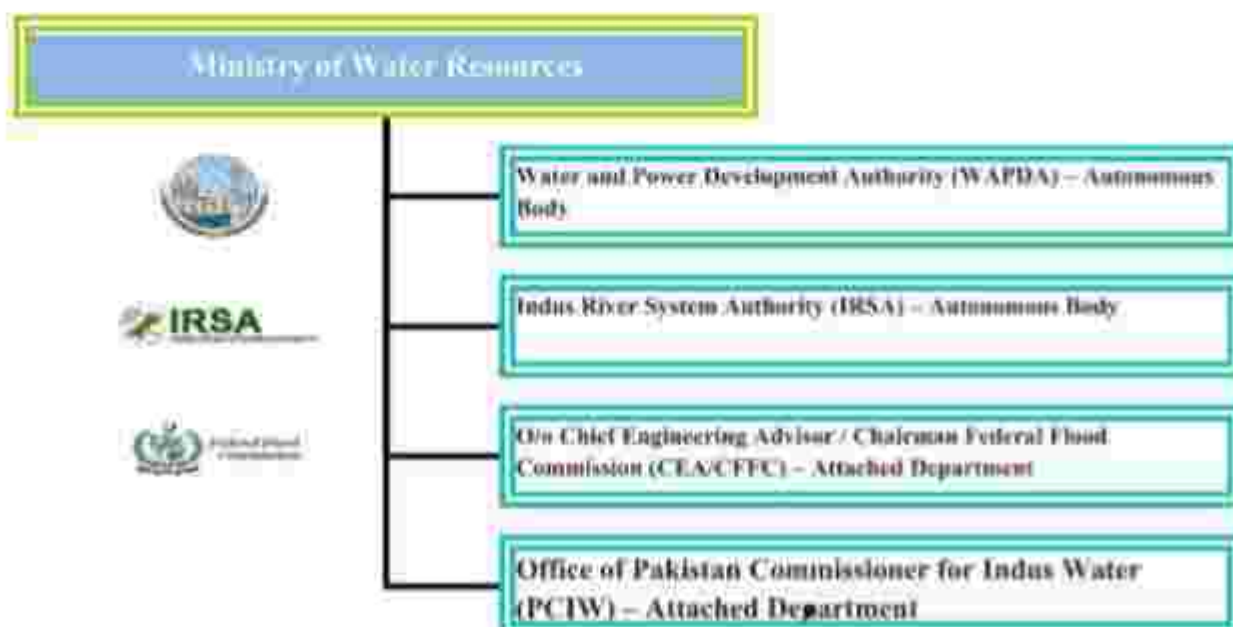
Development of country's water and hydropower resources to meet current and future challenges of water shortage and provision of affordable, environmental friendly renewable energy, act as catalyst in the implementation of the National Water Policy by taking all stakeholders on board, through creativity, initiative, innovation and technology.

### 1.2. Background

In August, 2017, the erstwhile Ministry of Water & Power was bifurcated into two Divisions i.e. Water Resources Division and Power Division. The Water Resources Division was placed under the newly created Ministry of Water Resources whereas the Power Division was placed under the new Ministry of Energy. Consequent upon the bifurcation and creation of Ministry of Water Resources, an amendment in schedule-II of the Rules of Business, 1973 was also made wherein the following functions / business were allocated to it:-

- i. Matters relating to development of water resources of the country
- ii. Indus Waters Treaty, 1960 and Indus Basin Works
- iii. Water & Power Development Authority (WAPDA)
- iv. Liaison with International Engineering Organizations in water sectors
- v. Federal Agencies and institutions for promotion of special studies in water sectors
- vi. Institute of Engineers, Pakistan
- vii. Administrative control of tube well construction company
- viii. Indus River System Authority (IRSA)
- ix. Pakistan Trans-border Water Organization

### 1.3. Organizations under the Administrative Control of MoWR



#### 1.4. Organogram



### INTERVENTIONS BY MoWR

#### 1.5. Policy Interventions:

##### i. Approval of National Water Policy:

Pakistan's first ever National Water Policy was approved by the Council of Common Interests on 24 April, 2018. On the same day, Pakistan's Water Charter was signed between the Prime Minister of Pakistan and the Chief Ministers of the four Provinces, whereby the top echelon of the country made its pledge to give water sector its due priority. In the light of NWP-2018, following strategic priorities have been identified that are of critical importance to the water, energy and food security of Pakistan. These include:

- Conservation and Efficiency;
- Storage;
- Leveraging Technology;
- Renewable Energy;
- Integrated Water Resource Management;
- Comprehensive Regulatory Framework;

##### ii. Studies Under WCAP:

Under Water Sector Capacity Building and Advisory Services Project (WCAP), a World Bank funded Project, the following studies were conducted:

- Evaluation of Past and Present Resettlement Plans in Pakistan in the Context of International Best
- Development of GIS/MIS Centre and Decision Support System to Enhance the Capacity Building of

- Practices Leading to Formulation of Improved Resettlement Plan
- Strategy for Sectoral Environmental and Social Assessments of the whole Indus Basin
  - Nation-wide study of Groundwater Availability and Conjunctive Management
  - Studies and Policies for Benefit Sharing on Hydropower projects among Stakeholders.
  - Handbook on Water Statistics of Pakistan
  - Feasibility Study of Underground Dams
  - Institutional Assessment of IRSA
  - Capacity Needs Assessment of MoWR and Line Agencies of WCAP
  - Feasibility Study of Small Dams and Water Storages
  - Development of National Flood Protection Plan-IV (NFPP-IV) and Related Studies to Enhance Capacity
- Indus River System Authority (IRSA)
  - Improvement of Water Resources Management of Indus Basin to Enhance the Capacity Building of Indus River System Authority (IRSA)
  - IBMR & Database and Strengthening of Flow Forecasting System
  - Agro-Economic Farm Survey
  - Sediment Management Study of Tarbela Reservoir
  - Preparation of Detailed Engineering Design, Tender Documents and PC-I of Tarbela 4th Extension Hydropower Project Units 15 & 16 (960 MW)
  - Consultancy Services for Dasu Hydropower Project
  - Hydrological Modelling and Flow Forecasting of Kabul River Basin

### iii. Institutional Strengthening:

The sanctioned strength of the Ministry was initially 24 (Officers & Officials) which was not enough to cater for the ever increasing work load. The Ministry, thus took up the matter with the concerned quarters for its strengthening so that due consideration could be given to important water and hydropower sector development projects, being the backbone of the national economy. The strength was subsequently raised to 65 (16 officers in BS 17-22 and 49 officials in BS 1-16) during FY 2017-18.

Meanwhile, a meeting on "Water Issues" was held in May, 2019 under the chairmanship of the Prime Minister of Pakistan wherein directions for conducting capacity audit of the Ministry were given to the Management Services Wing of the Establishment Division. Marathon meetings in this regard were held to know the exact requirement of the Ministry vis-à-vis the business allocated to it as per the Rules of Business, 1973 and the critical importance of water where its scarcity has reached to an abysmal level around the world including Pakistan.

After thorough deliberations, MS Wing submitted its report in October, 2019 also recommending therein creation of a Technical Wing in the Ministry comprising 26 officers from BS 17 to 21 in various cadres and the allied staff in BS 1-16. Ministry of Finance concurred the said proposal with minor changes and these posts now stand created. With the creation of these posts, the sanctioned strength of the Ministry has risen to 139 (42 Officers in BS 17-22 and 97 officials in BS 1-16).



Draft Recruitment Rules for the technical posts in BS 17-21 are under process which will be finalized shortly in accordance with the instructions on the subject. Once the recruitment rules are firmed up at the MoWR level, these shall be forwarded to the Establishment Division for vetting/endorsement.

#### 1.6. PSDP Interventions:

MoWR is sponsoring water sector projects including dams, canals, drainage, small dams, flood protection and lining/rehabilitation etc. PSDP funds for water sector projects are extended as grants, CDI, and foreign assistance. These projects are being implemented by WAPDA, Provisional Irrigation Departments and attached departments. Number of water sector projects sponsored by MoWR during 2019-20 are as follows:

Executing Agency	No. of projects
WAPDA	20
Punjab	10
Sindh	07
KPK	13
Baluchistan	60
Attached departments/projects [FFC & WCAP]	2
<b>Total</b>	<b>112</b>

No. of projects sponsored by MoWR



PSDP BUDGET ALLOCATION (PKR MILLION)



Besides Water sector projects, MoWR is also sponsoring Hydropower Projects. During FY 2019-20 seventeen (17) HP projects with budget allocation of Rs. 120.7 billion were sponsored by MoWR.



## **1.7. Water Resource Management:**

### **i. Transboundary Water Management:**

Transboundary Water Management is being carried out through O/o PCIW, which was established in the aftermath of Indus Waters Treaty, 1960, signed between India and Pakistan. Under the Treaty, a Permanent Indus Commission (PIC), consisting of Pakistan Commissioner for Indus Waters and Indian Commissioner for Indus Waters, has been constituted. The PIC is to meet regularly at least once a year, alternately in India and Pakistan. The role of the office of PCIW is to protect water rights of Pakistan as enshrined in the Treaty. Detailed functions of PCIW are discussed in relevant section of this report.

### **ii. Inter-Provincial Water Management:**

Inter-Provincial Water Management is being carried out through the Indus River System Authority (IRSA). The Indus River System Authority was established with an act of Parliament in 1992, for regulating and monitoring the distribution of Water Resources of Indus River System amongst the four provinces in accordance with the Water Accord 1991 and to provide for matters connected therewith and ancillary thereto. The Authority consists of five members one each nominated by each province and the Federal Government. Detailed functions of IRSA are discussed in relevant section of this report.

### **iii. Flood Management:**

Flood management is being carried out through O/o Chief Engineering Advisor & Chairman Federal Flood Commission (CEA & CFFC). Office of CEA & CFFC serves at national level in improving the Flood Forecasting & Warning System; ensures implementation of SOPs for regulation of Tarbela & Mangla reservoirs, execution of various flood protection sector projects, based on river-reach wise feasibility studies and of flood-related infrastructure damage restoration activities. In this context three 10-year National Flood Protection Plans have so far been executed nation-wide, while the fourth Plan is under process for approval.

### 1.8. Water Wing

Water wing is responsible for the following tasks:

- Processing of development programs/projects for approval of the competent for a i.e. DDWP, CDWP/ECNEC.
- Review and processing of annual development budget of water sector projects and review budget of water related organizations.
- Provision of inputs for the preparation of Annual plans, Medium Term Plans and Perspective plans.
- Conducting of Review Meeting concerning development projects.
- Conducting of meetings pertaining to development schemes.
- Submission of progress reports on all the development schemes being executed through the MoWR.
- Reconciliation of Accounts of the PSDP Funds with AGPR.
- Processing of release of PSDP funds to the executing agencies with the Planning Commission and M/o Finance.
- Processing of consultancy agreements of water resources/flood control projects for approval from the concerned Ministries.

- Coordination with Water Wing of WAPDA, Office of the Chief Engineering Advisor/Chairman Federal Flood Commission, Indus River System Authority, Pakistan Commissioner for Indus Waters, International Water Logging and Salinity Research Institute, Federal Ministries, Provincial Irrigation and Agriculture Departments, concerned departments of Governments of AJ&K & Gilgit Baltistan.
- Monitoring of water resources development and flood control projects.
- Preparation of replies / briefs on matters concerning both houses of the parliament NA/Senate.
- Dealing with the issues of National Water Policy at Ministry level.
- All matters pertaining to the performance agreement.
- Submission of technical views on water and hydropower projects wherever required.





## Water Wing Achievements

Ministry of Water Resources, created on August 04, 2017 after bifurcation of the erstwhile Ministry of Water & Power, has been able to get approval of two multipurpose Diamer Basha and Mohmand dams, long awaited National Water Policy along with Pakistan's Water Charter as well as commissioning of the three hydropower projects with cumulative installed capacity of 2487 MW.



<p><b>Diamer Basha Dam Project (Dam part)</b>            ECNEC approval 17<sup>th</sup> April 2018.            Estimated base cost 474,000 billion            Live storage 4 million acre-feet            installed capacity 4500 MW</p>	<p><b>Mohmand Dam Hydropower Project</b>            ECNEC approval 26<sup>th</sup> April 2018            Est- cost Rs. 309,558 billion            Live storage 0.676 million acre-feet            installed capacity 800 MW            Drinking water for Peshawar 460 cusec</p>	<p><b>National Water Policy and Pakistan's Water Charter</b>            OCI approval: 24<sup>th</sup> April 2018.</p> <ul style="list-style-type: none"> <li>• High level political support, as a national imperative.</li> <li>• Providing a set of agreed national targets for water conservation, water storage, water treatment and clean drinking water.</li> <li>• Leading to a sustained national commitment to substantially increase public and private resources for the water sector.</li> <li>• Creating an institutional framework that can address present deficiencies in project management and cost effective maintenance on a war footing to revive the technical capacity and efficiency of the system that achieved such remarkable progress between 1950 and 1990.</li> </ul>
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### Other milestones achieved by Water Wing are :

- ✓ Commissioning of 1410 MW Tarbela-4th Ext Hydropower Project
- ✓ Commissioning of 969 MW Neelum Jhelum Hydro Power Project
- ✓ Commissioning of 108 MW Golen Gol Hydropower Project





### 1.9. Administration Wing:

Administration wing is responsible for the following tasks:

- All Administrative, General and Litigation matters pertaining to the Ministry and its attached departments/organizations
- Security clearance of officials from the respective security agencies on their first appointment.
- Processing of appointment cases of IRSA Members nominated by the respective provinces as well as appointment of Federal Member IRSA
- Processing the cases of foreign training/seminars/courses of officers/officials of the Ministry, its attached departments and organizations
- Coordinating/arranging briefing for Federal Minister, Minister of State and Parliamentary Secretary for Water Resources

- Processing the cases of the NOC's and foreign visits of the officers/officials
- Security clearance of foreign nationals working on water and hydropower projects being executed by WAPDA from the Ministry of Interior
- Processing of cases for secondment of army/navy personnel as and when required by WAPDA
- Coordination and conducting of Departmental Accounts Committee (DAC) meetings and implementation of its decisions
- Matters pertaining to Public Accounts Committee (PAC) and implementation of its directives
- All matters pertaining to National Assembly and Senate including the Standing Committees of both the houses
- Preparation of budget estimates (NISs/BOs) of MoWR and attached departments

- Processing of cases of Re-appropriation, Payment of Annual Contribution for international Commission on Irrigation and Drainage (ICID), international Commission on Large Dams (ICOLD) and any other matter ancillary to it
- Matters relating to foreign exchange and demands for supplementary grants
- Monthly reconciliation of accounts with the AGPR
- Conducting of DACs regarding appropriation accounts
- To ensure compliance of all other rules, regulations and orders contained in the Federal Treasury Rules, General Financial Rules and instructions issued by the Finance Division from time to time

#### 1.10. Achievements of Admin Wing

On its bifurcation in August, 2017, the newly created Ministry faced multiple issues on numerous counts that required to be given priority for smooth and efficient disposal of official business. The administration wing dealt with the matters pertaining to the institutional strengthening of the Ministry in terms of human resource, office space and procurement of office equipment/durable goods. Efforts also included creation of posts in various cadres. Certain posts in BS 1-15 were filled in on initial recruitment/transfer basis. Promotion cases of officers/officials were also processed for consideration by the Departmental Promotion Committees and Central Selection Board. The appointment of Member IRSA Punjab nominated by the Provincial Government was processed and notified. A number of meetings of Departmental Accounts Committee (DAC) were conducted on the Audit Paras pertaining to WAPDA, IRSA, O/o the CEA/CFFC, O/o the PCIW and Main Ministry including the meetings of Public Accounts Committee (PAC).

## 2. OFFICE OF CHIEF ENGINEERING ADVISER / FEDERAL FLOOD COMMISSION

### 2.1. Vision/ Mission of the Department

The mission of office of Chief Engineering Advisor & Chairman Federal Flood Commission (O/o CEA & CFFC) established in fifties immediately after the creation of Pakistan as Central Engineering Authority is to provide sound, technical and professional advice to the Ministry of Water Resources in various fields of water, in particular including irrigation, drainage, flood control, dams safety, hydro power generation, climate change and allied engineering matters, besides preparation and implementation of integrated national flood protection plans in the country, standardization of designs & specifications for flood protection works so as to ensure technically sound protection, monitoring for quality control of works, improvement in the flood forecasting and warning capabilities of concerned organizations, SOPs for reservoir operations, dams and barrages safety monitoring and research in the overall domain of water resources including flood management.

