Azadi Ka Amrit Mahotsav

WAPCOS

e-Sanchar

MONTHLY NEWSLETTER

JUNE 2025

WAPCOS PARTICIPATION IN GOVERNMENT OF INDIA SCHEMES

MISSION Use of State-of-the-art Technical Expertise, Innovativeness and Capacity Building

Swachh Bharat Mission
- Goa
- Assam
- Gujarat

Revamped Reforms Distribution Sector Scheme
- Kerala
- Haryana
- Chhattisgarh
- Uttar Pradesh
- Ladakh
- Arunachal Pradesh
- Nagaland

Smart City
- Punjab
- Assam
- Himachal Pradesh
- Mizoram
- Nagaland
- Rajasthan
- Tamil Nadu
- Maharashtra
- Uttar Pradesh

Atal Mission for Rejuvenation and Urban Transformation
- Goa
- Assam
- Haryana
- Karnataka
- Uttar Pradesh
- Bihar
- Odisha
- Kerala
- Gujarat
- Rajasthan
- Telangana
- Meghalaya
- Maharashtra
- Andhra Pradesh
- Madhya Pradesh

Pradhan Mantri Awas Yojana
- Tripura
- Andhra Pradesh
- Gujarat
- Rajasthan
- Jharkhand
- Uttarakhand
- Chhattisgarh
- Uttar Pradesh

Deen Dayal Upadhyaya Gram Jyoti Yojana
- Bihar
- Kerala
- Manipur
- Haryana
- Andaman & Nicobar
- Meghalaya
- Puducherry
- Chhattisgarh
- Maharashtra
- Assam
- Sikkim
- Tripura
- Mizoram
- New Delhi
- Karnataka
- Jharkhand
- Nagaland
- Tamil Nadu
- West Bengal
- Uttar Pradesh
- Himachal Pradesh
- Jammu & Kashmir
- Arunachal Pradesh

Pradhan Mantri Matsya Sampada Yojana (PMMSY)
- Gujarat

Integrated Power Development Scheme
- Goa
- Odisha
- Rajasthan
- Uttar Pradesh
- Jammu & Kashmir
- Sikkim
- Nagaland
- New Delhi
- Telangana
- Tamil Nadu
- Maharashtra
- Chhattisgarh
- Andhra Pradesh
- Himachal Pradesh

Pradhan Mantri Gram Sadak Yojana
- Bihar
- Uttarakhand
- Goa
- Assam
- Gujarat
- Rajasthan
- Jharkhand
- Madhya Pradesh

Pradhan Mantri Krishi Sinchayee Yojana
- Gujarat
- Setting up of PMU at Ministry of Jal Shakti, DoWR , RD & GR

Namami Gange, Integrated Ganga Conservation Mission
- Bihar
- West Bengal
- Uttarakhand
- Uttar Pradesh
- Madhya Pradesh

Jal Jeevan Mission
- Gujarat
- Haryana
- Jharkhand
- West Bengal
- Chhattisgarh
- Andhra Pradesh
- Arunachal Pradesh
- Assam
- Punjab
- Rajasthan
- Maharashtra
- Madhya Pradesh
- Himachal Pradesh
- Jammu & Kashmir
- National PMU at Ministry of Jal Shakti

Fisheries & Aquaculture Infrastructure Development Fund (FIDF)
- Gujarat

SAGARMALA Programme
- Gujarat
- Maharashtra

Pradhan Mantri Khanij Kshetra Kalyan Yojana (PMKKKY)
- Gujarat

MESSAGE

Mr. R.K. Agrawal,
CMD, WAPCOS & NPCC

Dear Readers,

I am pleased to share highlights in the latest edition of the WAPCOS newsletter, this month has seen several impactful contributions by WAPCOS toward a water-secure, climate-resilient, and globally connected future under the visionary leadership of Hon'ble Prime Minister Shri Narendra Modi.

Hon'ble Union Minister of Jal Shakti, Shri C.R. Paatil, led the grand finale of the Water Management Action Fortnight in Maharashtra, applauding community-led conservation. He also addressed the 7th Global Investor Conference in Surat.

On the infrastructure front, we advanced major projects. In Indore, we're delivering consultancy for an 11 km aerial ropeway under the PPP model. In Goa, we presented updates under AMRUT 2.0 and Smart Cities in a review chaired by Hon'ble Union Minister Shri Manohar Lal Khattar. We also held reviews with the Navodaya Vidyalaya Samiti to strengthen educational infrastructure.

Globally, WAPCOS continued to expand its footprint. We called on H.E. Mrs. Ildjima Badda Mallot, Ambassador of Chad, to review ongoing initiatives. In Mongolia, a delegation assessed progress at the Atal Bihari Vajpayee Centre of Excellence. We also participated in the 61st Anniversary Celebrations of Union of Tanganyika and Zanzibar, reflecting our strong partnerships in Africa.

Across the Pacific and Southeast Asia, key milestones included breaking ground on the Resilient Multifunctional Government Facility in the Marshall Islands and securing a World Bank-funded sanitation project in Ethiopia. In Cambodia, DPR and PMC work progressed for a large-scale water project. In Fiji, consultancy continues for jetty rehabilitation, along with two new projects under the road and tourism development programmes.

Our consultancy for Bhutan's Punatsangchhu-II Hydroelectric Project exemplifies our engineering resilience, with 510 MW commissioned and remaining units on track for 2025. Crowning this month's achievements, WAPCOS received the EEPC India Northern Regional Award for Engineering Excellence—recognition of our leadership in exporting high-impact engineering services.

I extend my sincere gratitude to our teams, partners, and stakeholders. Together, we are building a water-wise, sustainable, and globally engaged India.

