



Request for Quote/Proposal (RFQ/RFP)

Commodity/Service Required:	Service Provider for Physics-Constrained Graph Neural Network Development
Type of Procurement:	One-Off Purchase Agreement
Type of Contract:	Purchase Order
Term of Contract:	10 months
Contract Funding:	U.S. Department of State (DOS)
This Procurement supports:	Energy Secure Philippines Activity (ESP)
Submit Proposal to:	Ms. Divina B. Chingcuanco Chief of Party, ESP RTI International via email: jvitan@energysecure.ph
Date of Issue of RFP/Q:	May 21, 2026
Date Questions from Supplier Due:	May 28, 2026
Date Proposal Due:	June 4, 2026
Approximate Date Purchase Order Issued to Successful Bidder(s):	On or before June 12, 2026
Method of Submittal:	
Email to jvitan@energysecure.ph	
Respond via e-mail with attached document in MS Word / pdf format. The Bidder/Seller agrees to hold the prices in its offer firm for 60 days from the date specified for the receipt of offers, unless another time is specified in the addendum of the RFP/RFQ.	
Solicitation Number:	ESP-RFP-2026-027

Attachments to RFP:

1. Attachment “A” – Commodity Specifications
2. Attachment “B” – Instructions to Bidders/Sellers
3. All PO Terms and Conditions are listed on our website at: [RTI-PO-Terms_English_Version - v1.21.pdf](#) or for commercial items: http://www.rti.org/files/PO_FAR_Clauses_Commercial_Items.pdf (hereinafter the “Terms”). Supplier’s delivery of products, performance of services, or issuance of invoices in connection with this purchase order establishes Supplier’s agreement to the Terms. The Terms may only be modified in writing signed by both parties.

All bidders/sellers are responsible to carefully review each attachment and follow any instructions that may be relevant to this procurement.

RTI International is a trade name of Research Triangle Institute. RTI and the RTI logo are U.S. registered trademarks of Research Triangle Institute.

Attachment “A” Commodity Specifications

Statement of Work

Description of Activity/Service:

Energy Secure Philippines (ESP) is a US Government-funded multi-year program that aims to assist the Government of the Philippines (GPH) in promoting a more competitive power sector through investment mobilization, deployment of modern energy technologies, and support in policy reforms and regulation. Implemented by RTI International, ESP’s overall goal is to enhance energy security and reliability in the Philippines. It focuses on advancing inclusive economic growth and resilient development through increased private investment, promoting advanced technology deployment, and boosting the energy sector’s resiliency.

ESP serves as a strategic platform for advancing America First Policy by aligning foreign assistance in the Philippine energy sector with U.S. geopolitical, economic, and national security priorities. Through technical assistance to government and private partners, including support for grid modernization under the Smart and Green Grid Plan (SGGP) and energy resilience planning, ESP helps position the United States as a key partner in shaping the Philippines’ energy transition and disaster preparedness agenda.

ESP also promotes the deployment of advanced and resilient energy technologies such as transmission system upgrades, mobile energy systems (MES) for strategic and underserved locations, and the integration of nuclear energy into the Philippine energy mix following the passage of the Philippine Atomic Energy Regulatory Act. These efforts help expand global markets for U.S. energy technologies, strengthen critical infrastructure, and contribute to securing supply chains and strategic resources. ESP catalyzes private sector investment and supports market-oriented reforms in the power sector. By improving the investment climate, enabling policy and regulatory reforms, as well as mobilizing significant private capital, ESP fosters competitive energy markets that create opportunities for U.S. companies and investors.

RTI International is developing an advanced, physics-constrained Graph Neural Network (GNN) to forecast grid congestion. The primary objective of this project is to integrate machine learning with power systems engineering, ensuring the GNN model strictly respects physical grid constraints (such as Kirchhoff’s loop-flow laws).