The office has the following core wings:

- (i) Civil Engineering Wing who is rendering its services since its creation in 1959.
- (ii) Federal Flood Commission- added to the Office of CEA in 1977.
- (iii) Power Wing – added to the office of CEA/ CFFC in fifties.
- (iv) Dam Safety Council – added to the office of CEA in 1981 (DSC-Wing)
- (v) Admin & Finance Wing

### 2.2. Civil Engineering Wing

#### Main Functions

The Civil Engineering Wing mainly deals with the matters pertaining to water, power and allied engineering issues at national level. The prime function of the Civil Engineering Wing is to assist CEA/CFFC in performing his lead role as Head of the Organization. The main functions of the Civil Engineering Wing are enlisted below:

- i. Technical scrutiny & evaluation of Water Sector Projects relating to Canals, Irrigation System rehabilitation, irrigation efficiency, new irrigation technologies, SCARP, drainage etc., all related PC-Is, PC-IIs, Feasibility Studies, and other studies/reports) prepared by WAPDA, Provincial Irrigation Departments and other agencies/ Consultants/ Stakeholders;
- ii. Render expert technical input /comments at the advice of Ministry of Water Resources and to PCIW on International water issues, projects/programme etc. being planned/ built in the neighboring country/countries and having impacts on Pakistan's river system/flows;
- iii. Render Expert technical input/comments on National & International water sharing disputes when referred to by the respective agencies like IRSA, WAPDA and Ministry of Water Resources etc.;



- iv. Deals with matters relating to IRSA including Advisory Committee meetings, telemetry system etc.
- v. Inter-departmental and inter-provincial coordination for implementation of National Water Policy (NWP) guidelines;
- vi. In the absence of full time Member (Federal), IRSA, supports CEA/CFFC in discharge of his additional duties as Member (Federal), IRSA, in line with IRSA Act.
- vii. Any additional duty including National Assembly and Senate Questions related to Water Sector as and when referred to Civil Engineering Wing.
- viii. Civil Engineering Wing acts as the Secretariat of Pakistan National Committee on Irrigation & Drainage (PANCID). PANCID represents Pakistan at International Commission on Irrigation & Drainage (ICID). PANCID shares technical data relating to irrigation, drainage advancement projects etc. including general liaison with all concerned national and international organizations in particular with ICID.

### 2.3. Federal Flood Commission/ Flood Management Wing

Prior to 1976, the Provincial Governments were responsible for the planning and execution of flood protection works. Disastrous floods of 1973 & 1976 caused heavy loss of life and property and it was felt that the existing flood protection facilities and planning being done on provincial levels irrespective of impacts u/s or d/s were inadequate to provide effective protective measures for the country. Heavy losses to the economy due to floods were discussed in the High level Inter-Provincial Conference held in January 1977 wherein it was decided to establish Federal Flood Commission (FFC) for integrated flood management on country wide-basis.

Federal Flood Commission (FFC), an important technical arm of the office of CEA & CFCC, spaces a coordination mechanism that would otherwise be absent in water sector policy making and project implementation. Office of CEA & CFCC through FFC has successfully served at national level in improving the Flood Forecasting & Warning System; ensured implementation of SOPs for regulation of Tarbela&Mangla reservoirs, execution of various flood protection sector projects on-ground based on river-reach wise feasibility studies; and of flood-related infrastructure damage restoration activities. In this context three 10-year each National Flood Protection Plans have so far been executed nation-wide, besides implementing few other initiatives.

#### Main Functions

The existing functions of FFC are given as under;

- i. Preparation of ten (10) year Flood Protection Plan for the country including management of the Plan;
- ii. Scrutiny of flood control/protection schemes funded by the federal government and prepared by Provincial Governments and Federal Agencies;
- iii. Review of damage to flood protection works and review of plans for their restoration and reconstruction works;
- iv. Measures for improvement in Flood Forecasting & Warning System;
- v. Preparation of a Research Programme for flood control and protection;

- vi. Standardization of designs and specifications for flood protection works;
  - vii. Recommendations regarding principles of regulation of reservoirs for flood control;
  - viii. Evaluation and monitoring of progress of implementation of the National Flood Protection Plan;
- (Federal Flood Commission may notify sub-committees and can co-opt members and take on consultants as it deems appropriate).

#### 2.4. Power Wing

##### Main Functions

Power Wing of the Office of Chief Engineering Adviser/Chairman, Federal Flood Commission (CEA/CFFC) was established in fifties and is discharging the following functions:

- i. To evaluate power sector project/schemes prepared by WAPDA, NTDCL, GENCOS, DISCOs, PPIB & AEDB.
- ii. Render expert technical advice to Ministry of Energy on Hydel, Thermal and non-conventional sources of energy (like: solar, wind, biomass etc.)
- iii. Expert technical advice on projects on transmission lines & grid stations, power distribution, rural electrification.
- iv. To deal with relevant assignment including investigation/inquiries related to WAPDA's hydro-power project as well as transmission and distribution schemes and other technical matters as and when referred.

#### 2.5. Dams Safety Council/DSC-Wing

Dams Safety Council (DSC) was established in May 1981 under the concept of three tier monitoring and inspection mechanism.

##### Main Functions

Dams Safety Council mainly deals with annual and periodic inspection/monitoring of dam projects to ensure safety of dams. The Council also reviews new projects (PC-Ia, PC-IIa, Feasibility Studies and related documents) and render expert technical advice/comments besides matters pertaining to various dam projects and allied engineering issues at national level. Dams Safety Council of O/o CEA & CFCC also acts as Secretariat of Pakistan National Committee on Large Dams (PANCOLD). Functions of the Council are given as under:

- i. Participate in annual and periodic inspection of dams & barrages organized by DSO-WAPDA and Provinces in accordance with SOPs of International Commission on Large Dams (ICOLD).
- ii. Advise WAPDA & concerned authorities regarding (i) repairs and maintenance of dams & reservoirs and (ii) regulation of reservoirs as per their SOPs.
- iii. Review PC-I, PC-II, Feasibility Studies and other studies/reports/plans of new dams & barrages, as and when received from the executing agencies (WAPDA and PIDs etc.).



- iv. Monitor (including periodic field visit) the execution of ongoing dams & barrages projects/programs funded by the federal government including donors and advise on necessary right coursing/actions based on the outcome of the monitoring.
- v. Review plans and specifications for enlargement, modifications, major repairs, revival or otherwise of dams & barrages (as the need arises)
- vi. Share technical data relating to dams in Pakistan including research under PANCOLD including general liaison with all related national and international organizations, in particular with International Commission on Large Damns (ICOLD).

## 2.6. Administration & Finance Wing

### Main Functions

Following are the main functions of Administration & Finance Wing:

- i. General Services management
- ii. Administrative coordination of trainings (in-country & abroad).
- iii. Annual budgeting of office and development projects, utilization, control and audit.
- iv. Maintenance of project accounts, internal inspection of accounts, financial monitoring of development projects, processing of consultancy services bills (if any)
- v. Matters relating to DAC/PAC w.r.t appropriation Accounts and Audit Reports.
- vi. All other related matters.

## 2.7. Performance during Financial Years 2017-18

### Civil Engineering Wing

In addition to routine activities, Civil Engineering Wing technically reviewed 14 No. water sector projects/ proposals (PC-I/PC-II etc.) and views/ comments were forwarded to Ministry of Water Resources/ concerned departments. Detail is as under: -

1. Neelum Jhelum Hydropower Project (4<sup>th</sup> Revised PC-I) – Reviewed twice
2. PC-II CPK1039 – Financing Agreement for Technical Assistance to PPIB by Agency Francaise Development (AFD)- views/comments forwarded to Power Section.
3. Mangla Dam Raising Project – Approval of Second Revised PC-I Proforma - Reviewed thrice and comments accordingly forwarded to M/o WR
4. PC-I Proforma for Remaining Works of Kachhi Canal - Reviewed thrice and comments accordingly forwarded to M/o WR
5. 1<sup>st</sup> Revised PC-I for remedial Measures to Control Water Logging due to Muzaffargarh & Taunsa Panjnad Link Canals Project- Reviewed twice
6. Extension of Zandera Kareze System along with Excavation and Construction of Conduit Channel & Conduit Channel Village Zandera District Ziarat, Balochistan - Reviewed twice
7. 1<sup>st</sup> Revised PC-I for Remedial measures to control Water Logging due to Muzaffargarh & Taunsa Panjnad Link Canals Project - Reviewed twice
8. PC-II Proforma for Review of Feasibility Study, Preparation of detailed Engineering Design, Tender Documents & PC-I Mangla Marala Link Canal Project



9. Proposal to accede to Delta Coalition – An Initiative of the Dutch Government on Water Management
10. Global Pact for Environment
11. Proposal on Dutch Assistance for Integrated Water Management System in Pakistan
12. Environmental Impact Assessment (EIA) Approval of Mohmand Dam Hydropower Project: Comments forwarded to Pak-EPA
13. Study on Water Accounting in Indus Basin of Pakistan

Work on Formulation of NWP was started by Civil Engineering Wing of O/o CEA/CFEC in 2005. In the year 2010, Law Division advised to take up the matter with CCI so there were series of consultations with Provinces. Thereafter, updated NWP draft submitted to Ministry of Inter Provincial & Coordination on January 13, 2017 for approval of CCI. Draft NWP was discussed in 34th, 36th & 37th meetings of CCI and finally, **NWP was approved by CCI** in its 37th meetings held on **April 24, 2018** along with signing of a Pakistan Water Charter.

### Dams Safety Council

#### PC-Is Reviewed (29 No.)

- PC-I Form (2<sup>nd</sup> Revised) for Satpara Dam Project including Shating Nullah diversion (17.4 MW)
- Modified PC-I for Construction of Five (05) No Small Dams/Delay Action Dams, Retention Weirs and ISSO Barrier in Sindh (Component-IX) Construction of (5) Five Number Small Dams and Weirs on the Nais Originated from Quba Qadir Bux to Ubhan Shah Hills, Sukkur & Khairpur. (Estimated Cost Rs 948,950 Million)
- 2<sup>nd</sup> Revised PC-I Proforma-NaiGaj Dam Project
- Sindh Barrages Improvement Project (Phase-II) Rehabilitation and Modernization of Sukkur Barrage (Estimate Cost Rs. 17,908.9 Million)
- PC-I for Construction of 200 Small Check Dams for Ground Water Recharge in Quetta District (Estimated Cost Rs 300.0 Million)
- PC-I for Construction of 200 Dams in District Killah Abdullah (Estimated Cost Rs 3816.00 Million)
- Construction of Small Dam at Aghberg Area District Quetta (E/Cost Rs 150 Million)
- Construction of Bhundaro Storage Dam AnjiraZehri Area District Khuzdar (Estimated Cost Rs 400.00 Million)
- Construction of Bohir Mas Storage Dam Tehsil Wadh District Khuzdar (Estimate Cost Rs.89.780 million)
- Construction of Aree Chur Gravity Dam Rarkan Area District Barkhan (Estimated Cost Rs 49,470 Million)
- PC-I for Construction of Dosi Dam Project Pusni Area Gwadar (Estimated Cost Rs 499.898 Million)
- PC-I for Construction of Garrh Storage Dam Tehsil Wadh District Khuzdar (Estimated Cost Rs 462.160 Million)
- Construction of Khaisar Patti Delay Action Dam District Nushki Under Federal PSDP 2017-18 (Estimated Cost Rs 114.770 Million)
- Construction of Khazeena Dam (SolanDarga) District MusakhelBalochistan (E/Cost Rs 300.00 Million)
- Construction of Rako Delay Action Dam District Nushki (Estimated Cost Rs 50.65 Million)

- Construction of Spidar Delay Action Dam in KachArnackzai Area District Loralai (Estimated Cost Rs 11.600 Million)
- Construction of Delay Action Dam TarkhRoudh Chap Area District Musa Khel (Estimated Cost Rs 80.00 Million)
- Construction of Tuk Storage Dam Tehsil Wadh District Khuzdar (Estimated Cost Rs 226.460 Million)
- Construction of Wakram Rabat Dam District Loralai (Estimated Cost Rs 362.857 Million)
- Construction of WamTangi Dam in District Harnai (Estd. Cost Rs 300.00 Million)
- Construction of Uchwani Dam Chotair Area District Ziarat (Estd. Cost Rs 300.00 million)
- Construction of Storage Dam Yousaf KechRudMullahazai District Pishin
- Construction of Mara Tangi Dam District Loralai. (Estd. Cost Rs 450.00 million)
- Construction of Umarzai (Humerzai) Dam District Pashin (Estd. Cost Rs. 150.00 million)
- Construction of Check Dam at Main Koh Keel Kaur Tehsil Gowargo District Panjgur (Estd. Cost Rs 29.704 million)
- Construction of Garuk Storage Dam, District Kharan, Balochistan (Estd. CostRs 12,674.69 million)
- Construction of Kangori-II Storage Dam Shah Noorani Area Tehsil Wadh District Khuzdar (Estimate Cost Rs. 95.350 Million)
- Balochistan Water Resources Development Project.
- Updated 2<sup>nd</sup> Revised PC-I of Naulang Dam Project

#### PC-IIs Reviewed (10 No.)

- Chiniot Dam Project-Draft Feasibility Study
- PC-II Proforma of Murinj Dam Project for Feasibility Study, Detailed Engineering Design & Preparation of Tender Documents (Estimated cost Rs 371.686 million)
- PC-II Proforma for Feasibility Study of Bhimber Dam Project Azad Jammu Kashmir (Estimated Cost Rs. 121.128 million)
- KurramTargi Dam Project (Stage-II) PC-II proforma for Detailed Engineering Design, Preparation of Tender Documents & PC-I
- Bara Dam Multipurpose Project: PC-II proforma for Detailed Engineering Design, Preparation of Tender Documents & PC-I
- PC-II for Feasibility Study and Detailed Design of Baber Kach Dam on Nari River (Estimated cost Rs 75.072 million)
- Badinza Dam Project-PC-II Proforma for Feasibility Study, Detailed Engineering Design, Preparation of Tender Documents & PC-I (Estimated Cost 305.271 Million)
- Revised PC-II for Construction of Burj Aziz Dam Federal PSDP 2017-18 (Estimated Cost Rs 67.047 Million)
- PC-II for Feasibility Study of Halak Storage Dam (Estimated Cost Rs. 39.646 Million)
- Feasibility Study of Halak Storage Dam

#### Federal Flood Commission (FFC)

To build resilience against floods, FFC an attached department of Ministry of Water Resources has initiated the following measures during the financial years 2017-18:

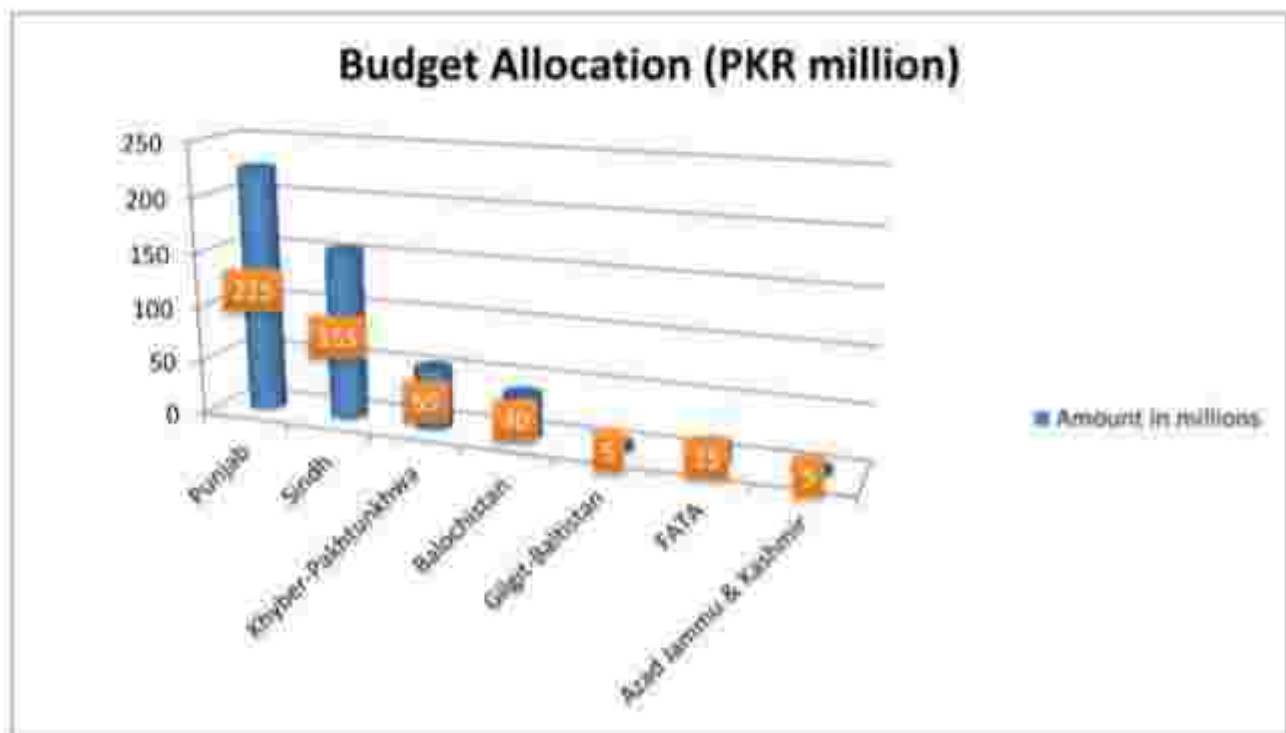
##### a) Normal/ Emergent Flood Programme



Presently, Federal Flood Commission is coordinating implementation of Normal/Emergent Flood Programme, which was started in (1978-79). It is a need-based yearly program in which all the Provincial Irrigation Departments and concerned organizations of Federal Line Agencies i.e. (GB PWD including Merged Area KP & AJK) submit their flood protection schemes (based on their share under PSDP) each year to Federal Flood Commission for approval of concerned fora. The award of contracts, execution and disbursement is the responsibility of Provincial Irrigation Departments and Federal Line Agencies.