Warm regards,
R. K. Agrawal
Chairman-cum-Managing Director
WAPCOS & NPCC

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MINISTRY UPDATE

Hon'ble Union Minister Shri C.R. Paatil attends Grand Finale of Water Management Action Fortnight 2025 in Maharashtra – May 2, 2025

On May 2, 2025, Hon'ble Union Minister of Jal Shakti, Shri C.R. Paatil, attended the grand finale of the Water Management Action Fortnight 2025 in Maharashtra. The two-week campaign, held from April 15 to 30, was spearheaded by the state's Water Resources Department with the aim of promoting water literacy and encouraging sustainable water management practices among citizens.

The fortnight featured a diverse range of activities- from educational workshops to community engagement drives-all designed to raise awareness about the importance of water conservation. These efforts underscored the need for responsible water usage across daily life, agriculture, and industry, stressing the shared responsibility of preserving this essential resource.

At the closing ceremony, Shri Paatil praised the enthusiasm and dedication of all participants, whom he proudly referred to as "Water Warriors." He reaffirmed the government's commitment to water security and sustainable practices, in line with Hon'ble Prime Minister Shri Narendra Modi's vision for a water-resilient India. Emphasizing the critical role of community participation, the minister called for continued collaboration to achieve long-term water management goals.

The Water Management Action Fortnight 2025 marked a meaningful step toward building a culture of water consciousness. It reinforced the collective effort needed to protect and manage India's water resources- not just for today, but for generations to come.

MINISTRY UPDATE

Hon'ble Minister Shri C.R. Paatil participates in 7th Global Investor Conference in Surat – May 3, 2025

On May 3, 2025, Hon'ble Union Minister of Jal Shakti, Shri C.R. Paatil, participated in the 7th edition of the Global Investor Conference (GIC) held at Avadh Utopia in Surat. Organized by Mehta Wealth, the conference brought together some of the country's most influential investors, policymakers, and financial experts to discuss India's rapidly evolving investment landscape and its path toward becoming a global economic leader.

In his address, Shri Paatil highlighted the vital role of entrepreneurship, innovation, and capital investment in shaping the future of a developed India. He noted that under the visionary leadership of Hon'ble Prime Minister Shri Narendra Modi, the nation is not only expanding as a major consumer economy but is also emerging as a leader in global investment. Shri Paatil emphasized that strategic policy reforms, digital transformation, and youth-led innovation are laying the foundation for India's long-term economic resilience and global competitiveness.

The conference featured deep insights into macroeconomic trends, wealth creation strategies, and emerging sectors such as green energy, digital infrastructure, and AI-driven industries. Shri Paatil praised the platform for facilitating meaningful dialogue between stakeholders and reaffirmed the government's commitment to building a robust, innovation-friendly investment climate.

He extended his congratulations to the youth and budding entrepreneurs who actively participated in the conference, applauding their enthusiasm and vision. Their involvement, he said, represents the spirit of a new India—bold, innovative, and ready to lead on the global stage.

MINISTRY UPDATE

India Strengthens Water Conservation Efforts through Collective Action and Policy Initiatives – May 22, 2025

Under the visionary leadership of Hon'ble Prime Minister Shri Narendra Modi, water conservation in India has evolved into a nationwide mass movement. This transformation is marked by unprecedented public awareness and participation, reflecting a collective commitment to safeguarding the nation's water resources.

On May 22, 2025, following discussions on the Ministry of Jal Shakti's budget grants in Parliament, Hon'ble Minister of Jal Shakti Shri C.R. Paatil convened a meeting with Members of Parliament from various political parties. The MPs presented constructive suggestions and emphasized the importance of collaborative efforts in water conservation. Shri Paatil highlighted that the meeting showcased a shared dedication to addressing water-related challenges through united action.

India's approach to water conservation encompasses several flagship initiatives:

- **Jal Jeevan Mission:** Aiming to provide tap water to every rural household, this mission has significantly improved access to clean drinking water across the country.
- **Atal Bhujal Yojana:** Focused on sustainable groundwater management, this scheme promotes community participation to ensure the long-term availability of groundwater resources.
- **Amrit Sarovar:** This initiative rejuvenates traditional water bodies, enhancing water storage capacity and supporting local ecosystems.

These programs are complemented by mass awareness campaigns like "Catch the Rain," which encourage citizens to harvest rainwater and adopt water-saving practices.

The collective efforts of government bodies, policymakers, and citizens underscore India's commitment to water conservation. By integrating policy initiatives with grassroots participation, the nation is making significant strides toward ensuring water security for future generations.

PROJECT UPDATE

Consultancy services for Preparation of Feasibility Study, RFP Document and Concessionaire agreement, Bid process Management and Supervision of Development of Aerial Ropeway Transit System in Indore City on PPP Mode Indore, Madhya Pradesh

Client: Indore Development Authority (IDA)

Location: Indore, Madhya Pradesh.

Scope of Work:

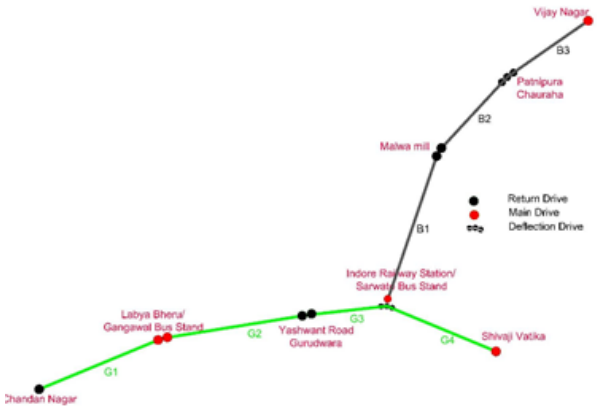
- Preparation of Concept Report.
- Feasibility Study of the Project.
- Tender Management.
  - Preparation & Submission of RFQ, RFP & Concession Agreement Document.
  - Management of the Bidding process & selection of the successful bidder.
- Supervision of Works.
  - Design checking of Ropeway.
  - Quality checks during Execution phase.
  - System testing for commissioning of the system.