This Request for Proposal/Quotation (RFP/Q) to secure specialized, high-level technical personnel. The selected partner will provide expert manpower to support data infrastructure, synthetic data pipeline generation, data analytics, and secure API software development. The contracted personnel will work under the direct technical guidance of RTI’s technical team.

Product or Service Expectations (both if applicable):

Scope of Work & Position Breakdown

The total project timeline is 10 months. The following table outlines the required roles, their Level of Effort (LOE) in Person-Months (PM), and their primary focus areas as detailed in the sources:

Position	Total LOE	Position
DB Specialist / Cloud Engineer	3.0 PM	Managing cloud storage infrastructure and storage; owning the security implementation layer (IAM policy, KMS/Secrets Manager, VPC hardening, and CloudTrail logging); and ensuring batch data ingestion reliability.
Sr. Synthetic Data Specialist	1.5 PM	High-level calibration and generation of synthetic SCADA/outage data for prototype validation; supports the delivery of requirements regardless of real-world data availability.
Synthetic Data Specialist	2.0 PM	Day-to-day implementation of synthetic pipelines using PSS/E topology; hands-on generation of nodal demand, generation, and voltage values; and distribution validation.
Data Analyst	3.0 PM	Cleaning and validating SCADA and IEMOP archives (addressing missing values, outliers, and time alignment); conducting exploratory statistics for model design; and preparing validation reports.

Detailed Technical Scope by Position

The following table details the technical responsibilities and timelines for the subcontracted expert roles, ensuring alignment with the project's milestones and security requirements:

Position	Target Timeline	Detailed Technical Scope
A. DB Specialist / Cloud Engineer (3.0 PM)	Heaviest involvement: Months 1–3 (Infrastructure Setup) and Months 5–6 (Ingestion & Security Delivery).	<ul style="list-style-type: none"> Infrastructure Management: Setup and maintain the cloud storage environment, ensuring robust batch pipeline reliability for archived data ingestion from NCC and GenCo partners. Security Implementation: Own the security layer, including IAM policy design, KMS/Secrets Manager configurations, CloudTrail audit logging, and VPC hardening. Compliance Documentation: Prepare formal AWS security review

<p>B. Senior & Junior Synthetic Data Specialists (1.5 PM & 2.0 PM)</p>	<p>Peak activity: Months 2–5 (Bootstrapping phase).</p>	<p>documentation required for third-party compliance reviews.</p> <ul style="list-style-type: none"> • Synthetic Generation: Generate high-fidelity synthetic SCADA and outage data for prototype validation based on PSS/E assumed values (nodal demand, generation, voltage). • Topology Ingestion: Implement the foundational graph construction pipeline by ingesting and parsing PSS/E grid topology files. • Calibration: Calibrate synthetic outputs against partial real-world data from IEMOP or Pterra solved datasets as they become available.
<p>C. Data Analyst (3.0 PM)</p>	<p>Concentrated: Months 4–8 (Data conditioning & Back-testing).</p>	<ul style="list-style-type: none"> • Data Conditioning: Clean, validate, and parse historical SCADA and IEMOP archives, addressing missing values, anomalies, outliers, time-alignment disparities, and engineering unit conversions. • Statistical Modeling: Provide exploratory data analysis (EDA) and statistical modeling to directly inform GNN architecture design. • Validation Reporting: Draft formal validation reports for partner-facing reviews, specifically timed for the mid-engagement data access checkpoint.
<p>D. Senior Software Developer (4.0 PM)</p>	<p>Heavy involvement: Months 6–9 (API Security, Packaging, and Tier 2 Integration).</p>	<ul style="list-style-type: none"> • Model Packaging: Package the trained GNN model into a deployable, production-ready artifact complete with full automated testing scaffolding. • API Development: Author comprehensive API specifications embedded with strict security primitives, including authenticated API design, signed payloads, and TLS encryption. • Integration Support: Map out end-to-end data flow diagrams and define latency requirements to support the overarching Operational Simulation Framework.