Overall **Rs. 500.00 million** allocated under **PSDP (2017-18)** for implementation of Normal/Emergent Flood programme out of which **Rs. 244.010 million** was released to the Provinces & Federal Line Agencies, for execution of **thirty seven (37) No.** Flood Protection Schemes costing **Rs. 1496.029 million**. Province/ Region-wise allocation is given as under,

Province/ Region		Budget Allocation
1.	Punjab	225.000
2.	Sindh	155.000
3.	Khyber-Pakhtunkhwa	55.00
4.	Balochistan	40.000
5.	Gilgit-Baltistan	5.000
6.	FATA	15.000
7.	Azad Jammu & Kashmir	5.000
Total:		500.000





## Power Wing

## 54 Projects reviewed during the Calendar Year 2017

Sr. No.	Name of the Projects
1.	PC-Is of 18 X new Projects in PSDP 2019-20
2.	11 KV line from Dalbadin Killi Haji Mir Muhammad Azeem Sargesha, District Chaghi.
3.	Proforma PC-I Provision of 50 KVA T/F & HT/LT line for Degree College area Dalbandin District Chaghi
4.	Proforma PC-I Village Electrification in (NA-226) District Quetta.
5.	Proforma PC-I 33 KV Sub Station at Ahmed Wall District Noushki.
6.	Proforma PC-I Provision of 50 KVA T/F & HT/LT line for Killi Hassan Abad & Mengalabad Noukandi.
7.	Proforma PC-I Construction of 33 KV Sub Station Totazai District Kharan.
8.	Proforma PC-I Construction of 33 KV sub Station at Ghurak Nall District Khuzdar.
9.	Proforma PC-I Construction of 33 KV sub Station Keshangi District Noushki.
10.	Proforma PC-I Provision of 50 KVA T/F & 250 Poles for NA-268 District Kharan, Noushki&Chaghi.
11.	Proforma PC-I 11 KV line from Dalbudin Killi Haji Mir Muhammad Azeem Sargesha, District Chaghi
12.	Proforma PC-I Construction of 33 KV sub Station Keshangi District Noushki.
13.	Proforma PC-I Construction of 33 KV sub Station Totazai District Kharan.
14.	Proforma PC-I Construction of 33 KV sub Station at GhurakNall.
15.	Proforma PC-I 33 KV sub Station at Ahmed Wall District Noushki.
16.	Proforma PC-I Provision of 50 KVA T/F & HT/LT line for Killi Hassan Abad & Mengalabad Noukandi.
17.	Proforma PC-I Provision of 50 KVA T/F & HT/LT line for Degree College Area Dalbandin District Chaghi.
18.	Proforma PC-I Electrification in (NA-66) District Quetta.
19.	Proforma PC-I Provision of 50 KVA T/F & 250 Poles for NA-268 District Kharan, Noushki&Chaghi.
20.	Proforma PC-I Construction of 132 KV Grid Station at Kapoto With Allied 132 KV D/C Transmission line (In & out Arrangement) (35 KM)
21.	PC-Is of new Projects in PSDP 2019-20.
22.	Revised PC-I for 220 KV GIS Substation Ghazi Road Lahore.
23.	PC-Is of Badin Under SDGs Program.
24.	PC-Is of Mir Pur Khas under SDGs Program.
25.	PC-Is of Sanghar Under SDGs Program.
26.	3 <sup>rd</sup> Revised PC-Is for 128 MW KeyalKhawar Hydropower Project.
27.	Provision of Water for the 4.0 JARRI-II Hydropower Project JARRIKAS, MIRPUR,AJ&K.
28.	PC-I for 220 KV QUAID-E-AZAM Business park Grid Station for Provision of Electricity to PIEDMC Special Economic Zone (SEZ).
29.	PC-Is of BADIN Under SDGs Program.
30.	PC-I for Construction of 132 KV D/C KHANOZAI-PISHIN T/Line (60 KM) and 2 <sup>nd</sup> Circuit Stringing of 132 KV Kala –Surab T/Line Under PSDP 2020-21.

32.	PC-I of Badin Under SDGs Program.
33.	PC-I for industrial energy efficiency initiatives to supplement sustainable energy for all (SE4ALL).
34.	PC-I for Building Sector Energy efficiency initiatives.
35.	3 <sup>rd</sup> Revised PC-I for 128 MW KeyalKhawar Hydro Power Project.
36.	Tarbela 5 <sup>th</sup> Extension HPP-Draft Feasibility/Design Basis Report Concerning Floating Solar Project in Ghazi Barotha Ponds and Tarbela Reservoir.
37.	Construction of 132 KV Grid station at Hazar Ganji (QESCO) with allied 132 KV double circuit transmission line (06 KM) in & out Arrangement).
38.	Construction of 132 KV (AIS) grid station at deep sea port (GWADAR) and Allied 132 KV double circuit transmission line (11 KM)
39.	Construction of 132 KV Grid Station at Industrial Estate Boston with Allied 132 KV D/C Transmission line (in & out arrangement) (25 KM)
40.	PESCO STG Projects under Federal PASP Special Finances
41.	Notice of Meeting Regarding GomalZam Dam Project
42.	Submission of PC-Is for electrification of Development Schemes under Prime Minister's Global Sustainable Development Goals (SDGs) Achievement Programme F.Y 2020-21
43.	PC-I Proforma for Tarbela 4 <sup>th</sup> Extension Hydropower Project.
44.	3 <sup>rd</sup> Revised PC-I for 128 MW KeyalKhawar Hydropower Project.
45.	Provision of Water for the 4.0 Jarri-II Hydropower Project Jarrikas, MirPur, AJ&K- Resolution of Dispute between WAPDA & Investor.
46.	Hydropower Proposal for Retrospective EIA Study of mega Hydel Projects.
47.	Para No.4.4.2-Irregular Reliability Test Run (RTR) of Units No.1,2,3&4-JABBAN Hydroelectric Power Station.
48.	Para No.4.6.3-Non-Supply of Mandatory Spare Parts by the Contractor Valuing US\$ 0.103 Million JABBAN Hydroelectric Power Station.
49.	Para No.4.3.4-Delay in completion due to Non-Inclusion of Additional Scope of Work at the Time of Preparation of Bidding Documents JABBAN Hydroelectric Power Station.
50.	Para No.4.3.6-Loss due to delay in award of the main contract M/S HRL-CCPG JV for rehabilitation of JABBAN Hydroelectric Power station Rs.1252.269 Million JABBAN.
51.	Para No.4.3.9- Irregular Payment due to procurement without factory acceptance tests at manufacture premises US\$ 0.258 Million equivalent to Pak Rs.26565 million JABBAN.
52.	Para No.4.2.6-Loss due to non-recovery of liquidated damages charges Rs. 132.925 Million JABBAN Hydroelectric power station.
53.	Inquiry/Fact Finding in PDP NO.491 of AR-2019-20 of WAPDA (Loss due to delay in procurement-Rs.222.39M) under directives of DAC Meeting relating to CE/ GM (P) TARBELA.
54.	Enquiries/Fact Finding in PDP No. 16 of AR-2017-18 of WAPDA under Directives of DAC meeting relating to GM(P) Tarbela.

### **38 Projects reviewed during the Calendar Year 2018**

Sr. No.	Name of the Projects
1.	PC-I for electrification of 61 schemes in various UCs of Rawalpindi under Prime Minister SDGs 2017-18 (one PC-I)



2.	PC-I for electrification of 59 schemes in various UCs of Rawalpindi under PM SDGs 2017-18 (one PC-I)
3.	PC-Is for new village electrification under PSDP for FY 2017-18 District Khanewal
4.	PC-Is for electrification of 31 schemes in various UCs of Attock under PM SDGs 2017-18 (one PC-I)
5.	PC-Is for electrification of 61 Nos villages in District Kachi
6.	PC-Is for electrification of 67 Nos villages in District Kachi
7.	PC-Is for electrification of 44 Nos villages in District Kachi
8.	PC-I under PM SDGs 2017-18 village electrification of District Zhob/ Sherani
9.	PC-Is for new electrification under PSDP for District Chichawami (NA-162)
10.	PC-Is for electrification of Schemes in Chakwal under special federal development programme -2017-18
11.	PC-Is for new electrification of villages under PSDP for District Khanewal under for FY 2017-18 (NA-159)
12.	04 No PC-Is for electrification of schemes in Chakwal under special federal development programme FY 2017-18 (NA-60)
13.	PC-Is for village electrification under PSDP for District Layyah (NA-181)
14.	PC-I for provision of electrification in KASUR and OKARA under PSDP 2017-18
15.	PC-I (Rehabilitation of 58 electrification distribution infrastructure schemes of Abbotabad under PSDP 2017-18)
16.	PC-Is for demanding of funds amounting Rs.174 million of NA-173 DG KHAN
17.	PC-I (surrender of funds amounting Rs. 642.660 million out of demand No. 136 for the year 2017-18 (provision of electricity to 68 abadies of NA-93 Rs.78.00 million)(May,2018)
18.	PC-I (surrender of funds amounting Rs. 642.660 million out of demand No. 136 for the year 2017-18 (provision of electricity to 17 abadies of NA-75 Rs.19.523 million)
19.	PC-I (surrender of funds amounting Rs. 642.660 million out of demand No. 136 for the year 2017-18 (provision of electricity to 101 abadies of NA-70 Rs.129.708 million)
20.	PC-I (surrender of funds amounting Rs. 642.660 million out of demand No. 136 for the year 2017-18 (provision of electricity of abadies of NA-64 Rs.45.495 million)
21.	PC-I (surrender of funds amounting Rs. 642.660 million out of demand No. 136 for the year 2017-18 (provision of electricity to 97 abadies of NA-69 Rs.99.971 million)
22.	PC-I (surrender of funds amounting Rs. 642.660 million out of demand No. 136 for the year 2017-18 (provision of electricity to 101 abadies of NA-68 Rs.97.411 million)
23.	PC-I for provision of electricity in District Nankana Sahib form PSDP against Id No. 9261 "Energy for All"
24.	PC-I for provision of electricity in District Kasur form PSDP against Id No. 9261 "Energy for All"
25.	PC-I for 220 kV head Faqirian Grid Station along with 220 kV double circuit transmission line for head Faqirian to Ludewala
26.	PC-I for installation of pilot battery energy storage system (BESS) at 220 kV Jhimpir-I grid station
27.	PC-I Interlinking of 220 kV Dharki, Rahim Yar Khan, Bahawalpur and Chishtian Grid stations for improvement of power supply system in Southern areas
28.	PC-I for 220 kV Larkana Sub station (May 2018)



29.	PC-I for 599 kV Moro sub station
30.	PC-I for 220 kV Nawabshah sub station (July 2018)
31.	PC-I for land acquisition for converter station and grounding stations at Both ends of 660 KV HVDC transmissions line from Matiari to Lahore (CPEC)- revised.
32.	Rehabilitation of 22 MW JABBAN hydro electric power station- second revised PC-I Proforma.
33.	Revised PC-Is of 1230 MW Haveli Bahadur Shah Power Project and 1223 MW Balloki Power Plant.
34.	PC-I for procurement of 220 KV mobile grid stations and 500 KV SHUNT reactors for emergency services.
35.	PC-I for 220 KV SWABI sub station.
36.	PC-I for 7 <sup>th</sup> STG (FESCO)
37.	PC-I for ELR & DOP of (FESCO)
38.	PC-I for Distribution of Power (DOP & ELR)

## 2.8. Performance during Financial Years 2018-19 & 2019-20

### Civil Engineering Wing

- Technically reviewed 14 Water Sector Projects and accordingly views/ comments were submitted to MoWR. List of the projects is given below:

Sr. No.	Name of the Project	Comments Sent to MoWR on
1.	PC-I namely "Construction of Panjkora River left and right Bank Canal District Dir Lower, Estimated cost Rs. 4,597.83 Million"	June 30, 2020
2.	Revised PC-I of Sindh Resilience Project (Irrigation Component), Estimated Cost Rs. 13,827 million (Comments submitted to Flood Wing for onward submission to MoWR)	June 25, 2020
3.	PC-I for Construction of Mulkoh, Kosht and KaghLasht Irrigation Scheme, District Chitral	April 29, 2020
4.	2 <sup>nd</sup> Revised PC-I for Remodeling of Warsak Canal System	April 22 & May 23, 2019 & February 21, 2020
5.	2 <sup>nd</sup> Revised PC-I for 17.4 MW Satpara Dam Project	December 31, 2018 and January 24, 2019
6.	Revised PC-I (Phase-I) of Raince Canal Project	May 29, July 18 and August 23, 2019
7.	1 <sup>st</sup> Revised PC-I titled 'Remedial Measures to check water logging due to Muzaffargarh and TaunsaPanjnad Link Canal Project'	August 03, 2018
8.	Sindh Barrage Project – PC-II Proforma for Feasibility Study	October 09, 2019
9.	Chashma Right Bank Canal (Lift-Cum-Gravity) Project PC-II Proforma for review of Feasibility Study, Updation of Detailed Engineering Design, Tender Documents and PC-I	November 30, 2018
10.	PC-I namely Jabban Hydropower Project (Views/ comments submitted to Power Wing for onward submission to MoWR)	November 14, 2018

11.	PC-II for Feasibility Study, Detailed Engineering Design and PC-I of Mangla –Marala Link Canal Project	September 05, 2018
12.	Tamasha Small Hydro Project on Tamasha Nullah, A Sub-Tributary of the River Indus	Technical comments/ expert advices regarding these Indian projects were communicated to Pakistan Commissioner for Indus Waters (PCIW).
13.	Kalaroos-II Small Hydro Project on Kalaroos Nullah, A Sub-tributary of Jhelum River	
14.	Baltikulan Small Hydro Project on Baltikulan Nullah A Sub-Tributary of the Jhelum River	