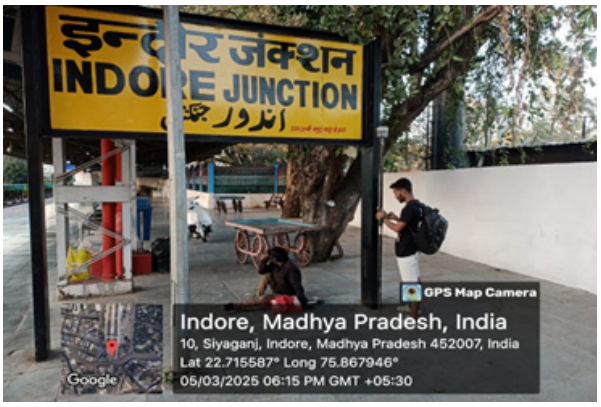
Main Components:

- This project has 2 Ropeway lines, 9 stations with the total alignment length of 11.02 Kms.
- Design Capacity – 2500 PPHPD \
  No. of Towers – 50.
- Total Project Cost – ₹737 Cr.
- Technology proposed M-G-D System.
- Standard used – CEN/ BIS Standard

Challenges Faced:

Land finalization of the Ropeway stations, as the available vacant Govt. land is very limited.





Present Status:

Draft feasibility report submitted. Final feasibility report to be submitted after receipt of the comments from client.

PROJECT UPDATE

Detailed Project Report (DPR) and Project Management (PMC) Consultancy Services for the Stung Sva Hab Water Resources Development Project in Kampong Speu and Koh Kong Province, Cambodia

Client: Ministry of Water Resources and Meteorology (MOWRAM), Royal Government of Cambodia

Location: Kampong Speu and Koh Kong Province

Scope of Work:

The brief scope of work includes Preparation of Detailed Project Report, Assistance in Tender Engineering, Project Management, Construction Supervision and Monitoring during Defects Liability Period.

Main Components:

- Concrete Face Rockfill Dam with gross storage capacity of 150 MCM and appurtenant works
- Incidental Hydropower Generation of approx. 550 kW from the irrigation releases

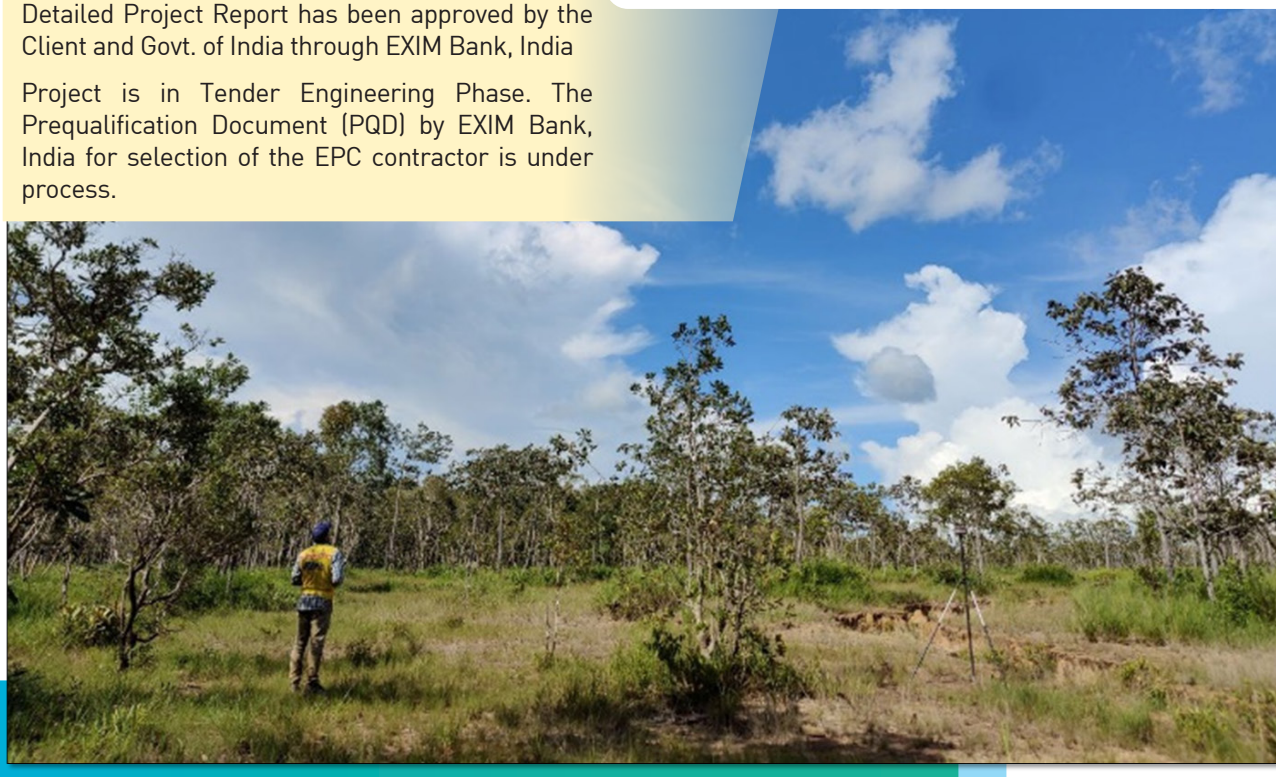
Challenges Faced:

- Making the trace cut to the project site motorable for mobilization of geotechnical investigation equipment
- Non-accessibility of the project site due to rainfall and floods in the Project Area during rainy season

Present Status:

Detailed Project Report has been approved by the Client and Govt. of India through EXIM Bank, India

Project is in Tender Engineering Phase. The Prequalification Document (PQD) by EXIM Bank, India for selection of the EPC contractor is under process.



