

REQUEST FOR PROPOSALS

Cambodia Australia Partnership for Resilient Economic Development (CAPRED) Program	
RFP Number	RFP25-043
Project Name	Assessment and recommendations of suitable forecast system for hydro energy for Cambodia
Domain Name	Infrastructure
Initial Application Closing Date	5 pm (Cambodia Time), 30 April 2025
Assignment Duration	June – December 2025

1. Background

1.1. About CAPRED

The CAPRED Facility is Australia's flagship bilateral economic development program in Cambodia, focusing on economic recovery and resilience over five years, with a possible three-year extension. The Facility supports Cambodia in implementing a range of important economic reforms to support the country's economic transition. These interventions and reforms aim to encourage more productive and inclusive public and private investment, promoting a resilient, inclusive, and sustainable economy (RISE).

CAPRED interventions fall under three technical components including: Agriculture and Agro-processing; Trade, Investment and Enterprise Development and Infrastructure Development; and three Cross-Cutting components: Gender Equality, Disability and Social Inclusion (GEDSI); Climate Resilient initiatives, and policy support.

1.2. About the project

Australia, through CAPRED, is supporting Cambodia's green energy transition. Hydropower accounts for at least 50% of Cambodia's domestic energy generation, making accurate forecasts of hydropower output crucial for efficient grid management and cost optimisation. As part of this initiative, CAPRED is working closely with the Cambodian government, particularly the Ministry of Mines and Energy (MME)—the policy maker and leader of the country's power development plan—and Electricity du Cambodge (EDC), the state energy operator, to identify and implement a suitable weather forecasting system for predicting hydropower outputs.

The current forecasting system faces significant challenges in predicting the generation capacity of small-to medium-scale hydropower dams, particularly during the transition between dry and wet seasons. To address these issues, a three-phase approach will be implemented to identify and establish an effective hydropower forecasting system:

1. Assessment of existing systems and recommendations for suitable forecasting approaches or systems.
2. Piloting a preferred approach through iterative testing.
3. Capacity building and implementation of the best-performing system.

The Ministry of Mines and Energy (MME) and Electricity du Cambodge (EDC) are CAPRED's key counterparts for the first and second phases, while the third phase will be led by EDC.



2. Purpose, key tasks and activities

CAPRED seeks to engage qualified experts, consulting firms, or consortia to assess existing hydropower forecasting practices and recommend a suitable forecasting system for Cambodia. The selected applicant will be expected to undertake the following key tasks:

- Assess at least two hydropower forecasting systems in neighbouring or similar countries with comparable energy systems. This evaluation should analyse system structures, strengths, and weaknesses, and identify best practices, technologies, and methodologies that can be adapted for Cambodia.
- Conduct a comprehensive review of the current hydro energy forecast system in Cambodia to identify strengths, weaknesses, and gaps.
- Undertake an assessment of the data and information available to EDC for the purpose of forecasting hydro energy in the country and advise on any necessary improvements that could be made to improve hydro generation forecasting capability.
- Analyse hydropower generation and operations in Cambodia by:
 - Identifying locations and geographical characteristics of hydropower dams that influence forecasting, including but not limited to:
 - Catchment areas
 - Upstream and downstream flows
 - Elevation differences
 - Storage and generation capacity
 - Ramp-up rates
 - Historical and projected seasonal effects
 - Evaluating the availability, quality, and reliability of existing data from generation sites, and identifying additional data requirements for accurate forecasting, such as:
 - Hydrological data
 - Meteorological data
 - Hydroelectric plant data
 - Additional factors (e.g., seasonal variations, climate change impacts, etc.)
 - Assessing the availability, quality, and scalability of infrastructure enabling forecasting, including:
 - Weather stations (availability, management authority, and O&M)
 - Data exchange platforms
 - Data interpretation capability
- Based on the above assessments, recommend a suitable approach for hydro generation forecasting which should include:
 - Forecasting models / tools that could be used
 - How gaps in data / information available to EDC could be addressed
 - Any other general improvements that would be necessary
- Develop an implementation strategy or a roadmap
 - Advise on necessary adjustments to the existing energy management system that could ensure compatibility with the recommended forecast system.
 - Identification of requirements for integrating the new system with current infrastructure.



- Provide a detailed cost estimate for the development, implementation, and maintenance of the recommended forecast system.
- Recommend a pilot procedure to test and validate the proposed forecast system.
- Outline key performance indicators (KPIs) to evaluate the system's effectiveness during the pilot phase

3. Qualifications, knowledge, and experience required

Applications are open to all Cambodia/ international-based expert(s)/companies that meet the following criteria.

Technical qualifications:

- Hydropower Systems Knowledge: In-depth understanding of hydropower generation, including dam operations, hydrological cycles, and energy output forecasting.
- Weather and Hydrological Forecasting: Proven experience in weather and hydrological modeling, data analysis, and forecasting methodologies.
- Energy Systems Integration: Familiarity with integrating forecasting systems into existing energy management and grid operations.
- Data Management and Analytics: Expertise in handling large datasets, including hydrological, meteorological, and hydroelectric plant data, and using advanced analytics tools.
- Forecasting System Development: Demonstrated experience in designing, implementing, or improving forecasting systems for hydropower or renewable energy.

Other competencies and Compliance:

- Demonstrating integrity and high ethical standards.
- Displaying sensitivity and adaptability to cultural, gender, religious, racial, national, and age differences.
- Treating all people fairly without favouritism.
- Fulfilling obligations to GEDSI sensitivity and maintaining a zero-tolerance policy for sexual harassment.
- Strictly complies with the DFAT and Cowater policies, guidelines, and regulation, including [Child Protection Code of Conduct and policy](#), Code of Conducts, the PSEAH policies, Fraud and Corruption Control Policies (e.g., requiring all staff and engaged partners to report suspected non compliant behaviour), and considerations of the Value for Money for the works
- Complying with Cambodia and DFAT's policies, including climate/environmental protection safeguards policies.
- Teams with an appropriate gender balance are strongly encouraged to apply.

4. Evaluation criteria

CAPRED will use an objective and reliable process to evaluate each application. The applications will be evaluated on the following criteria (in no particular order):

- Compliance with this Request for Proposal.
- Understanding and ability to meet the **qualifications, knowledge, and experience required**



- The applicant's business contributions to GEDSI (gender equality, disability, and social inclusion), sustainability, and/or the environment.

5. How to Apply

The proposals including the Technical and Financial Response Forms must be submitted no later than **5pm (Phnom Penh time), 30 April 2025** by email to procurement@capred.org with "Assessment and recommendations of suitable forecast system" in the subject line. Any proposals submitted after this time and date will not be considered.

The program will host a Q&A session on **3 April 2025**. Interested bidders can register to join the briefing via procurement@capred.org by **2 April 2025**.

CAPRED is available to answer questions or provide more details on the scope of work. Please email procurement@capred.org with "Assessment and recommendations of suitable forecast system - Enquiry" in the subject line.

Attachments:

- Technical Response Form
- Financial Response Form

Cowater International is an equal opportunity employer, basing employment on merit and qualifications as they relate to professional experience and position expectations. Cowater does not discriminate against any employee or applicant on the basis of race, religion, sex, gender identity, disability, age, or any other basis protected by law. CAPRED aims to have a diverse workforce and a workplace that is supportive of gender equality, disability, and social inclusion. Women, people with disabilities, and other minorities are highly encouraged to apply.