- Civil Engineering Wing has played a pivotal and key role in the formulation and approval of country's first ever National Water Policy (NWP) approved from the CCI in 2018 besides signing of a landmark Pakistan Water Charter. Subsequent to approval of NWP, Secretary Ministry of Water Resources designated O/o CEA/CFFC as **Secretariat of the National Water Council** on October 10, 2018 under which extensive work on National Water Policy Implementation process including in-particular;
  - (i) Formulation of NWP Implementation Framework- Draft submitted to M/o WR on July 01, 2020;
  - (ii) Organizing first ever meeting of National Water Council on 25<sup>th</sup> October 2018;
  - (iii) Submission of Concept Paper on Establishment of NWP-Implementation Cell in Office of CEA/CFFC (Civil Engineering Wing);
  - (iv) Two meetings of NWC-Secretariat held respectively on November 11, 2019 and January 29, 2020;
  - (v) Provincial Focal Persons notified for coordinating on NWP implementation;
  - (vi) Follow up with Provinces on formulation of respective Ground Water Regulatory frameworks and establishment of Ground Water Regulatory Authority;
  - (vii) Follow up with Provinces for enhancement of allocation under their provincial ADPs in line with the investment plan given in NWP;
  - (viii) Provincial Governments were also pursued for sharing detailed progress on various initiatives/ projects undertaken in line with NWP;
  - (ix) Conducting Private Sector Consultation for their role in NWP Implementation; &
  - (x) Building of data-bases of various sub-sectors of water was undertaken
- Civil Engineering Wing worked as Secretariat of National Water Council and carried out necessary inter-provincial & inter-departmental coordination for ensuring effective implementation of NWP guidelines. In February 2020, the NWP-Secretariat was shifted to M/o Water Resources.
- During the F.Y 2018-19 & 2019-20, Civil Engineering Wing reviewed about 25 No. different **National Water Sharing Issues**, based on which input/ expert advice/ technical comments were shared with M/o WR, IRSA, WAPDA and other concerned organizations.
- Replies to the **National Assembly Questions** (4th Group/17<sup>th</sup> Session and 8th Group/6th Session) were forwarded to Ministry of Water Resources for taking further action in the matter. Latest implementation status against the motion moved by Mr. Khuram Dastgir Khan, regarding National Water Policy, was forwarded to Mo WR in October 2018.
- Preparation and submission of Concept Clearance Paper (CCP) for "**Sino-Pakistan Smart Water Management Project (SPSWMP)**" which was approved by the CDWP in its



meeting held on March 03, 2020. Based on that, PC-I stands submitted to M/oWR and follow up with Chinese donor through EAD and M/o WR for securing requisite funding is underway

- Preparation and submission of CCP for the project titled “**Integrated Rain Water Harvesting and Downstream Flood Reduction in Islamabad Region**”. CDWP approved CCP on March 03, 2020; Based on that, preparation of PC-I is underway
- First ever annual report of the organization namely ‘**Annual Report 2019 of O/o CEA & CFFC**’ was prepared by taking inputs of all technical and non-technical wings of O/o CEA&CFFC which was approved by the CEA/CFFC on 31-03-2020.
- **Report on SDG Indicator 6.5.1** (Integrated Water Resources Management) was prepared for Pakistan and shared with all concerned organizations on July 30, 2020.
- **Template for SDG Indicator 6.5.2** related to transboundary cooperation on water issues was also filled-in and submitted to Ministry of Water Resources on June 05, 2020.
- Following important cases relating to **Bilateral International Consultations and MoU’s** were dealt:
  - i) Australia-Pakistan Water Resources MOU signed on 18-09-2018;
  - ii) Bilateral Memorandum of Understanding (MoU) between Department of Civil Affairs of Yunnan Province, People’s Republic of China and NDMA, Government of the Islamic Republic of Pakistan
  - iii) Cooperation between Kathmandu Institute of Applied Science (KIAS), Nepal and Centre for Climate Research and Development (CCRD) of COMSATS University Islamabad (CU)
  - iv) MOU regarding Transboundary Hydro Information between Pakistan & China
  - v) Pakistan-Germany Bilateral Cooperation
  - vi) 9<sup>th</sup> Round of Pakistan-Czech Bilateral Political Consultation
  - vii) Feedback on recommendations of Second OIC Water Council regarding meeting held in Cairo on 22-10-2019;
  - viii) Pakistan-Hungary Annual Bilateral Consultations (MOU signed on 13.07.2020)
- More than 40 important official events i.e. meetings/ seminars/ workshops were attended by the senior officers of Civil Engineering Wing during the F.Y 2018-19 & 2019-20.
- Around 10 No. Technical documents i.e. Summaries/briefs talking points & speeches etc. were prepared and submitted by the Civil Engineering Wing for high ups of Ministry of Water Resources, Government of Pakistan
- Monthly and quarterly progress reports of Civil Engineering Wing were prepared regularly and forwarded to Ministry of Water Resources for information and further necessary action, if required. Besides, general correspondence on different routine cases was also made by Civil Engineering Wing with MoWR and other concerned quarters.
- As a **Secretariat of Pakistan National Committee on Irrigation & Drainage (PANCID)**, Civil Engineering Wing maintained closed liaison with ICID and coordinated & followed up all activities related to PANCID.



- 49<sup>th</sup> Annual meeting of Pakistan National Committee on Irrigation and Drainage (PANCID) was held on August 09, 2019 in office of the Chief Engineering Adviser/ Chairman Federal Flood Commission Islamabad and minutes were issued on August 29, 2019. Follow up actions in the light of decisions of the meeting was also ensured with the concerned organizations and PANCID Members.

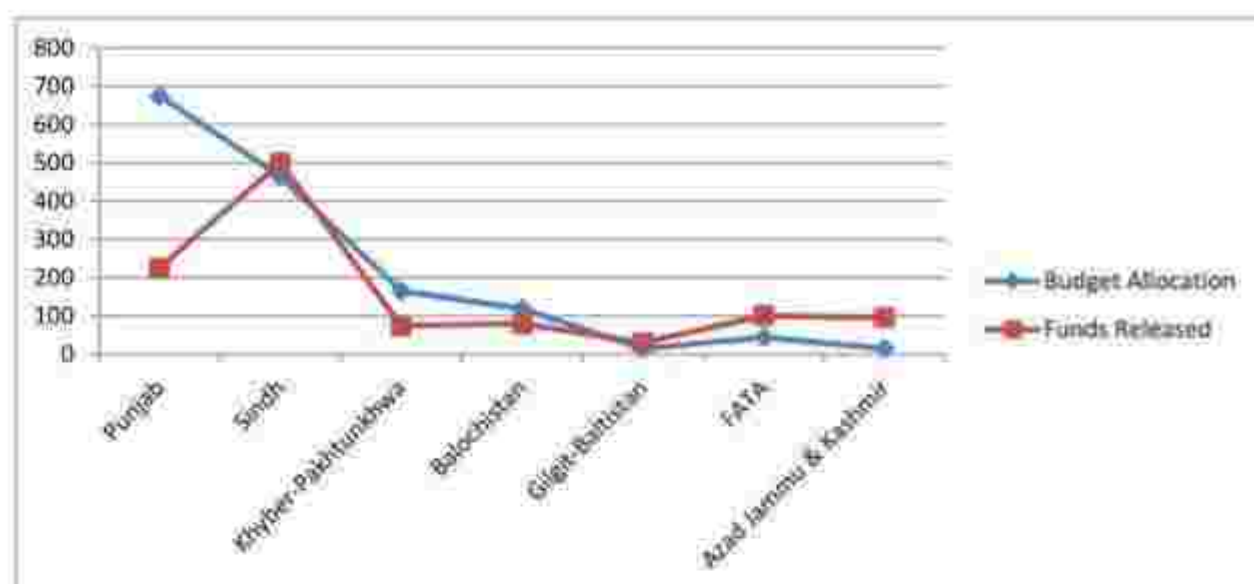
#### **Federal Flood Commission/ Flood Management Wing**

##### **a) Normal/ Emergent Flood Programme**

Presently, Federal Flood Commission is coordinating implementation of Normal/ Emergent Flood Programme, which was started in (1978-79). It is a need-based yearly program in which all the Provincial Irrigation Departments and concerned organizations of Federal Line Agencies i.e. (GB PWD including FATA & AJK) submit their flood protection schemes (based on their share under PSDP) each year to Federal Flood Commission for approval of concerned for. The award of contracts, execution and disbursement is the responsibility of Provincial Irrigation Departments and Federal Line Agencies.

Overall Rs. 1500.00 million allocated under PSDP (2018-19) and (2019-20) for implementation of Normal/Emergent Flood programme out of which Rs. 1,110 million was released to the Provinces & Federal Line Agencies, for execution of Forty-Nine (49) Nos Flood Protection Schemes costing Rs. 3493.362 million. Province/ Region-wise budget allocation and releases, are given as under;

Sr.#	Province/ Region	Budget Allocation	Funds Released (millions)
1.	Punjab	675.00	225.00
2.	Sindh	465.00	500.658
3.	Khyber-Pakhtunkhwa	165.00	75.00
4.	Balochistan	120.00	80.00
5.	Gilgit-Baltistan	15.00	30.942
6.	FATA	45.00	101.769
7.	Azad Jammu & Kashmir	15.00	96.631
Total:		1500.00	1110.00



#### b) Flood Protection Sector Project FPSP-III

- Umbrella PC-1 of Flood Protection Sector Project –III (FPSP-III) costing **Rs. 95.980 billion** has been prepared for execution of flood protection schemes, improvement in Early Warning System on country-wide basis and capacity building of flood management organization during next 5 years.
- The PC-1 stands recommended by the CDWP in its meeting held on **12<sup>th</sup> October 2020** for approval from ECNEC.
- Identification of potential donors by EAD is underway.

#### c) Procurement & Installation of 45 No. Telemetry Stations by WAPDA

- WAPDA under the overall coordination of FFC has prepared CCP for procurement and installation of **45 No. Flood Telemetry Stations (Estimated Cost: USD 5.00 million)**, for improvement in the Early Warning System.
- The scope of work includes installation of 45 No. automatic Flood Telemetry/ Early Warning Stations to have (i) real time data of Hydro-Meteorological parameters and, (ii) digital monitoring and management system, (iii) water data management, (iv) water analytics with decision support system. The system would comprise a unified architecture to deliver an Intelligent User Interface, a Reporting Engine & a Decision Support System (DSS) and their key deliverables resulting into a single unified Water Management System for this domain.
- CCP stands **approved** by CCC/ CDWP on **3<sup>rd</sup> March 2020**.
- **Arrangement** of Grant-in-Aid from JICA by EAD is under process.
- Based on above project, PC-1 shall be finalized after technical inputs of Japanese Experts (subject to grant request acceptance), processed for approval and hence shall be implemented accordingly.

**d) Preparation of National Master Plan for Flood Telemetry**

- WAPDA under the overall coordination of FFC and with the technical assistance of ADB in the form of Technical Experts has been working on the preparation of National Master Plan for Flood Telemetry for improvement in the Flood Early Warning System on country-wide basis including four provinces, GB, AJ&K and Federal Capital area.
- The scope of work under the Master Plan is as under:
  - i) Review the status of Hydrological Gauging Network (telemetry/manual) installed by various government departments and agencies, their condition, and their data sharing mechanism as required for an assessment.
  - ii) Establish the requirement for installation of telemetry system across the country based on gaps in existing system, hydrological condition of respective catchments/ sub-catchments fulfilling International Data Standards / requirements to ensure registering of flow in all main rivers, secondary and tertiary rivers, small nullahs and streams, so that exact/ real-time estimate of flood discharges entering into main Indus & its tributary rivers (Jhelum, Chenab, Ravi, Sutlej and Kabul Rivers) is available to be ultimately used in precise flood flows forecast generation.
  - iii) Prepare National Master Plan including all necessary details alongwith GIS Maps prepared for identified location for telemetry stations in Pakistan.
- Inception report has since been prepared.
- Final Master Plan Report is expected by **mid-March 2021** containing Phase-I & Phase-II priorities.
- Phase-I of the Plan is covered under FPSP-III and shall be taken-up for implementation subject to realization of funds for FPSP-III.

**e) Procurement & Installation of 18 No. Flood Telemetry Stations and Capacity Building of Office of CEA/ CFEC through TIKA Grant-in-aid Programme**

- Consolidated Concept Clearance Paper (CCP) has been framed collectively by PMD, WAPDA and FFC under the overall coordination of FFC. The scope comprises three main components as under:

Component-I	Installation of Eighteen (18) No. Flood Telemetric Stations (WAPDA);
Component-II	Strengthening of Flood Early Warning System (PMD); and
Component-III	Institutional Strengthening and Capacity Building of Office of CEA/ CFEC.

- Joint CCP based on inputs of PMD & WAPDA and in line with the decision taken in the meeting held in M/o (NFS&R) on **January 4, 2021** stands submitted to Ministry of PD&SI enroute MoWR for approval from CCC/ CDWP.
- FFC shall be the overall Coordination Agency whereas PMD and WAPDA will be the implementing partners.



- The project is included in the Pakistan-Turkey Strategic Economic Framework (SEF) and shall be taken-up for implementation once the CCP is approved and grant assistance under SEF is secured.
- f) Concept Clearance Paper of two (2) Candidates Projects of Sindh Province for Financing through JICA Grant-in-Aid Programme**
- CCP of two (2) No. Flood Protection Projects titled (i) **“Construction of Retaining Wall along downstream Right Marginal Bund from mile 0/0 + 200 to 1/5 Guddu Barrage, Estimated Cost Rs. 800 million, (ii) Retaining Wall along Ganj Diversion Bund in Johi Division at Dadu, Estimated Cost Rs. 500 million”** stands approved by CCC/ CDWP on 16<sup>th</sup> September 2020.
    - The main objectives & rationale of the proposed project are as follows:
      - (i) To divert high velocity hill-torrent water, which comes from Khirthar Range, in order to avoid damages and loss of population and infrastructures including standing crops
      - (ii) Eliminate/ minimize disruption of local government operations caused by flood hazard events.
      - (iii) Maintain a well coordinated warning and emergency response program that can detect the flood threat and provide timely warning.
      - (iv) Establish partnerships among all levels of government and the business community to improve and implement consistent floodplain management practices such as prevention, property protection, public education and awareness, natural resource protection, emergency services, and capital improvements.
    - EAD has requested JICA HQ for Grant-in-Aid financing to implement the programme.
    - Based on above, the project PC-I shall be finalized, after technical inputs of Japanese Experts (subject to grant request acceptance) processed for approval and hence shall be implemented accordingly.
- g) Appointment of “Technical Advisor on Flood Management” in FFC by JICA**
- (i) FFC through Ministry of Water Resources and EAD requested Government of Japan/ JICA for the provision of Technical Advisor on Flood Risk Management.
  - (ii) The Technical Advisor is expected to be mobilized and housed in FFC in the coming Japanese Fiscal Year commencing from **April 2021**. The Technical Advisor shall undertake the following tasks with a view to ensure overall Institutional Strengthening and Capacity Building of O/o CEA/ CFFC.
    - a. Integrated flood management with innovative techniques especially being currently practiced in Japan.
    - b. Hydrological and Hydraulic modeling through on-the-job training and establishment of a GIS & River Hydraulics Modeling Cell.
    - c. Preparation and implementation of National Water Policy framework for flood and hydro-meteorological related portion.

- d. Introduction and capacity building of new tools and engineering softwares through GIS and River Hydraulics Modeling trainings.
- e. Institutional strengthening of O/o CEA/CFFC (equipment, logs, IT/softwares etc.)

#### **h) Important Meetings organized by FFC Regarding Flood Management**

- FFC organized Annual Pre-Flood Conferences to review the preparedness of all relevant organization during Monsoon 2018, 2019 and 2020.
- FFC organized post Flood Conferences to review the performance of all relevant organization during Monsoon 2018, 2019 and 2020.
- Organized Quarterly Progress Review meeting to monitor the progress on the directives of Honorable Supreme Court of Pakistan under Constitution Petition 62/ 2010.
- Besides above, FFC has organized 56 meetings to enhance coordination among all stakeholders dealing with integrated flood management.

#### **i) Processing of PC-Is and PC-IIs**

FFC has technically scrutinized PC-Is/ PC-IIs of following projects:

- PC-II for formulation of National Watershed Management Plan costing to **Rs. 812.556 million** on country-wide basis submitted by WAPDA.
- Four (4) projects of PMD costing **Rs. 4,110 million** for implementation through NDRMF as a part of intervention proposed under NEPP-IV.
- 45 No. Flood protection schemes costing to **Rs. 23.556 Billion** funded by NDRMF on country-wide basis and give necessary technical advices.
- PC-I for Capacity Building of Office of CEA/ CFCC costing **Rs. 494.788 million** prepared by FFC. (**PC-I stands submitted to MoWR**).
- PSDP funded Flood protection scheme titled "**Construction and improvement of Irrigation infrastructure including FPW channels, road, tube-well & crossing facilities in District Swabi, Khyber Pakhtunkhawa, Estimated Cost Rs. 928.825 million**".

#### **j) Other Major Activities**

- FFC's Monitoring Team carried out 54 site visits of **31 No. flood protection schemes** across the country being implemented under Normal/ Emergent Flood Programme during financial year (2018-19 & 2019-20).
- Revision in the SOPs of Tarbela Dam through WAPDA by revising the filling criteria which benefited the country in enhanced water storage.
- Initiation of programme for participation of private sector in Hydro-met services through C-Digital.
- Preparation of Annual Flood Report/ Annual Report of O/o CEA/CFCC for **2018 and 2019**.