PROJECT UPDATE

Punatsangchhu-II Hydroelectric Project (1020 MW), Bhutan

Client: Punatsangchhu-II Hydroelectric Authority (PHPA-II), Bjimthangkha, Bhutan

Location: Bjimthangkha, Wangdue Phodrang, Bhutan

Scope of Work:

WAPCOS Limited is Engineering & Design Consultant to PHPA-II. The expertise of premier organizations of Government of India are made available to the Project through WAPCOS.

WAPCOS Ltd. has been entrusted with the Design Consultancy Services for Main Civil Works, Hydro-Mechanical works, Electro-Mechanical works, and Infrastructure works for PHEP-II. These includes Topographical Surveys, Planning, Preparation and submission of detailed drawings for Construction of all Civil (Structural and Bhutanese Architectural) works of Buildings and facilities, Revision in construction drawings as per vendor and site requirements for Electro-Mechanical works and Preparation of Tender Documents, BOQ and Cost Estimates, Site Inspections for Electro-Mechanical and Hydro-Mechanical works; Hydro-Meteorological observations at Rurichhu, Dogerthang and Pinsa on daily basis; Submission of site inputs.Organizing meetings of CWC, CEA, Technical Group and other works assigned from time to time.

Apart from above responsibilities, the following important activities have been successfully carried out by WAPCOS for PHEP-II:

- Planning, Design and Drawings for Conservation of Golden Mahseer at Harachhu and White Bellied Heron facility at Chachey
- Installation and Data monitoring of 07 No's of seismological stations at Pinsa, Nobding, Ghaselo, Kabesa, Thimpu, Chukha & Gelephu. (Start functioning w.e.f. May, 2018 and handed over to PHPA-II during 2020-21)
- Hydraulic Model Studies of Intake, Desilting basin, spillway, reservoir sedimentation through CWPRS, Pune.
- Design of Self Compacting Concrete Mix (M-5 Grade) and Field Trials for filling of 47m high Cavity above DSSG with the help of IIT Delhi & IIT Madras.

Contd..

- Tender Engineering to devise, formulate and implement suitable methodology including Technical Specifications, details of tools, plants, equipment's and machinery for Consolidation Grouting of loose fallen muck between RCC retaining walls inside DSSG & Installation of 100 T Passive Cable Anchors.
- Physical model studies of Powerhouse complex through CWPRS, Pune.
- 3-D Numerical Modelling of Powerhouse Complex through NIRM.
- Monitoring Reservoir and Water Conductor Initial Filling.
- Participation in Testing and Commissioning of Generation Units.

Main Components:

The key features of the Project are as follows:

- One No. Diversion Tunnel of 12 m diameter, 877.46 m length & 1118 cumec design discharge.
- Concrete Gravity Dam of 91 m height & 224.90 m length at top.
- Auxiliary Spillway (Chute type) with 1 No. gate.
- Sluice Spillway with 7 Nos. Radial Gate, each of 8 m x 13.20 m.
- Four Nos. Intake Tunnels each of 6.4 m diameter
- Four Nos. underground Desilting Chambers each of 420 m (L) x 19 m (W) x 24.74 m (H).
- Silt Flushing Tunnels (D-shaped) varying from size 3.6 m (W) x 2.85 m (H) to 5.6 m (W) x 4.675 m (H).
- One No. Highway Tunnel of 11 m diameter, 1522 m length.
- One No. Head Race Tunnel (Circular) of 11.0 m finished diameter & 8527.27 m length up to Surge Shaft.
- One No. Surge Shaft 31 m finished diameter 137 m high (open to sky).
- One No. Butterfly Valve Chamber of size 124.55 m (L) x 12 m (W) x 22.5 m (H).
- One No. Ferrule erection Chamber of size 120 m (L) x 12 m (W) x 12 m (H).
- Three Nos. Steel Lined Main Pressure Shafts (Circular) of 5.5 m diameter and 1453.342 m length.
- Six Nos. Unit Pressure Shafts (Circular) of 3.86 m diameter.
- One No. Power House Cavern to house six units of size 240.7 m (L) x 23.5 m (W) x 51 m (H).
- One No. Transformer Hall Cavern of size 215.7 m (L) x 14 m (W) x 26.5 m (H).
- One No. Downstream Surge chamber of size 314 m (L) x 18 m (W) x 58.5/48.5 m (H).
- Two Nos. Unit Tail Race Tunnels (Circular) of 7.8 m finished diameter each & 503 m total length One No. Main Tail Race Tunnel (Circular) of 11.0 m finished diameter & 2.85 km length.
- Three Nos. Bus Duct Tunnel (D-Shaped) of size 11 m (W) x varying (H) x 40 m (L).
- One No. Cable Tunnel (D-shaped) of size 7.0 m (W) x 7.5 m (H) x 275.26 m (L).
- Six Nos Draft Tube Tunnels.
- Main Access Tunnel to Power House and connected Adits and Tunnels.
- Three Nos Pressure Shafts, six Nos. Draft Tubes and two Nos. TRT Outfall Gates

Challenges Faced:

Following are the key challenges faced by the Project. WAPCOS played key role to mitigate these key challenges.

1. Encountered shear zone in Dam foundation.
2. Collapse of crown of DSSG in March 2016.
3. Phelraychu Flash Flood in August 2019.
4. Covid-19 from March 2020.
5. Seepage in Machine Hall & SFT GoG after charging of Water Conductor System.

Present Status:

Four Generation Units of 170 MW have been successfully commissioned (Units-I & II on 17th December 2024, Unit-III on 18th March, 2025 and Unit-IV on 30th May, 2025. The balance two Units are expected to be commissioned in 3rd quarter of 2025.