Deliverables, Timelines, Special Terms and Conditions:

Contractual Framework & Key Terms

Work Volume Flexibility (Man-Month Model): Due to the high dependence on external data provisions, this subcontract is structured strictly on a man-month basis. If real grid data access via the Independent Electricity Market Operator of the Philippines (IEMOP) or the National Transmission Corporation or TransCo is delayed, RTI reserves the right to pause, extend, or shift the allocated man-months to accommodate shifting timelines for the training and back-testing phases.

Technical Interdependence: Personnel engaged under this subcontract will not operate in silos. They will function as an extension of the internal engineering team, working under the direct technical oversight of the AI Research Lead and Lead Data Scientist to guarantee that deliverables (e.g., the graph construction pipeline) respect the physical laws of power grids.

Deliverables & Milestone Alignment: Payment schedules and performance evaluations will be strictly pegged to the successful delivery of the project's key milestones:

1. Month 3: Working Data Architecture (Cloud storage Setup & Topology Ingestion)
2. Month 6: Cybersecurity Safeguards Implementation & Cleaned Ingestion Pipelines
3. Month 9: Operational Simulation Framework (Packaged GNN & Secured APIs)

Minimum Qualifications for Personnel

To ensure candidate compliance, proposals must include resumes proving the following minimum qualifications:

- **DB Specialist / Cloud Engineer:** Cloud service experience with Certified Security – Specialty or Solutions Architect Professional certifications.
- **Synthetic Data Specialists (Sr. / Jr.):** Experience working with power systems data. Proficiency in handling power flow file formats, network topologies, and power flow solutions is highly preferred.
- **Data Analyst:** Strong proficiency in Python (Pandas, NumPy) and SQL. Experience handling massive time-series archives (SCADA or energy market data from IEMOP/market operators).

Proposal Submission Requirements

Interested vendors must submit:

1. **Technical Proposal:** Detailing the firm's understanding of the control systems and SCADA facilities for the national transmission grid.
2. **Personnel Resumes:** Detailed CVs of the specific engineers being proposed for the 5 roles.
3. **Financial Proposal:** A broken-down rate card showing the cost per Man-Month (PM)



for each role.

Required Administrative Documents

- Signed RFP document.
- Completed pricing table.

Pricing

Item #	Quantity to be Purchased	Description of Preferred Commodity or Services Specifications	Unit of Measure	Unit Fixed Price (Each)	Total Fixed Price (Each)	Lead Time Availability (Number of Days)
1						
2						
3						
Total Value						

By signing this attachment, the bidder confirms he has a complete understanding of the specifications and fully intends to deliver items that comply with the above listed specifications.

Signature:

Title:

Date:

Attachment “B” Instructions to Bidders/Sellers

1. **Procurement Narrative Description:** The Buyer (RTI) intends to purchase commodities and/or services identified in Attachment A. The Buyer intends to purchase the quantities (for commodities) and/or services (based on deliverables identified in a Statement of Work). The term of the Ordering Agreement shall be from Award Date to the Delivery date of the Offeror unless extended by mutual agreement of the parties. The Buyer intends to award to a single “approved” supplier based on conformance to the listed specifications, the ability to service this contract, and selling price. We reserve the right to award to more than one bidder. If an Ordering Agreement is established as a result of this RFQ/RFP, supplier understands that quantities indicated in the specifications (Attachment A) are an estimate only and RTI does not guarantee the purchase quantity of any item listed.
2. **Procuring Activity:** This procurement will be made by **Research Triangle Institute (RTI International)**, located at

Manila, Philippines.

(insert full address of the office)

who has a purchase requirement in support of a project funded by

U.S. Department of State

(insert client’s name)

RTI shall award the initial quantities and/or services and any option quantities (if exercised by RTI) to Seller by a properly executed Purchase Order as set forth within the terms of this properly executed agreement.