- Support Services Agreement (SSA) for improvements in the Data Center of FFC is under process with WCAP/ Ministry of Water Resources.

### Power Wing

- Annual performance of Power Wing for F.Y 2018-19 & F.Y 2019-20 is summarized below:-

Sr. #	Description of Project/Work	No. of Cases dealt		Brief description of activities carried out
		FY 2018-19	FY 2019-20	
1.	Hydropower Projects	07	04	The project proposals (PC-Is & PC-IIs) were evaluated and technical advice on hydropower projects was offered. The comments were submitted to the Ministry of Water Resources. In the light of our comments the project proposals were substantially improved. Detail of the projects is given on the subsequent pages.
2.	Transmission & Distribution Projects and Technical Matters:	34	30	The project proposals (PC-Is & PC-IIs) were examined and technical advice/comments were submitted to Ministry of Water Resources and Ministry of Energy (Power Division). The replies of concerned organizations were further analysed for final advice. In the light of our advice the project proposals were substantially improved. DDWP meetings were also attended in Power Division to assist the approving authority. Detail of projects is given in the subsequent bullets points.
3.	WAPDA Inquiries	20	08	WAPDA inquires involving technical and contractual matters were completed. Detail is given ahead.
4.	Miscellaneous Matters	08	-	Assessed and rendered advice on various miscellaneous/ technical matters received. Details are given ahead.
<b>Total</b>		<b>69</b>	<b>42</b>	

- List of 11 No. Hydropower Projects/ PC-Is & PC-IIs reviewed by Power Wing

Sr. No.	Name of the Project
FY 2018-19	
1.	PC-I Proforma for Establishment of Hydropower Training Institute (HPTI)
2.	PC-II Proforma for 2800 MW Thakot Hydropower Project + 4800 MW
3.	Second Revised PC-I Proforma for Rehabilitation of 22 MW Jabban Hydroelectric Power Station



4.	PC-II Proforma for Feasibility Study of Dudhnial Dam Multi-Purpose Project (960 MW)
5.	PC-II Proforma for Detailed Engineering Design, Preparation of Tender Documents for Patan HPP 2,400 MW
6.	PC-II Proforma for Detailed Engineering Design, Preparation of Tender Documents for Lower Palas HPP (665 MW)
7.	PC-I Proforma for Tarbela 4 <sup>th</sup> Extension of Hydropower Project
<b>FY 2019-20</b>	
1.	PC-I Proforma for Tarbela 4 <sup>th</sup> Extension Hydropower Project
2.	3 <sup>rd</sup> Revised PC-I for 128 MW KeyalKhwar Hydropower Project.
3.	Provision of Water for the 4.0 Jarri-II Hydropower Project Jarrikas, Mirpur, AJ&K- Resolution of Dispute between WAPDA & Investor
4.	Tarbela 5 <sup>th</sup> Extension HPP-Draft Feasibility/Design Basis Report Concerning Floating Solar Project in Ghazi Barotha Ponds and Tarbela Reservoir.

- 64 No. Power Transmission & Distribution Projects PC-Is/PC-IIs dealt by Power Wing.

Sr. No.	Name of the Project
<b>F. Y 2018-19</b>	
1.	PC-I for Installation of ABC in Peshawar and BANNU Circle.
2.	PC-I for Evacuation of Power from 220/132 KV Grid Station SWABI (NTDC).
3.	PC-I for Village Electrification Lohi Haji SidikDurgiLasbela.
4.	1 <sup>st</sup> Revised PC-I of Tranche-III (FESCO).
5.	PC-I for Conversion of LT line into ABC Cable in KHUZDAR Circle.
6.	PC-I for Village Electrification of 50 Schemes in district KHUZDAR.
7.	PC-I for Additional Source of Supply to 220 kV Jaranwala sub-station (NTDC).
8.	PC-I for Village Electrification of 01 Scheme, District Lasbela.
9.	PC-I for Evacuation of Power from 330 MW Siddiqsons Coal Fired Power Plant at Thar (Revised) (NTDC).
10.	PC-I for Evacuation of Power from 660 MW Lucky Electric Coal Fired Power Plant at PortQasim (NTDC).
11.	PC-I for 220 KV KOHAT substation (NTDC).
12.	PC-I for Provision of Electricity to DHABEJI SEZ (A Priority Project under CPEC) (NTDC).
13.	PC-I for 220 KV Gujranwala-II sub-station (NTDC).
14.	PC-I for 220 KV Sialkot sub-station (NTDC).
15.	PC-I for 220 KV Arifwala sub-station (NTDC).
16.	PC-I for Evacuation of Power from 330 MW Siddiq Sons Coal Fired Power Plant at Thar (Revised).
17.	PC-I for Evacuation of Power from 660 MW Lucky Electric Coal Fired Power Plant at Port QASIM.
18.	PC-I for 220 kV Haripur sub-station.
19.	Re-Submission of PC-I for Provision of Electricity to Dhabeji Special Economic Zone (SEZ) (A priority project under CPEC) (NTDC).
20.	PC-I for Conversion of LT Line into ABC Cable in Quetta.
21.	PC-I for Additional Source of Supply to 220 KV Jaranwala sub-station (NTDC).
22.	PC-I for Provision of Electricity to 132 KV Grid at Bin Qasim Industrial Park.

23.	PC-I 11 KV Line from Dalbadin Killi Haji Mir Muhammad Azeem Sargasha, District Chaghi.
24.	PC-I Construction of 33 KV Sub-station Keshangi, District Noushki.
25.	PC-I Construction of 33 KV Sub-Station Totazai, District Kharan.
26.	PC-I Construction of 33 KV Sub-Station GhurakNall, District Khuzdar.
27.	PC-I Construction of 33 KV Sub-Station at Ahmed Wall, District Noushki.
28.	PC-I Provision of 50 KVA T/F & HT/LT Line for Killi Hassan Abad & Mengalabad Noukandi, District Chaghi.
29.	PC-I Provision of 50 KVA T/F & HT/LT Line for Degree College Area Dalbadin, District Chaghi.
30.	PC-I Village Electrification in NA-266, District Quetta.
31.	PC-I Provision of 50 KVA T/F & 250 Poles for NA-268, District Kharan Noushki & Chaghi.
32.	PC-I Construction of 132 kV G/Station at Kapoto with Allied 132 kV D/C T/L in & out arrangement (35 Km).
33.	PC-I for 500 KV Allama Iqbal Industrial City Grid Station and 220 KV M-3 Industrial City Grid Station for Supply of Power to Industrial Estates of FIEDMC. (NTDC)
34.	PC-I document for Technical Assistance (TA) for capacity building of CPPA-G with regards to Competitive Market Operations.
<b>FY 2019-20</b>	
1.	PC-Is of 18 X new Projects in PSDP 2019-20.
2.	PC-Is of 38 Electrification Schemes in QESCO.
3.	Proforma PC-I Provision of 50 KVA T/F & HT/LT line for Degree College area Dalbandin, District Chaghi.
4.	Proforma PC-I Village Electrification in (NA-226) District Quetta.
5.	Proforma PC-I 33 KV Sub Station at Ahmed Wall District Noushki.
6.	Proforma PC-I Provision of 50 KVA T/F & HT/LT line for Killi Hassan Abad & Mengalabad Noukandi.
7.	Proforma PC-I Construction of 33 KV Sub Station Totazai, District Kharan.
8.	Proforma PC-I Construction of 33 KV Sub Station at GhurakNall, District Khuzdar.
9.	Proforma PC-I Construction of 33 KV Sub Station Keshangi, District Noushki.
10.	Proforma PC-I Provision of 50 KVA T/F & 250 Poles for NA-268 District Kharan, Noushki & Chaghi.
11.	Proforma PC-I 11 KV line from Dalbadin Killi Haji Mir Muhammad Azeem Sargasha, District Chaghi.
12.	Proforma PC-I Provision of 50 KVA T/F & HT/LT line for Killi Hassan Abad & Mengalabad Noukandi.
13.	Proforma PC-I Electrification in (NA-66) District Quetta.
14.	Proforma PC-I Provision of 50 KVA T/F & 250 Poles for NA-268 District Kharan, Noushki & Chaghi.
15.	Proforma PC-I Construction of 132 KV Grid Station at Kapoto with Allied 132 KV D/C Transmission Line (in & out arrangement) (35 KM).
16.	PC-Is of new projects in PSDP 2019-20.
17.	Revised PC-I for 220 KV GIS Substation Ghazi Road Lahore.
18.	PC-Is of Mir Purkhas Under SDGs Program.
19.	PC-Is of Sanghar Under SDGs Program.
20.	3 <sup>rd</sup> Revised PC-Is for 128 MW KeyalKhawat Hydropower Project.



21.	PC-I for 220 KV QUAID-E-AZAM Business Park Grid Station for Provision of Electricity to PIEDMC Special Economic Zone (SEZ).
22.	PC-Is of BADIN under SDGs Program.
23.	PC-I for Construction of 132 KV D/C KHANOZAI-PISHIN T/Line (60 KM) and 2 <sup>nd</sup> Circuit Stringing of 132 KV Kala – Surab T/Line under PSDP 2020-21.
24.	PC-I for Establishment of National Electric Vehicle Research Centre
25.	PC-I for Industrial Energy Efficiency Initiatives to Supplement Sustainable Energy for All (SE4ALL).
26.	PC-I for Building Sector Energy Efficiency Initiatives.
27.	Construction of 132 KV Grid Station at Hazar Ganji (QESCO) with Allied 132 KV Double Circuit Transmission Line (06 KM) in & out arrangement).
28.	Construction of 132 KV (AIS) Grid Station at deep Sea Port (GWADAR) and Allied 132 KV Double Circuit Transmission Line (11 KM).
29.	Construction of 132 KV Grid Station at Industrial Estate Bostan with Allied 132 KV D/C Transmission Line (in & out arrangement) (25 KM).
30.	Integrated Energy Planning (IEP) – Electric Vehicle Analysis Policy Papers.

- Detail of WAPDA Inquiries Completed (28 No.)

Sr. No.	Description of the enquiry
<b>FY 2018-19</b>	
1.	Enquiries/Fact Finding in PDP No. 17 & 18 of AR-18-19 of WAPDA under Directives of DAC meeting dated 12-12-2018 relating to GM(P) North.
2.	Enquiries/Fact Finding in DP No. 1466 of AR-2011-12 of WAPDA under Directives of DAC meeting dated 12 & 13-03-2019 relating to GM(P) Tarbela.
3.	Enquiry / Fact Finding in Para No.2.4.6(DP NO.1384 – Golan Gol,DP No.1485-Keyal Khawar and DP No.1487, GM Hydel, Development on Account of Non-Recovery of Liquidated Damages Rs.610.96 million of AR-2016-17 of WAPDA under Directives of DAC Meeting.
4.	Enquiry/Fact Finding in DP NO.1247/2.4.1 of AR-2016-17 of WAPDA under Directives of DAC meeting dated 15-06-2019 pertaining to G.M (Hydel) Operation.
5.	Closure of Tunnel-3 (T3) of Tarbela Dam Project.
6.	Loss due to Extra Payment on Account of Supply of 110 V Battery Chargers from the supplier other than provided in Bidding Documents Rs 4.13 million (Golan Gol Hydropower Project).
7.	Enquiries/Fact Finding in PDP No. 16 of AR-2017-18 of WAPDA under Directives of DAC meeting relating to GM(P) Tarbela.
8.	Enquiries/FAC Finding in various Audit Paras (PDPS) of WAPDA, PAR of Jabban HPS for Audit Year 2016-17 under Directives of DAC.
9.	Draft Para No. 1655,1656,1690 and 1798 of Audit Report 2017-18.
10.	Enquiry /Fact Finding in PDP No.1826 of AR-2014-15 of WAPDA under Directives of DAC meeting dated 19-07-2019 pertaining to G.M. (Hydel) Operation.
11.	Non-Recovery of Liquidated Damages Rs 144.39 million (Jabban Rehabilitation Hydroelectric Power Station).
12.	Non-Recovery of Liquidated Damages Rs 123.925 million (Jabban Rehabilitation Hydroelectric Power Station).
13.	Delay in Completion of the Project Due to Non-inclusion of Additional Scope of Work at the time of Preparation Bidding Document (Jabban HPS).



14.	Irregular Payment due to Procurement without Factory Acceptance Tests at Manufacture Premises US\$ 0.258 million (Jabban HPS).
15.	Irregular Reliability Test Run of Unit No.1,2,3&4) (Jabban HPS).
16.	Non-Supply of Mandatory Spare Parts by the Contractor valuing US\$ 0.103 million) (Jabban Hydroelectric Power Station).
17.	Non-Achievement of Envisaged Benefits due to non-operation of Channels Rs 500.56 million (Satpara Dam Project).
18.	Non-Recovery/Adjustment of Advance given to the Contractor Rs 4.71 million (Satpara Dam Project).
19.	Loss Due to Less Annual Generation as Envisaged in PC-I Rs 226.29 million (Jabban Hydroelectric Power Station).
20.	Non-Receipt/Adjustment of Advances on Account of Acquisition of Land Rs 382.34 million (Jabban HPS).
<b>FY 2019-20</b>	
1.	Para No.4.4.2-Irregular Reliability Test Run (RTR) of Units No.1,2,3&4-Jabban Hydroelectric Power Station.
2.	Para No.4.6.3-Non Supply of Mandatory Spare Parts by the Contractor Valuing US\$ 0.103 Million Jabban Hydroelectric Power Station.
3.	Para No.4.3.4-Delay in completion due to Non-Inclusion of Additional Scope of Work at the Time of Preparation of Bidding Documents Jabban Hydroelectric Power Station.
4.	Para No.4.3.6-Loss due to delay in award of the main contract M/S HRI-CCPG JV for Rehabilitation of JABBAN Hydroelectric Power Station Rs.1,252.269 Million Jabban.
5.	Para No.4.3.9- Irregular Payment due to procurement without factory acceptance tests at manufacture premises US\$ 0.258 Million equivalent to Pak Rs.26565 Million Jabban.
6.	Para No.4.2.6-Loss due to non-recovery of liquidated damages charges Rs 132.925 Million Jabban Hydroelectric Power Station.
7.	Inquiry/Fact Finding in PDP NO.491 of AR-2019-20 of WAPDA (Loss due to delay in procurement-Rs.222.39M) under Directives of DAC meeting relating to CE/GM(P) Tarbela.
8.	Enquiries/Fact Finding in PDP No. 16 of AR-2017-18 of WAPDA under Directives of DAC meeting relating to GM(P) Tarbela.

- Detail of Miscellaneous Matters dealt during F.Y 2018-19

Sr. No.	Description
1.	Measures for Export Enhancement.
2.	Payment of Sales Tax on Electricity Generated & Supplied from Mangla Power Station, Mangla AJ&K.
3.	Gas/RLNG supply to Industrial Sector Exporters of Five Zero-Rated Sectors namely Textile (including Jute Carpets, Leather, Sports and Surgical Goods).
4.	Proposal for Development of 250 MW of Electricity Generation.
5.	Inter-Ministerial meeting regarding proposed visit of the Malaysian PM & Bilateral Political Consultation between Pakistan and Malaysia.
6.	Design Change of 147 MW Patrind HPP (PPIB).

7.	Soan Hydro Dam & Power Project (SHDP), Soan Valley Punjab, Pakistan Sustainable Solution for Economy, Power, Water Storage, Flood Control & Environment in Pakistan.
8.	Proposal for Retrospective EIA Study of Mega Hydel, Projects-Decisions taken in the Cabinet.

#### Dams & Barrages Safety Council/ DBSC-Wing

- PC-Is of 62 No. Dam Projects were reviewed. Detail is given as under:-

Sr. No.	Name of Province	Projects dealt during FY 2018-19		Projects dealt during FY 2019-20	
		No. of Projects	No. of Reviews	No. of Projects	No. of Reviews
1.	WAPDA	6	14	02	06
2.	KP	2	2	09	18
3.	Sindh	2	2	03	06
4.	Balochistan	6	6	32	80
	<b>Total</b>	<b>16</b>	<b>24</b>	<b>46</b>	<b>120</b>

- 13 No. of PC-II/ Feasibility Studies of Dam Projects were reviewed as per detail given below.