PROJECT UPDATE

Detail Design for Rehabilitation/ Repair of Muaiwalu 1 and Muaiwalu 2 Jetties, Fiji

Client: Fiji Ports Corporation Limited (FPCL), Fiji

Location: Suva, Fiji Islands

Scope of Work:

The brief scope of work includes carrying out detailed design and preparation of tender document for the proposed suitable repair options identified in Phase 1 Condition Assessment Study for both the Muaiwalu 1 Jetty and Muaiwalu 2 Jetties.

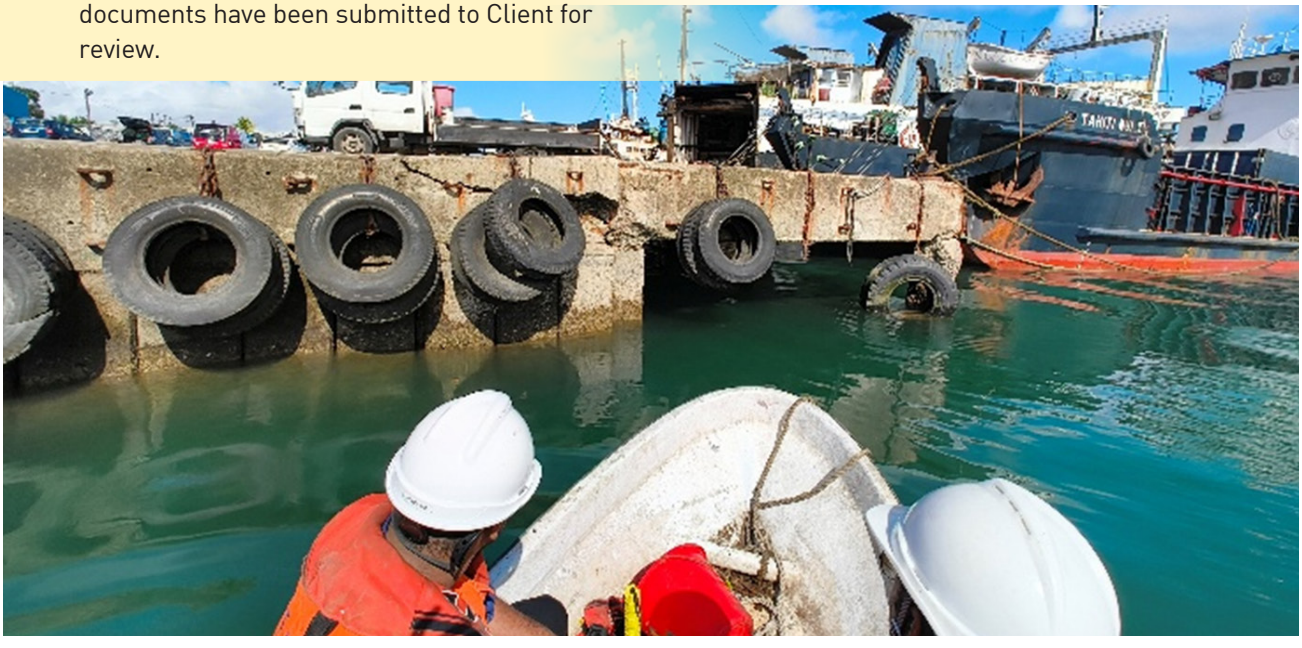
- Detailed design drawings and design report.
- Technical specification, BoQ & Detailed cost estimation
- Tender Documents, Facilitation of external approvals
- Evaluation of tenders and contractor negotiations.

Challenges Faced:

- Non-availability of As-built drawings of existing Jetties.
- Proposing suitable repair options which will not hamper the jetty operations.
- Non-availability of repair materials in local market.

Present Status:

Final Design Report and Draft Tender documents have been submitted to Client for review.



THE MONTH AT A GLANCE

CMD WAPCOS meets Ambassador of Chad, Highlights Global Development Initiatives – May 8, 2025

Mr. R. K. Agrawal, Chairman-cum-Managing Director of WAPCOS, called on H.E. Mrs. Ildjima Badda Mallot, Ambassador Extraordinary and Plenipotentiary of the Republic of Chad to India. During the meeting, held in New Delhi, Mr. Agrawal highlighted WAPCOS's global role in the development of Water, Power, and Infrastructure projects. The Honourable Ambassador appreciated WAPCOS's contribution to the progress of Water and Power projects in Chad.

Also present were Mr. Ali Saleh Bichara, Economic Counsellor, Embassy of the Republic of Chad; Mr. Sanjay Singal, Senior Executive Director; Sh. Vimal Chander, Chief Manager (PR); Sh. Sumir Chawla, Head (Corporate Communications) from WAPCOS. The discussion reinforced ongoing collaboration and future engagement in development partnerships.

THE MONTH AT A GLANCE

High-Level Delegation visits Atal Bihari Vajpayee Centre of Excellence in Mongolia – May 13, 2025

A high-level delegation comprising H.E. the Ambassador of India to Mongolia, senior officials from the Ministry of External Affairs, EXIM Bank of India, and the Ministry of Education and Science of Mongolia visited the site of the Atal Bihari Vajpayee Centre of Excellence in IT, Communication & Outsourcing in Ulaanbaatar. The visit aimed to review the progress of the prestigious bilateral initiative.

The WAPCOS team, led by Shri S. K. Srivastava, Senior Executive Director, presented an overview of the project's implementation status and upcoming milestones. The delegation acknowledged the centre's potential in strengthening India-Mongolia cooperation in capacity building and digital empowerment, reaffirming WAPCOS vital role in advancing India's development partnership in the region.

THE MONTH AT A GLANCE

WAPCOS participates in State Review Meeting on Urban and Power Sector in Goa – May 16, 2025

WAPCOS was honoured to participate in the State Review Meeting on the Urban and Power Sector held in Goa under the chairmanship of Shri Manohar Lal Khattar, Hon'ble Union Minister for Power, Housing & Urban Affairs. The meeting was also attended by Dr. Pramod Sawant, Hon'ble Chief Minister of Goa; Shri Shripad Naik, Hon'ble Union MoS for Power and NRE; Shri Vishwajit Rane, Hon'ble Minister for Urban Development, Goa; along with senior officials from the Central and State Governments.