3. **Proposal Requirements.** All Sellers will submit a quote/proposal which contains offers for all items and options included in this RFQ/RFP. All information presented in the Sellers quote/proposal will be considered during RTI’s evaluation. Failure to submit the information required in this RFQ/RFP may result in Seller’s offer being deemed non-responsive. Sellers are responsible for submitting offers, and any modifications, revisions, or withdrawals, so as to reach RTI’s office designated in the RFQ/RFP by the time and date specified in the RFQ/RFP. Any offer, modification, revision, or withdrawal of an offer received at the RTI office designated in the RFQ/RFP after the exact time specified for receipt of offers is “late” and may not be considered at the discretion of the RTI Procurement Officer. The Seller’s proposal shall include the following:
 - (a) The solicitation number:
 - (b) The date and time submitted:
 - (c) The name, address, and telephone number of the seller (bidder) and authorized signature of same:
 - (d) Validity period of Quote:

- (e) A technical description of the items being offered in sufficient detail to evaluate compliance with the requirements in the solicitation. This may include product literature, or other documents, if necessary.
 - (f) If RTI informs Seller that the Commodity is intended for export and the Commodity is not classified for export under Export Classification Control Number (ECCN) “EAR99” of the U.S. Department of Commerce Export Administration Regulations (EAR), then Seller must provide RTI the correct ECCN and the name of Seller’s representative responsible for Trade Compliance who can confirm the export classification.
 - (g) Lead Time Availability of the Commodity/Service.
 - (h) Terms of warranty describing what and how the warranties will be serviced.
 - (i) Special pricing instructions: Price and any discount terms or special requirements or terms (special note: pricing must include guaranteed firm fixed prices for items requested.)
 - (j) Payment address or instructions (if different from mailing address)
 - (k) Acknowledgment of solicitation amendments (if any)
 - (l) Past performance information, when included as an evaluation factor, to include recent and relevant contracts for the same or similar items and other references (including points of contact with telephone numbers, and other relevant information)
 - (m) **Special Note:** *The Seller, by his response to this RFQ/RFP and accompanying signatures, confirms that the terms and conditions associated with this RFQ/RFP document have been agreed to and all of its attachments have been carefully read and understood and all related questions answered.*
4. **Forms:** Sellers (potential bidders or suppliers) must record their pricing utilizing the format found on Attachment “A”. Sellers must sign the single hardcopy submitted and send to address listed on the cover page of this RFQ/RFP.
5. **Questions Concerning the Procurement.** All questions in regards to this RFQ/RFP to be directed to

Jan Ranizen F. Vitán, Procurement and Contracts Manager

(insert name of procurement officer)

at this email address:

jvitan@energysecure.ph

(insert email address of the procurement officer).

The cut-off date for questions is *(insert date)*.

May 28, 2026

6. **Notifications and Deliveries:** Time is of the essence for this procurement. Seller shall deliver the items or services no later than the dates set forth in the contract that will be agreed by both parties as a result of this RFQ/RFP. The Seller shall immediately contact the Buyer's Procurement Officer if the specifications, availability, or the delivery schedule(s) changes. Exceptional delays will result in financial penalties being imposed of Seller.
7. **Documentation:** The following documents will be required for payment for each item:
 - (a) A detailed invoice listing Purchase Order Number, Bank information with wiring instructions (when applicable)
 - (b) Packing List
 - (c) All relevant product/service documentation (manuals, warranty doc, certificate of analysis, etc.)
8. **Payment Terms:** Refer to RTI purchase order terms and conditions found in https://www.rti.org/sites/default/files/rti-po-terms_v1.21.pdf, http://www.rti.org/files/PO_FAR_Clauses.pdf, or http://www.rti.org/files/PO_FAR_Clauses_Commercial_Items.pdf. Payment can be made via wire transfer or other acceptable form. Sellers may propose alternative payment terms and they will be considered in the evaluation process.
9. **Alternative Proposals:** Sellers are permitted to offer "alternatives" should they not be able to meet the listed requirements. Any alternative proposals shall still satisfy the minimum requirements set forth in Attachment A Specifications.
10. **Inspection Process:** Each item shall be inspected prior to final acceptance of the item. All significant discrepancies, shortages, and/or faults must be satisfactorily corrected and satisfactorily documented prior to delivery and release of payment.
11. **Evaluation and Award Process:** The RTI Procurement Officer will award an agreement contract resulting from this solicitation to the responsible Seller (bidder) whose offer conforms to the RFQ/RFP will be most advantageous to RTI, price and other factors considered. The award will be made to the Seller representing the **best value** to the project and to RTI. For the purpose of this RFQ/RFP, price, delivery, technical and past performance are of equal importance for the purposes of evaluating, and selecting the "best value" awardee. RTI intends to evaluate offers and award an Agreement without discussions with Sellers. Therefore, the Seller's initial offer should contain the Seller's best terms from a price and technical standpoint. However, RTI reserves the right to conduct discussions if later determined by the RTI Procurement Officer to be necessary.