Sr. No.	Name of Province	No. of Projects	No. of Reviews on reported Projects
1.	WAPDA	7	15
2.	Balochistan	6	7
	<b>Total</b>	<b>13</b>	<b>22</b>

- Activities as **PANCOLD Secretariat**, DSC acts the Secretariat of Pakistan National Committee on Large Dams (PANCOLD) to maintain liaison with ICOLD and co-ordinate and follow up all activities related to PANCOLD with PANCOLD Members. The 45<sup>th</sup> meeting of PANCOLD was held on February 26, 2020 to promote cause of ICOLD with respect to its activities in Pakistan.

### 3. OFFICE OF PAKISTAN COMMISSION FOR INDUS WATERS (PCIW)

#### 3.1. Introduction

The office of Pakistan Commission for Indus Waters (PCIW) deals with the implementation of Indus Waters Treaty 1960 signed with India. According to Indus Waters Treaty 1960, the Permanent Indus Commission (PIC) is to meet regularly at least once a year, alternately in India and Pakistan. The role of the office of PCIW is to protect water rights of Pakistan as enshrined in the Treaty.

The main objective of this office is to protect the rights of Pakistan waters as the Treaty allows India to use the waters of the Western rivers for limited irrigation use and unlimited non-consumptive use for such applications as power generation, navigation, floating of property, fish culture etc. and to engage and counter India in construction of projects over the Western rivers as per Treaty provisions.

#### 3.2. Updates on Initiatives

- i. Till few years back, the particular requirement regarding tours of inspection was adequately being fulfilled with the average number of meetings of PIC standing between one and two. In the recent years, this number stands at one and for the years ending 31<sup>st</sup> of March 2019 and 31<sup>st</sup> of March 2020, even the mandatory meetings have not been held. Since the present regime took office on 18<sup>th</sup> August 2018, one meeting of the PIC and one tour of inspection have been held i.e. in August 2018 and January 2019, respectively.
- ii. It is important to mention here that the said tour of inspection was undertaken after a pause of more than four years. The matter is being followed up with India for the next meeting of PIC and the next tour of inspection as per Treaty provisions. In this regard, Pakistan has repeatedly been asking the Indian side vide its letters dated 9<sup>th</sup> April 2019, 8<sup>th</sup> May 2019, 1<sup>st</sup> August 2019, 8<sup>th</sup> August 2019, 23<sup>rd</sup> August 2019, 13<sup>th</sup> September 2019, 8<sup>th</sup> October 2019, 12<sup>th</sup> March 2020 and 27<sup>th</sup> March 2020 for the mandatory meetings of PIC for the year 2019 and 2020.
- iii. For the year 2020, keeping in view the severe health crisis emerged due to the spread of COVID-19, the India side proposed to convene the meeting of Permanent Indus Commission on virtual mode. Owing to the health emergency emerged due to Covid-19, as a reason, the Indian side proposed online. However, after due consultation Pakistan maintained that meeting of PIC should rather be scheduled on conventional format. The 116<sup>th</sup> meeting of PIC was held at New Delhi on 23<sup>rd</sup> -24<sup>th</sup> March 2021. Several agendas such as Durbuk HEP (19 MW), Nimu Chilling HEP (24 MW) were discussed during the meeting at New Delhi between the two countries. Subsequently discussion were held on upcoming flood season 2021 and the objections raised by Pakistan regarding PakalDul and Lower Kalnai HEPs.
- iv. The Ministry of Water Resources kept the stakeholders informed about issues as well as the progress being made on the issues from time to time.



## 4. WATER AND POWER DEVELOPMENT AUTHORITY

### 4.1. Water Wing

WAPDA Water Wing is responsible for planning, designing and execution of water resources development projects in the sector of irrigation, drainage and hydropower. Inter-provincial major surface water projects including large dams are also operated and maintained by Water Wing, WAPDA.

WAPDA under Indus Basin Replacement Works has completed Mangla Dam (1967), Tarbela Dam (1976), 5 Barrages and 8 inter-river Link Canals (1965-70) which are contributing substantially towards national economy.

In order to reclaim 18 Million acres from waterlogging & salinity in four provinces, WAPDA has installed more than 15,000 tubewells, constructed 12,000 km of surface drains and 13,000 km of Tile drains. All these projects have already been handed over to respective provinces for the future O&M.

Apart from above, WAPDA has completed various water & power sector projects, while work is ongoing on numerous projects.

#### 4.1.1. Completed Projects

- Chashma Hydropower Project, having a generation capacity of 184 MW of electricity, has been in operation since 2001.
- Ghazi Barotha Hydropower Project with a generation capacity of 1,450 MW of electricity has been functioning since 2003.
- National Drainage Programme in four provinces has been completed since June 2007.
- Sabakzai Dam Project with CCA 6,875 acres, has been completed in June 2009 and handed over to Provincial Irrigation Department, Govt. of Balochistan on 30.06.2010.
- Mirani Dam Project completed in June 2007 and the dam has been handed over to Irrigation Department, Govt. of Balochistan on 15.10.2018.
- Greater Thal Canal (Phase-I) has been completed in June 2009 and cultivating 355,000 acres.
- Civil works of Mangla Dam Raising Project have been completed in December 2009, whereas Resettlement Works are expected to be completed by June 2020 (subject to approval of 2<sup>nd</sup> Revised PC-D).
- Commercial operation of Khan Khwar HPP (72 MW) started in Nov 2010.
- Satpara Dam (Power house Unit 1 & 2) started commercial operation in Oct 2007 & Dec 2008 respectively and remaining two units (Power house # 3&4) in June 2013.
- AllaiKhwar HPP (121 MW) and Jinnah HPP (96 MW) are in commercial operation since March 2013 & Oct 2013 respectively.
- GomalZam Dam was inaugurated in September 2013, while work on Irrigation Component (Waran Canal) was completed in 2019.
- DuberKhwar Hydropower Project (130 MW) started commercial operation in March, 2014.
- Darawat Dam has been completed in August 2014 and its Irrigation system handed over to Irrigation Department, Govt of Sindh on October 27,2018.

- Raineer Canal Project (Phase-I) having CCA 113,690 acres stands completed in June 2014.
- Kachhi Canal (Phase-I) having CCA 72,000 acres substantially completed in August 2017.
- Golen Gol HPP (108 MW), Tarbela 4<sup>th</sup> Extension HPP (1,410 MW) and NeelumJhelum Hydropower Project (969 MW) are in commercial operation since 2018.

#### 4.1.2. Ongoing Projects

- KurramTangi Dam (Stage-I, 18.9 MW) is under construction.
- Work on Drainage Schemes RBOD-I & III in Sindh and Balochistan are in progress.
- Construction of Main Works of Dasu HPP Stage-I (2,160 MW) are in progress.
- PC-I for remaining work of Kachhi Canal has approved by ECNEC on 16.03.2020 whereas remaining works will be completed in a period of three years.
- The construction of infrastructure work of Diamer Basha Dam (4,500 MW) which includes Employee's Colony, Staff Offices, School etc. have been awarded and work is under progress while PC-I of Main Dam works amounting to Rs.479,686 Million (including Tangir HPP) has been approved by ECNEC on 14.11.2018. Board of Directors Diamer Basha Development Company (DBDC) (Pvt) Ltd, approved the award of Consultancy Service contract for Construction Design, Construction Supervision and Contract Administration of Diamer Basha Dam Project to M/s Diamer Basha Consultant Group (DBCg) on 20.12.2019. Consultancy Services agreement was signed on 11.05.2020 and Consultancy Services commenced from 10.06.2020. Moreover, Board of Directors of Diamer Basha Development Company (DBDC) approved the award of Contract MW-1 Dam Part (Civil Works) and Tangir Hydropower Works to M/s Power China-FWO JV on 04.03.2020. Contract Agreement was signed on 13.05.2020.
- Contract for Civil and Electro-Mechanical Works of Mohmand Dam signed between WAPDA and M/s CGGC-DESCON JV on 26.03.2019. Contractor started Mobilizing its Manpower and Machinery at site on 04.04.2019. Agreement for Consultancy Services for Construction Design, Construction Supervision & Contract Management of Mohmand Dam HPP signed on 20.05.2019. Ground breaking ceremony of Mohmand Dam HPP was performed by Honorable Prime Minister of Islamic Republic of Pakistan on 02.05.2019. Whereas construction activities are in progress.

#### 4.1.3. Future Projects

- Detailed Engineering Design of Bunji HPP (7,100 MW) and Phandar HPP (80 MW) have been completed.
- Contract for Consultancy Services for Detailed Engineering Design, preparation of tender documents & Construction Supervision of the Harpo HPP (34.5 MW) signed on 26.04.2019.
- Feasibility study for Lower Palas valley HPP (665 MW) and Lower Spat Gah HPP (496 MW) completed.
- Feasibility Studies of Patan HPP (2,400 MW) and Chiniot Dam (80 MW) have been completed whereas Feasibility Studies of Thakot HPP (4,866 MW) & Shyok Dam (640 MW) are under final stage. Work on Feasibility Study of Bhimber Dam (2 MW) and Detailed Engineering Design of Tank Zam Dam (25.4 MW) will be initiated after approval of PC-II.
- PC-II for Feasibility Study of Sindh Barrage Project (1.8 MAF) using in house resources approved by Departmental Development Working Party (DDWP) on 01.11.2019 and



Ministry of Water Resources accorded administrative approval on 17.12.2019 at a rationalized cost of Rs. 327.528 Million, whereas its Feasibility Study is in progress.

- As per priority of Government of Gilgit-Baltistan, implementation of Basho HPP (40 MW) will be considered in Phase-II after construction of Harpo HPP (34.5 MW).

## 4.2. Power Wing

### 4.2.1. Refurbishment and Up-Gradation of Generating Units of Mangla

Mangla Dam / Power Station is located on River Jhelum at about 120 KM from Islamabad, is a multipurpose project, constructed in 1967 primarily for Irrigation. The other by products are Power Generation, Fish Culture, Tourism.

Mangla Power House was completed in four different stages. The initial phase comprising four units of 100 MW each was completed in 1967-69. The first extension of Units No. 5&6 (2x100 MW) was completed in 1974 while second extension comprising Unit No. 7&8 (2x100 MW) was completed in 1981. The project attained its maximum capacity of 1000 MW with the final extension of Unit No (2x100 MW) in 1993-94.

Mangla reservoir had initial gross capacity of 5.88 MAF, which reduced to 4.674 MAF with the passage of time due to sediment deposition. Keeping in view the capacity loss due to sedimentation and provision for raising in the original design, Raising of Mangla Dam was started in 2004 and the project was completed in 2009. The Dam height has been raised by 30 feet while maximum conservation level increased from 1,202 feet to 1,242 feet corresponding to additional water storage capacity of 2.88 MAF. There will be Average Annual Incremental Energy of 1632 GWh due to availability of more water and rise in net head of machines.

There are four age groups of Mangla machines Units (50 years), Units 5-6 (43 years), Units 7-8 (36 years) & Units 9-10 (24 years). Units 1-6 with age of 40-50 years have outlived their useful life which has hampered their operational reliability apart from more expenditures on their maintenance due to obsolete equipment. Efficiency of Turbines has reduced from their designed values and the Hydraulic/Mechanical Equipment became unreliable due to aging. Dam life has enhanced after completion of the Dam Raising Project but the old generating units do not have life compatibility with the Dam.

WAPDA planned to carry out up-gradation & refurbishment of the old generating units and allied equipment to ensure their optimized operational life in the post Raised Mangla Dam scenario. As a first step, feasibility study was carried out by WAPDA through the Consultants MWH-NESPAK JV (MRP JV) and Final Feasibility Report was submitted in December, 2011. Based on the results of extensive studies, MRP JV recommended up-gradation from 1,000 to 1,310 MW at 0.8 Power Factor as it satisfies all the objectives of Scope of Work. Refurbishment Works have been divided into eleven (II) Packages for ease of implementation.

### Present Status

- PC-I amounting to PKR 52,224.31 million (US\$ 483.56 million) approved by ECNEC on 31.12.2013.
- USAID is providing grant amounting to US\$ 150 million for Package-I (units 5&6) and Balance of Plant. Out of which Project Implementation Letter (PIL-I) amounting to US\$ 72 million was signed on 06.03.2014. PIL-II amounting to US\$ 78 million was signed on 12.12.2018.



- AFD France is providing loan amounting to € 90 million for Package-VII (units 1-4). Credit Facility Agreement (CFA) has been signed on 20.07.2017.
- Contract for Package I & VII (units 1-6) amounting to PKR 10.8 billion awarded to M/S G.E Hydro France on 29.08.2016. Refurbishment activities are in progress.
- Contract for Package-II (Power House cranes) amounting to PKR 348,486,355 awarded to M/sZirva-ISIK-Petrocon JV on 10.11.2015. Refurbishment works has been completed and Taking Over Certificate (TOC) & Defects Liability Certificate (DLC) has been issued.
- Contract for Package-III-A for Main Power Transformers units 3,4,5,6 amounting to PKR 534,172,385 awarded to M/s China on 11.03.2016. All Transformers has been received at site.
- Contract for Package-IV-a for Supply of Turbine Inlet Valves amounting to JPY 686,624,116 awarded to M/S Kokusai Commerce Co., (KC) Ltd Japan (nominated Contractor of M/S HM Hydro Japan, Original Equipment Manufacturer) on 11.03.2016. All equipment has been received at site and Work is in progress. Technical Advisor (TA) services are being provided at site.
- Contract for Package-V for Balance of Plant Mechanical) amounting to PKR 3,031,015,173 awarded to M/S Zhejiang Orient Engineering Company Limited, China on 19.06.2019.
- Contract for Package-VI+VIII for Balance of Plant Electrical & Control systems amounting to PKR 3,818,086,574.00 awarded to M/S Sinohydro China on 08.01.2019.
- Contract for Package-IX for Switchyard amounting to PKR 1,683,865,473 awarded to M/S China CAMC Engineering Co. Ltd. on 17.09.2018.

#### 4.2.2. WARSAK Hydroelectric Power Station – 2nd Rehabilitation

Warsak Dam/Hydroelectric Power Station on River Kabul is located in Khyber/ Mohmand Agencies, 30 Km from the city of Peshawar, Khyber Pakhtunkwa. Project was financed by the Canadian Government under Colombo Plan. The First Phase completed in 1960-61 consisted of Dam, Irrigation tunnels, four generating units, each of 40 MW (total 160 MW) and 132 KV transmission lines. In the Second Phase (1980-81), two more units of 41.48 MW each were added, the total capacity thus raised to 242.96 M W (say 243 MW). The Dam has almost silted up and the Power Station is now practically operating as run-of-river.

Phase-I Rehabilitation was carried out due to two major reasons. Structural deformation due to Alkali Aggregate Reaction (AAR) and secondly, severe erosion of the hydraulic equipment due to abrasive nature of silt carried in the Kabul River. Governments of Pakistan and Canada jointly carried out the Rehabilitation Project under CIDA Grant of CD 27 million during 1996-2006. The Civil Structures became stable, besides, the reduced capacity of Power Station increased from 150 MW to about 220 MW as a result of rehabilitation.

The aging problems of equipment aggravated further with the passage of time, and generating capacity reduced to 193 MW along with reliability of the station also reduced. Second (2<sup>nd</sup>) Rehabilitation of Warsak Hydroelectric Power planned with the objective to overcome the aging problems, regain the capacity loss of 50 MW with reliable annual energy generation of 1,144 GWh, by upgrading and modernizing the old system in order to achieve another life cycle of 30 to 40 years.

### Present Status

- Feasibility Study, Tender Documents and Detail Design were completed by the consultants RSWI(Canada)-DCE (Pakistan) JV.
- PC-I of the Project was approved by ECNEC in its meeting held on 09.07.2015. Administrative approval of the project issued by MoW&P on 27.10.2015.
- AFD / KIW / EIB (EDPs) are providing a loan of Euro 130 million for the Project. Loan Agreements have been signed with donors during September to November 2015.
- AFD is also providing additional finances in the form of EU Grant amounting Euro 4.5 Million for Community Development, Flood Management Action, Sediment Management Action, Enhancement of Maintenance Workshop etc.
- The Project Management and Construction Supervision Consultants, a joint venture of M/s Dolsar (Turkey), COBA (Portugal), DMC and BAK (Pakistan) jointly called Warsak Rehabilitation Consultants (WRC) has taken up the review of detailed engineering design, refraining of contracting strategy and finalization of bidding documents for the project while hiring of consultancy services for grant components are in progress.
- Invitation for Bids for E&M Package and Civil Works Package have been launched on 20.03.2019 with opening dates as 26.09.2019 and 30.07.2019 respectively.
- After two unsuccessful biddings, invitation for Bids shall be launched for Supply of Heavy Mechanical/Workshop Equipment again shortly.
- Physical progress of 6.5% has been achieved.
- Financial progress of 6.09% has been achieved.