Shri Rajwansh Singh, Project Manager, WAPCOS, in coordination with officials from GSUDA-Goa, presented key updates on urban sector initiatives. As the PDMC for AMRUT 2.0 and Project Executing Agency for SBM 2.0 in Goa, WAPCOS showcased progress under flagship missions including PMAY (Urban), Smart Cities Mission, and DAY-NULM. The Hon'ble Union Minister commended the accomplishments and emphasized the importance of achieving 100% saturation under each scheme to realize the vision of a Viksit Bharat.

THE MONTH AT A GLANCE

WAPCOS joins 61st Union Day Celebration of Tanganyika and Zanzibar – May 16, 2025

WAPCOS was honoured to participate in the 61st Anniversary Celebration of the Union of Tanganyika and Zanzibar, held on 16th May 2025 at ITC Maurya, New Delhi. The event commemorated the historic formation of the United Republic of Tanzania and celebrated decades of unity and partnership.

The celebration was hosted by H.E. Anisa Kapufi Mbega, High Commissioner of the United Republic of Tanzania to India. Ms. K. Nandini Singla, Director General, Indian Council for Cultural Relations (ICCR), Ministry of External Affairs, Government of India, graced the occasion as the Chief Guest, highlighting the enduring diplomatic and developmental ties between the two nations.

Representing WAPCOS were Shri R. K. Agrawal, Chairman-cum-Managing Director, and Shri S. K. Srivastava, Senior Executive Director. WAPCOS shares a long-standing development partnership with Tanzania, having successfully completed 15 projects and currently executing 4 key assignments in infrastructure and power—underscoring its commitment to sustainable development and South-South cooperation.

THE MONTH AT A GLANCE

WAPCOS supports Construction of Resilient Government Facility in Marshall Islands – May 20, 2025

WAPCOS is providing end-to-end design and project management consultancy services for the construction of the "Resilient Multifunctional Government Facility (RMGF)" in Majuro, Republic of the Marshall Islands. Funded by the World Bank, the project is a key initiative aimed at enhancing the country's climate resilience and institutional capacity. The RMGF is being designed as a robust, multifunctional structure capable of withstanding extreme weather events common to the region.

The groundbreaking ceremony for the project was held on 20th May 2025 at the Majuro site. The event was attended by the Honourable Minister of Public Works, the Secretary (Public Works), and senior officials from the Ministry of Finance and the World Bank—underscoring the strategic importance of the facility in strengthening national infrastructure and governance.

This project highlights WAPCOS growing leadership in delivering sustainable, climate-resilient infrastructure in small island developing states and other vulnerable geographies worldwide.

THE MONTH AT A GLANCE

WAPCOS secures World Bank-Funded Sanitation Project in Ethiopia – May 26, 2025

WAPCOS has been awarded a significant new project in Ethiopia for providing comprehensive Consultancy Services covering Design Review, Construction Supervision, Contract Management, Operation & Maintenance (O&M), and Capacity Building for Faecal Sludge Treatment Plants (FSTPs) in Jigjiga and Degahbour towns, situated in the Somali Region. The contract agreement was formally signed with the Somali Regional State Water Bureau and is financed by the World Bank through the Ministry of Water & Energy, Government of Ethiopia.

The project aims to strengthen urban sanitation infrastructure and enhance local capacities in managing faecal sludge in an environmentally sustainable manner. During the signing, WAPCOS held productive discussions with officials from the Ministry and the Client, focused on ensuring smooth coordination and timely execution of the project.

This initiative underscores WAPCOS' growing international footprint and continued commitment to sustainable development, environmental protection, and global cooperation in the water and sanitation sector, particularly in underserved regions.

THE MONTH AT A GLANCE

WAPCOS strengthens Infrastructure Footprint in Fiji Through Strategic Road and Tourism Projects – May 27, 2025

WAPCOS has secured two pivotal infrastructure consultancy assignments in Fiji, marking a significant step in its expanding global presence across the transport and tourism sectors. The first assignment, commissioned by the Government of Fiji, involves the Detailed Investigation and Design for the Rewa Vutia Road and Bridge Project. This project is being implemented in collaboration with the Fiji Roads Authority.

The second assignment is part of the World Bank-funded Fiji Tourism Development Program in Vanua Levu, where WAPCOS has been appointed as the Design and Supervision Consultant. The focus of this project is the Cross Island Road Resilient Tourism Infrastructure Works, aimed at enhancing connectivity and climate resilience to boost regional tourism.

WAPCOS officials, including Shri Radheshyam Debnath, Country Manager, and Shri Adarsh Kumar S., Additional Chief Engineer, have been actively engaged in discussions with stakeholders. These projects reflect WAPCOS ongoing commitment to sustainable infrastructure and inclusive development in the Pacific region.

THE MONTH AT A GLANCE

CMD WAPCOS & NPCC meets Commissioner of Navodaya Vidyalaya Samiti – May 27, 2025

Mr. R. K. Agrawal, CMD of WAPCOS and NPCC, met Mr. Rajesh Lakhani, IAS, Commissioner of Navodaya Vidyalaya Samiti (NVS), on 27th May 2025. The meeting was held to review the ongoing construction projects being implemented by WAPCOS and NPCC under the NVS framework.

Discussions centered around the progress of infrastructure works across various schools and key areas of collaboration. Both sides deliberated on project timelines, quality standards, and future opportunities for engagement.

The interaction also served to underscore the technical capabilities and extensive project management experience of WAPCOS and NPCC, both within India and on the international stage. The meeting reaffirmed the shared commitment to enhancing educational infrastructure and ensuring timely delivery of projects with high standards of excellence.