The evaluation factors will be comprised of the following criteria:

- (a) **PRICE.** Lowest/reasonable evaluated ceiling price (inclusive of option quantities).
- (b) **DELIVERY.** Seller provides the most advantageous delivery schedule.
- (c) **TECHNICAL.** Items/Services shall satisfy or exceed the specifications described in RFQ/RFP Attachment A.



(d) **PAST PERFORMANCE** - Seller can demonstrate his/her capability and resources to provide the items/services requested in this solicitation in a timely and responsive manner.

(e) **OTHER EVALUATION CRITERIA.**

N/A

12. **Award Notice.** A written notice of award or acceptance of an offer, mailed or otherwise furnished to the successful supplier within the time acceptance specified in the offer, shall result in a binding contract without further action by either party.
13. **Validity of Offer.** This RFP in no way obligates RTI to make an award, nor does it commit RTI to pay any costs incurred by the Seller in the preparation and submission of a proposal or amendments to a proposal. Your proposal shall be considered valid for 60 days after submission.
14. **Representations and Certifications.** Winning suppliers under a US Federal Contract are required to complete and sign as part of your offer RTI Representations and Certifications for values over \$10,000.
15. **Certification.** The offeror, by signing its offer, hereby certifies to the best of its knowledge and belief that no Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress on its behalf in connection with the awarding of this contract.
16. **Anti- Kick Back Act of 1986.** Anti-Kickback Act of 1986 as referenced in FAR 52.203-7 is hereby incorporated into this Request for Proposal as a condition of acceptance. If you have reasonable grounds to believe that a violation, as described in Paragraph (b) of FAR 52.203-7 may have occurred, you should report this suspected violation to the RTI's Ethics Hotline at 1-877-212-7220 or by sending an e-mail to ethics@rti.org. You may report a suspected violation anonymously.
17. **The John S. McCain National Defense Authorization Act for fiscal year 2019 - section 889.** RTI cannot use any equipment or services from specific companies, or their subsidiaries and affiliates, including Huawei Technologies Company, ZTE Corporation, Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, and Dahua Technology Company ("Covered Technology"). In response to this request for proposal, please do not provide a quote which includes any Covered Technology. Any quote which includes Covered Technology will be deemed non-responsive. Additionally, if the United States Government is the source of funds for this RFP, the resulting Supplier shall not provide any equipment, system, or service that uses Covered Technology as a substantial or essential component



3040 Cornwallis Road ■ PO Box 12194 ■ Research Triangle Park, NC 27709-2194 ■ USA
Telephone 919.541.6000 ■ Fax 919.541.5985 ■ www.rti.org

Acceptance:

Seller agrees, as evidenced by signature below, that the seller's completed and signed solicitation, seller's proposal including all required submissions and the negotiated terms contained herein, constitute the entire agreement for the services described herein.

By: *(Seller Company Name)*

Signature: _____

Title:

Date



3040 Cornwallis Road ■ PO Box 12194 ■ Research Triangle Park, NC 27709-2194 ■ USA
Telephone 919.541.6000 ■ Fax 919.541.5985 ■ www.rti.org