#### 4.2.3. Rehabilitation of Dargai Hydroelectric Power Station – Dist. Malakand

Dargai Hydroelectric Power Station having installed capacity of 20 MW is located in Dargai Malakand District about 202 km from Islamabad. The Power Station commissioned in 1952 belongs to the technologies of old era and installed equipment has now become obsolete as well as more vulnerable to the defects / break downs. Up-gradation and modernization with state-of-the-art technology is dire need of the day.

Most of the major components of the plant including Penstocks Valves, Inlet valves, Governors, Pressure Relief Valves, High Voltage Switchgear, Medium Voltage Switchgear, Power Control Cables, Protection, instrumentation & control system Generator Windings etc. have outlived their useful lives and deteriorated due to excessive wear & tear causing reduction in turbine efficiency and capacity of the plant (reduced to 18 MW against 20 MW).

WAPDA has completed a Feasibility Study for rehabilitation of E&M equipment to ensure efficient & reliable operation of the generating units with enhanced capacity of at least 22 M W for another life cycle of 35–40 years.

#### Present Status:

- PC-I Proforma of the Project has been approved by ECNEC in meeting 14.11.2018, with a total cost of PKR 4,050.364 million, to be implemented in period of 71 months.
- AFD's combined financing of €50 million has been approved by their board. Out of which € 35 million has been allocated for this Project.
- Credit Facility Agreement has been signed on 19.07.2019 whereas Subsidiary Loan Agreement (SLA) has been signed on 14.10.2019.



- Evaluation of RFP, issued to the prequalified Consultants, for hiring of consultancy services for Detailed Engineering Design, Preparation of Tender Documents and Construction Supervision for Implementation is in progress.
- WAPDA Authority in its meeting held on 31.01.2020 approved Combined Technical & Financial Evaluation Report and allowed to negotiate with the Top Ranked Bidder.
- Negotiations with the M/s PES (Pvt.) Ltd Pakistan in association with M/s Knight Piesold Consulting USA (Top Ranked Bidder) commenced on 11.03.2020. Joint Note & Draft Contract Agreement is under preparation.
- 08 posts out of 31 sanctioned in PC-I have been activated on 24.02.2021 however, postings are awaited.
- No physical or financial progress has yet been achieved.

#### 4.2.4 Capacity Enhancement of Chitral Hydel Power from 1 MW to 5 MW

Chitral Hydel Power Station having a capacity of 1 MW is located on the right bank of Lutkho River 5 km upstream of Chitral City. The Project was commissioned in 1975 by diverting the flows of Lutkho River through 3.72 km long channel and installing 2 units of 200 Kw and 2 units of 300 kW each. The power generated from Chitral Hydel Power Station is supplied to Chitral City through 11 KV Transmission Line.

The power demand in Chitral area has increased and there is a dire need to upgrade the capacity of existing Hydel Power Station at Chitral. The river has abundant flows which can be utilized for Power Generation by constructing a small diversion weir, remodeling of power channel & fore bay and installation of new penstocks and additional units. It is estimated that the Power can be enhanced up to 5 MW.

WAPDA had carried out preliminary studies. Topographic Survey, Geological Mapping for weir Intake / Power Channel / Power House areas and drilling at weir / Power House area. Tender Design Report has been completed by Hydro Planning WAPDA in May, 2012.

##### **Present Status:**

- The PC-I for Capacity Enhancement of Chitral Hydel Power Station Project has been approved by Ministry of Planning, Development and Reforms on 08.03.2017.
- AFD's combined financing of €50 Million has been approved by their board. Out of which €15 Million has been allocated for this Project.
- Credit Facility Agreement has been signed on 19.07.2019 whereas Subsidiary Loan Agreement (SLA) has been signed on 14.10.2019.
- After AFD's No Objection Letter (NoL), Request for Proposal (RFP) was directly floated in Open Market on 19.01.2020. Seven (07) proposals were received by the deadline i.e., 12.03.2020.
- No Objection Letter on RFP for hiring of Consultancy Services by Direct Floating is awaited from AFD being the Donor Agency.
- Evaluation of Technical Proposals is in progress.
- No physical or financial progress has yet been achieved.

#### 4.2.5 Hydro Power Training Institute (HPTI) Mangla

Mangla Training Centre is the only source of providing O&M training for hydro power Engineers and technical staff. It was established in 1977 and functioning in very old building, relying upon limited resources.



WAPDA has planned to upgrade the existing training centre and proposed establishment of Hydropower Training Institute (HPTI) at Mangla to be equipped with state-of-the-art equipment which will meet the following objectives for training of Engineers & Technical staff.

- To enhance technical capability of the Engineers regarding modern maintenance techniques, covering all aspects of Hydropower Plant equipment with due emphasis on the latest technology.
- To impart necessary training for introducing the latest computerized Maintenance Management systems at WAPDA Hydel Stations.
- Practical orientation of Engineers and other Technical Staff through Test Laboratories, Workshops etc.
- To get acquainted with the latest practices of Refurbishment and Rehabilitation of old Hydel Stations/ equipment.
- To update the present operating and monitoring procedures.
- To study various technical problems of Hydel units and their solutions through visits to different Hydropower Plants.
- To impart adequate knowledge of Design aspects to the Engineers.
- Comprehensive knowledge relating to different stages of new Hydropower Projects.

#### **Present Status**

- PC-I for Establishment of Hydro Power Training Institute approved in principle by CDWP on 29.11.2013 amounting to PKR 486.151 Million. Planning Division issued Authorization letter on 02.12.2015. Accordingly, Ministry of Water & Power issued administrative approval on 21.04.2016.
- European Union- Asian Investment Facility (EU-AIF) providing Euro 2.5 Million grant through AFD to be used for construction of building, procurement of technical equipment and Training of Trainers/ consultancy services charges. A component of Euro 1.5 million is also provided by AFD as a part of loan for Warsak Rehabilitation Project.
- Construction of Boundary Wall at a cost of Rs.19.35 million has been completed on 30.04.2016.
- Contract for hiring the consultancy services for construction supervision has been awarded to M/s NESPAK on 26.02.2016 at a cost of Rs. 36.769 million.
- Contract for construction of building of Hydropower Training Institute (HPTI) Mangla at a cost of Rs. 241.457 million was signed with M/s A.S Khan Construction Ltd Islamabad on 02.12.2016. Contractor mobilized to site on 15.12.2016 & work is under progress with 98% physical progress.
- Contract for Consultant's Services to Support WAPDA in Modernization, Review & Remodeling of Training Courses & Procurement of Training Equipment for Hydropower Training Institute (HPTI) Mangla amounting to Rs 126.259 Million was signed with M/s Integration- Electra-JV on 10<sup>th</sup> February, 2018.
- Bids for Procurement of Training Hardware and Tools for Hydropower Training Institute (HPTI) Mangla were opened on 12.11.2018 wherein two Bidders submitted their Bids for Lot I: (Training workstations) & Lot III: (Instruments/Devices). However, no bidder submitted bid for Lot II: Teachware (scale and cutaway models including 3D-PDF models) and Lot IV: (Hydropower Simulation Software).

#### 4.2.6. Tarbela Hydel Power Station

##### **Operation:**

Tarbela Power Station has a total installed capacity of 3478 MW (10 units of 175 MW and 4 units of 432 MW each). The operational, statistical data/information in respect of Tarbela Power Station for the financial year 2018-19 is as follows:

1.1	Installed Capacity	3478 MW
1.2	Progressive Units Produces since commissioning up to 30 <sup>th</sup> June, 2019.	498,70808 Billion KWh
1.3	Units Produced during (2018-19)	10619.782 Million KWh
1.4	Net Electrical Output (2018-19)	10588,762 Million KWh
1.5	Max. Daily Generation Recorded	83,389 Million KWh On 14 Aug-2018
1.6	Max. Monthly Units Produced	2563.156 Million KWh (Aug-2018)
1.7	Max. Load recorded	3461 MW on 10 Aug-2018

##### **Generator Stator Winding Units # 9 & 10:**

Contract Agreement No. C-720 was signed on 31.07.2017 for Supply and Supervision of Installation, Testing and Commissioning of Stator Winding of Unit # 9 & 10. The installation, testing and commissioning work of generator stator winding on Unit # 10 has been successfully completed w.e.f 02-10-2018 to 27-03-2019. Till date the Unit is running successfully for commercial operation. The re-winding of Unit has compensated the loss of 45 MW that was previously being suffered because of its restricted load.

##### **Partial Discharge Analysis of Stator Winding Units 5-8:**

In the year 2016, whitish corona spots were noticed on end stator winding of Units 5-8, indicating Partial Discharge phenomenon due to deterioration in stator winding. To investigate the extent of deterioration, Partial Discharge Analysis was performed on all four Units in February, 2019 Report of the Analysis is being prepared which will determine the condition of stator winding and estimated time to rehabilitation.

### Procurement of 01 No. Runner Units 5-8:

Considering the useful life of the equipment, a stainless steel runner of modified design and improved version (vibration free & resistant to erosion/ cavitation) of worth Euro 3.977 million, has been procured and received at site. The installation, testing and commissioning will be carried out 2020-21.

### Repair Work Draft Tube # 11

The inspection of the damaged portions of Draft Tube has been carried out. 43 Nos. of holes are drilled and anchored to strengthen the existing steel liner. Draft tube treated with epoxy chemical and grout material to prevent further damage. Hiring of consultant is underway for detailed study of causes of erosion and suggest remedial measures for implementation.

### Up-Gradation of 220 KV Switchyard

Contract Agreement No. 712 Dated 10.01.2017 has been signed for the switchyard Bay 0-7 of Tarbela Power Station. The upgradation shall facilitate the power evacuation from newly commissioned Tarbela 4<sup>th</sup> extension and the equipment is designed in accordance with the new fault levels after increased capability due to T-4<sup>th</sup> extension.

### Up-gradation of 500 KV Switchyard

Up-gradation of 500KV switchyard Units (Bay 8-13) including circuit breakers, disconnect switches and bus bars is in progress and work is being executed through contractor M/S CCCE under contract awarded by P.D T-4<sup>th</sup> Ext-Project. Following milestones have been accomplished during 2018-19:

- i. Replacement of the 500KV Air Blast Circuit Breakers with 500KV SF-6 CircuitBreaker in 500KV Bay 08 to 13.
- ii. Replacement of the 500K V Air operated Disconnect switches with motor operated disconnect switches in 500KV Bay 08 to 13.
- iii. Replacement of the 500/220KV Auto Transformer rated 237MVA with higher rating of 450 MVA.

#### 4.2.7. 4th Ext. Tarbela Hydel Power Station

Tarbela 4th Hydel Power Stations is newly constructed powerhouse with installed capacity of 1410 MW (3 units of 470 MW each). All the units have been commissioned and are under commercial operation.

Following Commercial Operation Dates (CODs) and completion of Reliability Test Run of the units have been achieved after issuance of Facilities Completion Certificates and carrying out the dry and wet commissioning respectively:



Units	Date of Issuance of Facility Completion Certificate (FCC)	Date of Completion of Wet Commissioning	Commercial Operational Date of Unit (COD)	Date of Completion of Reliability Test Run of the Unit (RTR)
17	30.01.2018 & 07.02.2018	02.03.2018	02.03.2018	28.09.2018
16	30.03.2018 & 07.04.2018	30.06.2018	30.06.2018	11.10.2018
15	10.05.2018	22.10.2018	22.10.2018	22.11.2018

The Inauguration of the T4 Power House was done on 10.03.2018.

### Operational

Operational abstract of the plant is as under please:

Installed Capacity	1410 MW
Progressive Units Produces since commissioning up to 30 <sup>th</sup> June, 2019.	2,496 Billion KWh
Units Produced during (2018-19)	2,318 Billion KWh
Net Electrical Output (2018-19)	2,311 Billion KWh
Max. Daily Generation Recorded	23,133 Million KWh On 09 <sup>th</sup> Oct, 2018
Max. Monthly Units Produced	473,831 Million KWh (June, 2019)
Max. Load recorded	1276 MW on 08 <sup>th</sup> Oct-2018

### Guarantee Tests

Turbine Guarantee efficiency test was carried out in November 2018 under the supervision of Project Office and Consultants. Mr. John Gummer (Member IPOE) was Chief of Test. After conducting the test, the measured efficiency @ available head (105 m) met the guarantee in comparison with the efficiency values measured during model test @ 105 m head.

#### 4.2.8. Chief Engineer / Director General (Purchase & Disposal) WAPDA

The office of Chief Engineer/Director General (Purchase & Disposal) WAPDA provides technical assistance to other WAPDA formation regarding:

- Purchase of common use items.
- Execution of Rate Contract
- Onsite verification of unwanted, surplus and unserviceable materials
- Disposal of unserviceable vehicles, material and heavy mobile machinery.

### Purchase Verification Directorate

During the FY 2018-19, 05 No different tenders for direct purchase of different items (such as lubricants, photocopier machines, welding electrodes, MIS Forms etc.) were floated by this office, and Purchase Orders valuing PKR 52,638 million were placed upon different firms in this regard. All the purchase orders have been successfully completed and deliveries have been made to respective consignees.

In addition, Rate Contracts of miscellaneous items such as imported tyres, automotive batteries, liveries for technical staff, uniform for security staff, electric items, papers and file covers etc. were earned out by this.

Verification section of this directorate conducted onsite verification of Survey Reports for the disposal of unwanted material worth PKR 200.28 million.

### **Disposal Directorate**

During the FY 2018-19, Disposal Directorate of this office disposed off 79 No vehicles amounting to PKR 29.160 million, 22 lots of material valuing PKR 61.828 million and 34 No Heavy Mobile Machinery of worth PKR 429,933 million belonging to different formations of WAPDA.

#### **4.2.9. General Manager (Training) WAPDA**

##### **Overall Introduction of WAPDA Training Set-up**

WAPDA Training Department is working as self-financing unit on no profit no loss basis under Member (Power). It is led by General Manager (Training) who heads two premier Training Institutes namely Wapda Administrative Staff College (WASC), Islamabad and Wapda Engineering Academy (WEA), Faisalabad. The Training Institution at Islamabad is responsible to cater with the managerial needs of WAPDA/PEPCO/GENCOs/NTDC officers/officials whereas the Academy at Faisalabad is responsible to look after the technical requirements of officers and upper technical subordinates working in different echelons in WAPDA/PEPCO/GENCOs/NTDC. WAPDA has its own Examination Directorate working under GM (Training) who conducts Departmental Promotion Exams. (DPEs) for various categories of officers / officials.

##### **Trainings at WASC Islamabad**

WAPDA Administrative Staff College (WASC), Islamabad is an in house Management Training Institution. WASC provides Mandatory Management Training to the officers of WAPDA / PEPCO/NTDCL/ AJK at four tiers i.e. BPS 16-19. WASC has highly qualified and dedicated faculty consisting of 14 officers. Moreover, scholarly and experienced Guest Speakers from relevant fields in academia and industry are invited to deliver lectures in their specific fields of expertise.

The beautiful red-brick campus of WASC is located at Pitrus Bukhari Road H-8/1, Islamabad. It has a well-furnished hostel and messing facilities for lodging and boarding for course participants. The hostel consists of 79 Rooms. WASC campus also consists of a beautiful Mosque and Sports Centre.

Following mainstream courses are conducted at WASC:

1. Senior Management Course
2. Middle Management Course
3. Junior Management Course
4. Elementary Management Course

Other than main stream courses, the short courses on Project Management and Engineering Management are held at WASC. The college also offers following short courses "on demand" as per requirement of stakeholder's formation:

- a. Project Management along with its software tools (Two week)
- b. Financial Management (One week)



- c. Procurement / Contract Management (Two week)
- d. Land Acquisition and Resettlement (One week)
- e. ERP / Smart Computer (One week)
- f. Project planning documents (PC-I / Feasibility study) (Two week)

WASC team under the leadership of Mr Muhammad Arfan, Chief Engineer / Principal WASC is making efforts to improve the modules of training courses, the presentation activities as well as course curricula of all the mainstream courses by making them mutually exclusive. A comprehensive course outline booklet of all the mainstream courses has already been published. The new format of courses is being successfully implemented. The response of participants regarding new and innovative format of courses is very positively encouraging.