THE MONTH AT A GLANCE

WAPCOS Honoured with EEPC India Northern Regional Award for Engineering Excellence – May 28, 2025

WAPCOS was conferred with the prestigious EEPC India Northern Regional Award 2025 for Engineering Excellence in the category of Export of Engineering Services-Large Enterprise. The accolade, instituted by EEPC India-an Engineering Promotion Council under the Ministry of Commerce & Industry, Government of India-recognizes outstanding contributions in the field of engineering exports.

Shri Amitabh Tripathi, Director (Commercial & HRD), and Shri C. P. Arora, General Manager (Corporate Planning), received the award on behalf of WAPCOS. The ceremony was held in New Delhi on 28th May 2025 and witnessed the presence of distinguished dignitaries.

The award was presented by Smt. Rekha Gupta, Hon'ble Chief Minister of Delhi, in the esteemed presence of Dr. Philipp Ackermann, German Ambassador to India and Bhutan. This recognition underscores WAPCOS' continued commitment to engineering excellence, global outreach, and contribution to India's export growth story.

THE MONTH AT A GLANCE

WAPCOS strengthens Global Footprint with Kabuyanda Dam and Irrigation Project in Uganda – May 30, 2025

WAPCOS is providing Project Management Consultancy (PMC) services for the Kabuyanda Dam and Irrigation Scheme in Uganda, a transformative initiative covering a total command area of 3,300 hectares. Funded by the World Bank, the project stands as one of Uganda's largest and most advanced pressurized irrigation systems, aimed at enhancing agricultural productivity and promoting sustainable water resource management.

As part of its ongoing commitment to engineering excellence and global development, WAPCOS is ensuring rigorous supervision and implementation of the project. Mr. Akash Deep, Resident Deputy Chief Engineer, and Mr. Tara Rai, Expert, WAPCOS, along with the site expert team, participated in a comprehensive site meeting.

The visit included a detailed review of construction activities, fruitful discussions with the client and contractors, and an inspection to reaffirm adherence to quality and progress benchmarks. This project reinforces WAPCOS' expanding international presence and its dedication to delivering high-impact infrastructure solutions across borders.

TECHNOLOGY & INNOVATIONS

High Voltage Direct Current (HVDC) Technology

Electricity is a type of energy that consists of the movement of electrons between two points when there is a potential difference between them, making it possible to generate what is known as an electric current.

And, Electricity transmission refers to the process of moving bulk electricity from power plants to substations, where it's then distributed to consumers. This involves a network of high-voltage transmission lines, substations, and other equipment that facilitate the long-distance transport of electricity. The efficiency of this process is crucial, as energy loss during transmission can be significant.

Thus, Electricity is transported over long distances at high voltages, which minimizes the loss of electricity.

High-voltage electric power transmission systems primarily use two main types:

- High-Voltage Alternating Current (HVAC)
- High-Voltage Direct Current (HVDC).

HVAC uses alternating current (AC). HVAC transmission is the more common method, using three-phase AC lines to transmit power over long distances.

HVDC uses direct current (DC). HVDC transmission is often favoured for specific applications like long-distance transmission, bulk power transmission, and undersea/ underground transmission due to its lower transmission losses and reduced equipment needs, although it has higher initial costs for converter stations.

HVDC (High Voltage Direct Current) technology offers a more efficient and reliable alternative to alternating current (AC) transmission in certain scenarios. It's particularly well-suited for connecting remote generation sources, integrating renewables, and interconnecting AC grids.

Key Components:

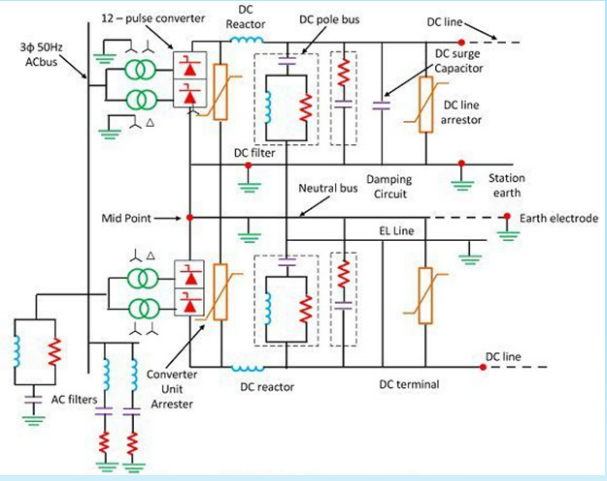
Converter Stations: These are the heart of the HVDC system, responsible for AC/DC conversion. They include:

- **Converters:** Devices that convert AC to DC (rectifiers) and DC back to AC (inverters).
- **Converter Transformers:** Step up or down the AC voltage to match the converter's requirements.
- **Smoothing Reactors:** Reduce harmonics and improve the stability of the DC current.
- **Harmonic Filters:** Reduce harmonics generated by the converters, ensuring they don't interfere with the AC system.
- **Reactive Power Compensation:** Provide the reactive power needed by the converters to maintain voltage stability.

DC Transmission Lines: These lines carry the DC power from the sending end converter station to the receiving end converter station. They can be overhead lines or underground cables.

Supporting Equipment: Various equipment is used to enhance the performance and reliability of the system, including:

- **Protection Equipment:** Protects the system from faults and ensures smooth operation.
- **Control and Monitoring Systems:** Enable power flow regulation and communication between converter stations.



- **AC Switchgear:** Provides electrical safety and control for the AC side of the converter station.
- **Electrode(s):** Conductors that connect the system

to the earth, allowing for the return path of the DC current in a monopolar system.

- **Control Systems:** These systems manage the converters, ensuring smooth and efficient power transfer and grid integration.