Unfortunately, COVID-19 pandemic has badly affected educational / training systems at WASC which were suspended in March 2020.

A Training Development Committee (TDC) comprising senior officers from all the stakeholders have been constituted / framed in 2019 to get the constructive suggestions/feedback from all the stakeholders for improving the training methodology.

In order to make sports activities as a compulsory part of management courses, the sports club at WASC has already been revived. Participation in sports activities is made mandatory for participants of all courses. Inter classes tournaments are conducted at sports club and ceremony is organized for distribution of prizes.

As a part of course, the participants are taken for educational instructional visits of various public and private sector organizations within the country. During the 2<sup>nd</sup> wave of Covid-19 pandemic, tours have been restricted to one day inland only. The participants of management courses visit in land important public and private organizations for their exposure to the best management practices.

#### **Courses Conducted by WASC, Islamabad during 2018-19**

20 No. Management Courses were planned at WASC, Islamabad for 520 participants. The actual courses were held with slight variation i.e., 18 Nos. and 437 candidates from different formations of WAPDA participated in various Management Trainings at WASC, Islamabad.

#### **Courses conducted by WASC, Islamabad during 2019-20**

<b>Courses Conducted</b>	<b>Target Group (BPS)</b>	<b>Duration (Weeks)</b>	<b>No. of Courses</b>	<b>No. of Participants</b>
Senior Management Course	19	11	1	27
Middle Management Course	18	09	06	159
Junior Management Course	17	09	05	160
Elementary Management Course	16	04	05	129
Engineering Management Course	17, 18, 19	4	1	18

Courses Conducted	Target Group (BPS)	Duration (Weeks)	No. of Courses	No. of Participants
<b>TOTAL COURSES / PARTICIPANTS</b>			<b>18</b>	<b>493</b>

### Trainings at WAPDA Engineering Academy (WEA), Faisalabad

In the FY 2018-19, 46 No. Refresher / Sector Specific / Technical courses were planned at WEA Faisalabad for 1034 participants. Refresher / Sector Specific / Technical courses are also mandatory for promotion of various categories of officers / officials serving in WAPDA / PEPCO / NTDC / GENCOs. The actual courses were held with slight variation i.e., 31 Nos. and 608 candidates from different formations of WAPDA participated in these courses of WEA, Faisalabad.

In Financial Year 2019-20, 39 Nos. Refresher / Sector Specific / Technical courses were planned at WEA, Faisalabad for 831 participants. Refresher / Sector Specific / Technical courses are also mandatory for promotion of various categories of officers / officials serving in WAPDA / PEPCO / NTDC / GENCOs. The actual courses were held with slight changes i.e., 18 Nos. 469 candidates from different formations of WAPDA participated in these courses.

*Variation is usually due to spare-ability of staff / officers by respective formations on account of exigency of work / COVID 19 Pandemic.*

### Departmental Promotion Exams (DPEs)

WAPDA conducts DPEs in 165 various categories of officers/subordinate staff for promotion from BPS-16 to 17, 17 to 18 & 18 to 19 respectively. Annually average 2400 employees/officers participate in DPEs conducted in five sessions in a FY i.e. August, November, January, March & May as per schedule issued by Examination Directorate.

Training Data regarding WASC Islamabad, WEA Faisalabad and WAPDA Examination directorate is already available at WAPDA Website under GM (Training) web link with address "[wapda.gov.pk/index.php/trainings-in-WAPDA](http://wapda.gov.pk/index.php/trainings-in-WAPDA)".

### WAPDA Examination Directorate:

- Departmental Promotion Examinations
- Departmental Up-gradation Examinations
- Screening of BPS-19
- Any other special examination assigning by Authority
- Departmental Promotion / Up-gradation Exams are conducted 164 categories of WAPDA, PEPCO, DISCOs, GENCOs, NTDC and PITC.
- Examinations are conducted at following centres.
  - Lahore
  - Faisalabad
  - Multan
  - Islamabad
  - Tarbela
  - Peshawar
  - Hyderabad
  - Quetta



Training data regarding WAPDA Administrative Staff College, Islamabad, WAPDA Engineering Academy, Faisalabad and WAPDA Examination Directorate is available at WAPDA Website under GM (Training) web link with following address: "wapda.gov.pk/index.php/trainings-in-wapda".

### **Budget**

WAPDA Training Department being a self-financing unit meets its budgetary expenses on no profit / no loss basis by collecting training charges and examination fee per participant from respective formations of WAPDA, PEPCO, NTDC & GENCOs. The annual budget in FY 2019-20 was Rs.560 million out of which a major portion of budget i.e., approximately Rs.500 million is spent on Pay & Allowances / post-retirement benefits. Rest of the budget barely meets the expense for Repair & Maintenance of large building infrastructure of WASC Islamabad and WEA Faisalabad, O&M works, Transport vehicles, payment of guest speaker fee invited to deliver lectures from different well-known countrywide formations.

### **Future Plans / Achievements**

- Renovation & Furnishing of Infra-structure of Building / Class Rooms
- Extension of I.T Lab.
- Refresher courses, Seminars and workshops of short duration (03 Days & 01 Week) for WAPDA / Outside WAPDA officers are planned at WASC
- Project Management & Engg. Management course (as per demand)
- Training Modules have been updated in coordination with stake holders through Training Need Assessment (TNA) Committee and have been incorporated in various training courses being taught at WASC Islamabad & WEA Faisalabad.
- SOP – 2015 for Training of BPS 05 to 15 employees of different categories regarding their Promotion/ up-gradation prepared by this office and got approved from the competent authority on 29 May, 2015 and has been issued by this office.
- Restructuring / Right sizing of WAPDA Engineering Academy, Faisalabad has been started which will hopefully reduce the establishment cost substantially.
- Public Sector is being requested for nomination of their participants / candidates to participate in different Training Courses at WAPDA Engineering Academy, Faisalabad.
- Government Departments of Azad Jammu and Kashmir (AJK) are being requested to send their trainees at WEA, Faisalabad.
- Different Science & Technical Organizations, other Semi Government Department and Private Organizations are being contacted for nomination their trainees to get training from WAPDA Engineering Academy, Faisalabad.
- Focused Program – Courses on Project and Contract Management is to be conducted at WAPDA Engineering Academy, Faisalabad.
- Training Need Assessment (TNA) is also being carried out by including the Stakeholders i.e. PEPCO / DISCOs / NTDC.

#### **4.2.10. General Manager (Hydel) Operation**

General Manager (Hydel) Operation is responsible for Operation & Maintenance (O&M) of WAPDA's existing 21 Nos. Hydel Power Stations having total installed capacity of 8420 MW.

Hydropower Generation is solely dependent upon the hydrological conditions and water releases allowed by Indus River System Authority (IRSA) in accordance with water indents of the Provinces. All efforts were made to achieve maximum possible utilization of the available water and to carry out preventive maintenance of the Plants such as to reduce forced outage period.

The progress of the activities and achievements during the FY 2019-20, are as under:

### Power Generation

These Power Stations produced 32,295 MKWh of Net Electrical Energy during the year 2019-20. The station-wise performance is detailed as under:

Sr.No.	Station	*NEO 2019-20 (GWh)	Max Monthly Gen (GWh)	Max Daily Gen (GWh)	Max Load (MW)	Commutative Gen (GWh) (upto 30.06.2020)
1	Tarbela	11857.689	2522.29	83.99	3506	510632
2	Ghazi Barotha	6482.213	767.6	26.99	1450	113420.6
3	Mangla	4589.327	664.53	21.96	915	236531
4	Warsak	1095.462	152.319	5.258	220	47210
5	Chashma	747.163	85.18	2.93	122	18538.52
6	DuberKhar	609.396	93.09	3.13	130	3812.71
7	AllaiKhar	469.474	87.90	2.93	121	3333.27
8	Jinnab	176.583	38.76	1.58	68.8	1946.26
9	Khan Khar	273.875	49.88	1.75	72	2029.95
10	Tarbela 4 <sup>th</sup> Ext.	5485.663	1029.915	33.901	1410	7993.845
11	Golen Gol	86.130	17.65	1.171	72	208.3
12	Small Hydel (10)	421.792	49.874	2.042	85	24097.729

\*Net Electrical output



### Major Maintenance Activities

- Rehabilitation work of stator winding of Unit No. 09 of Tarbela Power Station was carried out. Moreover, Up-gradation of protective relays of 500 / 220 KV Auto Transformer No. 1-3 of Tarbela Power Station was also carried out.
- Replacement / Up gradation of old low measuring system of Penstock of Units 1-5 of Ghazi Barotha from Power Station with latest version was carried out.
- After the effects of high intensity earthquake on 24.09.2019, removal of stones, boulders and wooden logs Tunnel No. 1 & 5 of Mangla Power Station was carried out.
- Major Overhauling of Unit No. 5 of Warsak Power Station was carried out.
- Major Overhauling of Unit No. 2 & 8 of Chashma Power Station is in progress.
- Installation of new speed increaser of Unit No. 1 of Jinnah Power Station has been completed.
- Unit No. 2 & 3 of Golen Gol Power Station was commissioned on 23.10.2019.
- Annual Maintenance of respective Units of all Hydel Power Stations carried out as per prescribed Check Sheet.

### Hydro Power Training Institute (HPTI) Mangla

Mangla Training Centre is the only source of providing Operation & Maintenance (O&M) Training for Hydro Power Engineers and Technical Staff. It was established in 1977 and functioning in a very old building, relying upon limited resources.

WAPDA has planned to upgrade the existing training centre and proposed establishment of Hydropower Training Institute (HPTI) at Mangla to be equipped with state-of-the-art equipment which will meet the following objectives for training of Engineers & Technical staff.

- To enhance Technical Capability of the Engineers regarding modern maintenance techniques, covering all aspects of Hydropower Plants equipment with due emphasis on the latest technology.
- To impart necessary training for introducing the latest computerized Maintenance Management systems at WAPDA Hydel Stations.
- Practical orientation of Engineers and other Technical Staff through Test Laboratories, Workshops etc.
- To get acquainted with the latest practices of Refurbishment and Rehabilitation of old Hydel Power Stations and its installed equipments.
- To update the present Operating and Monitoring Procedures.
- To study various technical problems of Hydel Units and their solutions through visits to different Hydropower Plants.

#### 4.2.11. General Manager (Coordination) Power

The Coordination Power Department is responsible for sharing data of Operational and under Construction Hydropower Projects between Power and Water Wings of WAPDA.

It undertakes special assignments and holding of Review Meetings under the direction of Member (Power).

Up-dation of the record of WAPDA Land Assets of Hydel formation for onward submission to Property Management Cell has been carried out by this department.

Supervision of the work of CE/DG (Purchase & Disposal) & XEN Air Conditioning (Plant) comes under GM (Coord.) Power.

Preparation of Monthly Progress Report of Power Wing (Compilation of O&M data of all Operational Hydel Power Stations).

To process the cases of Local Short Duration Trainings under Project Planning Management Institute (PPMI), Pakistan and Man Power Institute (PMI), Islamabad is another responsibility of GM (Coord.) Power.

#### 4.2.12. WAPDA Sports Board

WAPDA is one of the largest Organizations working for promotion of sports in the country. WAPDA Sports Board was established in 1960 and affiliated with Pakistan Olympic Association in 1984. It has made significant contributions towards promoting almost all National Sports. WAPDA has more than 2400 sports persons and 68 Teams which participate in all National level competitions out of which 35 (20 Men + 15 Women) Teams are National Champion and 18 (11 Men + 7 Women) Teams are Runner up.

13<sup>th</sup> South Asian Games were held from 1<sup>st</sup> - 10<sup>th</sup> December, 2019 in Kathmandu, Janakpur and Pokhara (Nepal). Pakistan bagged 32 x Gold, 41 x Silver & 59 x Bronze Medals. WAPDA Athletes shared 19 x Gold, 23 x Silver & 25 x Bronze medals. It is 1<sup>st</sup> time in history that WAPDA Athlete, Mr. Arshad Nadeem has qualified for Olympic Games 2020 held in Tokyo Japan by throwing 86.29 meter Javelin throw in south Asian Games, 2019 and also created new record for these games.

During 2019 WAPDA Athletes won 21 x Gold, 25 x Silver, & 25 x Bronze Medals at International level.

WAPDA Endowment Fund was established in 2010 with the prime objective to arrange financial support and provide sports facilities to the youngsters to improve the medal position of Pakistan in International competitions. Youngsters of 12 - 16 years are enrolled in 8 sports disciplines i.e. Athletics, Football, Hockey, Karate, Squash, Tennis, Weightlifting & Wrestling and retained up-to age of 18 they are provided coaching/ training facilities at door step and stipend of Rs.7000 PM.

234 youngsters so far have been enrolled in 4 in-takes whereas 57 youngsters have been enrolled in 5<sup>th</sup> in-take. WAPDA Endowment Fund for Sports youngsters won 8 x Gold, 7x Silver & 6 x Bronze Medals at International level and 115 x Gold, 51 x Silver & 27 x Bronze Medals at National level.



## 5. INDUS RIVER SYSTEM AUTHORITY

### 5.1. Introduction

The Indus River System Authority was established for regulating and monitoring the distribution of Water Resources of Indus River System amongst the four provinces in accordance with the Water Accord 1991 and to provide for matters connected therewith and ancillary thereto. The Authority consists of five members one each nominated by each province and the Federal Govt.

### 5.2. Duties and Performance of Authority

- lay down the basis for the regulation and distribution of surface waters amongst the Provinces according to the allocations and policies spelt out in the Water Accord;
- review and specify river and reservoir operation patterns and periodically review the system of such operation;
- coordinate and regulate the activities of the Water and Power Development Authority in exchange of data between the Provinces in connection with the gauging and recording of surface water flow;

Explanation:-Actual observation and compilation of the data shall be the responsibility of the respective Provinces, Water and Power Development Authority and other allied organizations, while the process shall be monitored by the Authority;

- Determine priorities with reference to sub-clause (c) of clause 14 of the Water Accord for river and reservoir operations for irrigation and hydropower requirements;
- Compile and review canal withdrawal indents as received from the Provinces on 5-daily or, as the case may be, on 10-daily basis and issue consolidated operational directives to Water and Power Development Authority for making such releases from reservoirs as the Authority may consider appropriate or consistent with the Water Accord;

Explanation: - The directives issued under this clause shall be binding upon Water and Power Development Authority and the Provinces, and shall be followed in letter and spirit;

- settle any question that may arise between two or more Provinces in respect of distribution of river and reservoir water; and
- Consider and make recommendations on the availability of water against the allocated shares of the Provinces within three months of receipt of fully substantiated water accounts for all new water projects for the assistance of the Executive Committee of the National Economic Council.
- Any question, in respect of implementation of Water Accord, shall be settled by the Authority by the votes of the majority of members and in case of an equality of votes the Chairman shall have a casting vote.

- A Provincial Government or the Water and Power Development Authority may, if aggrieved by any decision of the Authority, make a reference to the Council of Common Interests.

### 5.3. Meetings of IRSA Advisory Committee (IAC)

In pursuance of Chapter III, Section 9 of IRSA Act, IRSA Advisory Committee is required to meet at such time & place to consider such matters as the Authority may from time to time refer to it. It is, however, obligatory for the Advisory Committee to meet at the start of each cropping seasons of Kharif & Rabi without such a reference. During the year under report the IRSA Advisory Committee held its meetings on March 29<sup>th</sup>, 2018, October 1<sup>st</sup>, 2018, April 22<sup>nd</sup>, 2019 and October 1<sup>st</sup>, 2019.

### 5.4. Public Awareness on Water Situation

The situation on national water resource is projected on electronic and press media so that the end users get informed on this important issue. This helps farmers to plan their cropping appropriately especially during the water scarcity period.

In addition to aforementioned details, the following functions are being performed on a regular basis: -

- Daily review of water situation by IRSA
- 5/10-daily review of provincial indents
- Issuance of consolidated regulation directives to WAPDA & provinces
- 10-daily audit of Water Accounts report
- Coordinating and regulating the activities of the WAPDA in exchange of data between the provinces
- Periodic meetings of IRSA Advisory Committee to finalize the seasonal water availability
- Daily monitoring of water availability & provincial canal withdrawals

### 5.5. Progress on Goal & Targets

No special goal or target was fixed for IRSA except the equitable distribution of the available surface water, which was done efficiently and in an equitable manner.