HVDC (High Voltage Direct Current) transmission systems are classified by their link configuration and converter technology. The primary Link types are:

- **Monopolar:** A monopolar system uses only one conductor and relies on the earth or a metallic return path for current return. Monopolar systems are often used for submarine cable transmission or in situations where earth return is feasible.
- **Bipolar:** A bipolar HVDC system employs two conductors: one carrying positive current and the other negative current, with both grounded at each end. This configuration is commonly used for long-distance HVDC transmission.
- **Homopolar:** It uses two conductors with the same polarity, typically negative, with a ground return path

These links are with variations based on converter technology like Line Commutated Converter (LCC) or Voltage Source Converter (VSC)

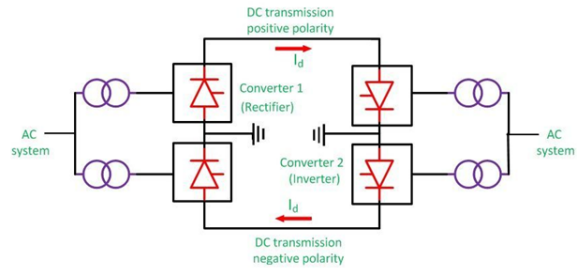
Central Asia-South Asia (CASA-1000)

WAPCOS is executing its first prestigious HVDC Transmission Line of (± 500 KV) in Afghanistan as Owner's Engineer.

The Central Asia-South Asia (CASA-1000) project is a 1.3GW transmission project that transmits hydropower from Tajikistan and Kyrgyzstan to Afghanistan and Pakistan. It uses a bipolar HVDC system to transmit electricity at ±500 kV. It is a bipolar system, meaning it uses two conductors, one positive and one negative, with respect to the earthed tower structure. This project facilitates the transmission of hydropower from Tajikistan and Kyrgyzstan to Afghanistan and Pakistan.

Bipolar systems are preferred here for long-distance transmission as they provide a more stable and efficient power transfer compared to monopolar systems, especially when dealing with large power transmission needs.

Also, CASA-1000 involves the idea of reverse power flow, also called "reverse power trade," is to allow electricity to flow in the opposite direction, from South Asia (Pakistan and potentially Afghanistan) to Central Asia, when needed. Implementing reverse power flow requires technical adjustments to the CASA-1000 transmission system, including establishing rules and procedures for managing the flow of electricity in both directions.



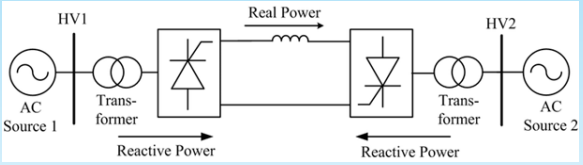
Types of HVDC Converters:

Line-Commutated Converter (LCC): This technology has been used for decades in HVDC systems and is suitable for bulk power transmission. It's also known as a current-source converter (CSC) because the thyristors are current-controlled.

Voltage Source Converter (VSC): VSC-HVDC technology uses switching devices (e.g., IGBTs) and is suitable for various applications, including interconnecting AC grids and integrating renewables.

Hybrid HVDC: Combines the advantages of LCC and VSC converters in a single system.

The CASA-1000 project uses High Voltage Direct Current (HVDC) technology for its converter stations. Specifically, the project employs Line-Commutated Converters (LCC) using thyristors in its HVDC converter stations in Tajikistan and Pakistan. These converters are designed to transmit 1,300 megawatts of electricity at 500 kilovolts.



Key Features and Applications:

- **High Efficiency:**

  HVDC reduces transmission losses compared

to AC transmission, especially over long distances.

- **Asynchronous Interconnection:**

  HVDC allows independent AC grids to exchange power without synchronizing, facilitating power transfers between different regions.

- **Grid Stability:**

  HVDC can enhance the stability of AC grids by limiting fault currents and providing faster control over transmitted power.

- **Back-to-back HVDC:**

  This configuration is used to convert and transmit power between two AC systems, allowing for power transfers without the need for direct interconnection.

- **Multi-terminal HVDC:**

  This configuration allows for multiple points of power injection or extraction in a single HVDC system.

- **Renewable Integration:**

  HVDC is used to integrate renewable energy sources like wind farms into the power grid, particularly for offshore wind power.

- **Submarine Cable Transmission:**

  HVDC is often used for underwater power cables, especially for offshore wind farms.

Limitations of HVDC:

- Higher initial capital costs compared to AC transmission.
- Higher cost of land for converter stations.
- Complex to maintain and operate

SAURABH KUMAR
Deputy Chief Engineer (Electrical)
Power Division, Gurugram

STAR PRESENTERS

As a token of appreciation, the details of Star presenters of PAPM - 15 held on 28.05.2025 who made presentations and shared their experiences and expertise are as follows:

PRESENTERS OF PAPM 14	
 **Rohit Kumar Borah,** Junior Level Expert, Guwahati	Jal Jeevan Mission, Assam
 **Manish Kumar,** Deputy Chief Engineer	Transmission Lines and Substations, Nepal funded by MCC, USA

EMPLOYEES OF THE MONTH

WAPCOS recognizes employee's efforts for exemplary contribution in achievement of Turnover, New Business and Payment Realization for the Month of May, 2025

CONSULTANCY SEGMENT

Turnover

Ms. Aditi Gupta,
Assistant Manager (Statistics),
T&D Unit Power Division

New Business

Shri Prashant Shukla,
Engineer (Electrical),
SSP Ahmedabad/
Environment Division

Payment Realization

Shri Himanshu Bhutiyani,
Deputy Chief Engineer,
T&D Unit Power Division

CONSTRUCTION SEGMENT

Turnover

Shri Prateek Tyagi,
JLE (Civil),
CMU-III

New Business

Shri Prakhar Sharma,
JE (Civil),
CMU-III

WAPCOS OPERATIONS ABROAD: FOOTPRINTS IN OVER 75 COUNTRIES

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