



Republic of the Philippines
HOUSE OF REPRESENTATIVES
Quezon City, Metro Manila

TWENTIETH (20th) CONGRESS
FIRST REGULAR SESSION

House Bill No. **808**



Introduced by
Rep. **ROBERT NAZAL**

AN ACT
INSTITUTING A COMPREHENSIVE NATIONAL PROGRAM FOR SOLAR-POWERED
DESALINATION FOR AGRICULTURAL IRRIGATION, PROVIDING AN
INSTITUTIONAL FRAMEWORK, STANDARDS, INCENTIVES, AND FUNDING
MECHANISMS THEREFOR, AND FOR OTHER PURPOSES

EXPLANATORY NOTE

Water determines the fate of Philippine agriculture, yet only about 65% of the country's 3.12 million hectares of technically irrigable land had serviceable irrigation systems as of December 31, 2023, according to the National Irrigation Administration (NIA). This one-million-hectare shortfall suppresses crop yields, limits farmer incomes, and weakens national food security at a time when agriculture still employs roughly one-fifth of the labor force. Every hectare left rain-fed is far less productive: irrigated rice consistently produces double the yield of rain-fed plots, so the present gap translates into millions of tons of unrealized grain and billions of pesos in lost rural earnings.

Conventional solutions alone are proving unaffordable. NIA's own projections indicate that extending traditional canal and dam systems to all remaining areas would require more than 200 billion pesos a year in public spending. Climate volatility compounds the challenge. The 2023–2024 El Niño, for example, damaged more than 270,000 hectares of crops, wiped out over 15 billion pesos in farm output, and pushed hundreds of thousands of rural families deeper into debt. Drought-proof and cost-effective water sources are therefore a strategic imperative.

Solar-powered desalination now offers such an alternative. Breakthroughs in passive and photovoltaic-driven systems have slashed operating costs by as much as three-quarters compared with diesel reverse-osmosis rigs and have demonstrated pay-back periods of just two to three years in pilot farm sites. Containerized units can be deployed at the barangay level, avoiding the right-of-way problems and long lead times

of large canal works, while modern brine-management technologies keep environmental risks within stringent limits.

The proposed “Solar Desalination for Irrigation Act of 2025” aligns with existing statutes. It modernizes water infrastructure under the Agriculture and Fisheries Modernization Act (R.A. No. 8435); advances adaptation goals under the Climate Change Act (R.A. No. 9729); and taps the financing flexibility of the 2023 Public-Private Partnership Code (R.A. No. 11966).

The bill will institutionalize a national Solar Desalination Program under the Department of Agriculture and NIA; establish Philippine National Standards for Solar Desalination within six months; offer time-bound fiscal incentives for private innovators that meet high local-content thresholds; require robust brine-management plans audited by the Department of Environment and Natural Resources; and, guarantee transparency and farmer participation through an online project dashboard and mandatory tariff consultations.

Traditional irrigation alone will not close the gap quickly enough, nor shield smallholders from the next El Niño. Harnessing the country’s abundant solar energy and 36,000-kilometre coastline through modern desalination can deliver a scalable, climate-resilient, and fiscally responsible water supply.

The immediate passage of this measure is therefore urgently needed to stabilize food production, reduce dependence on rice imports, create green jobs in rural areas, and secure the livelihoods of millions of Filipino farmers.



Rep. ROBERT NAZAL
Bagong Henerasyon Party-List

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Be it enacted by the Senate and House of Representatives of the Philippines in Congress assembled:

CHAPTER I
GENERAL PROVISIONS

SECTION 1. Short Title.

This Act shall be known as the “Solar Desalination for Irrigation Act of 2025.”

SECTION 2. Declaration of Policy.

It is hereby the policy of the State to:

- A. Ensure food security and raise agricultural productivity by expanding reliable irrigation services;
- B. Mainstream climate-resilient, low-carbon, and environmentally sound technologies in the water sector;
- C. Leverage public-private partnerships (PPPs) and innovative financing to mobilize resources; and
- D. Safeguard ecosystems and public health through strict regulation of brine and other effluents.

SECTION 3. Objectives.

This Act aims to:

- A. Bridge the national irrigation backlog, particularly in coastal, arid, and El Niño-prone areas;
- B. Establish a results-based program for planning, constructing, operating, and maintaining solar-powered desalination facilities (SPDFS);
- C. Promote technology transfer, research, and local manufacturing of desalination components;
- D. Provide fiscal and non-fiscal incentives to qualified private proponents;
- E. Protect marine and terrestrial ecosystems through best-practice brine management; and
- F. Institutionalize participatory governance, transparency, and accountability in water-resource projects.

CHAPTER II DEFINITION OF TERMS

SECTION 4. Definition of Terms.

- A. Agricultural Irrigation Water – Water of a quality compliant with Philippine National Standards for Irrigation Water (PNS-IW) issued by the DA-BSWM;
- B. Brine – Concentrated saline solution produced as a by-product of desalination;
- C. Climate-Vulnerable Area – A locality classified by PAGASA or the Climate Change Commission as highly susceptible to hydrometeorological hazards or prolonged droughts;
- D. Desalination – The process of removing dissolved salts and other minerals from saline or brackish water to produce freshwater;
- E. Implementing Agencies – Collectively, the Department of Agriculture (DA), National Irrigation Administration (NIA), Department of Environment and Natural Resources (DENR), Department of Energy (DOE), Department of Science and Technology (DOST), Department of Finance (DOF), Local Government Units (LGUs), and the Public-Private Partnership Center;

- F. Solar-Powered Desalination Facility (SPDF) – A desalination system whose primary energy source is solar radiation, whether through photovoltaic, solar-thermal, hybrid, or other renewable configurations;
- G. Program – The Agricultural Water Resilience through Solar Desalination (AWRSD) Program created under Section 6 of this Act;
- H. Project Proponent – Any natural or juridical person, including cooperatives, LGUs, or joint ventures, that undertakes an SPDF project;
- I. Public-Private Partnership (PPP) – Any contractual arrangement falling under Republic Act No. 11966, otherwise known as the “Public-Private Partnership Code of the Philippines.”

CHAPTER III INSTITUTIONAL FRAMEWORK

SECTION 5. Lead Agency. - The Department of Agriculture (DA), through the Bureau of Soils and Water Management (BSWM), shall be the primary implementing agency. The DA-BSWM shall:

- A. Integrate solar desalination into the National Irrigation Master Plan;
- B. Formulate technical standards and design guidelines in coordination with the DOE, DOST, and DENR; and
- C. Oversee program implementation and performance evaluation.

SECTION 6. Creation of the Program. - There is hereby created the Agricultural Water Resilience through Solar Desalination (AWRSD) Program, which shall cover the following components:

- A. Planning and Mapping – Nationwide geo-spatial mapping of irrigation-deficient, saline, or drought-affected farmlands within six (6) months;
- B. Project Development and Feasibility – Conduct of bankable feasibility studies, including economic, financial, social, and environmental analyses;
- C. Financing and PPP Facilitation – Development of financing strategies and PPP procurement packages consistent with the PPP Code;
- D. Capacity-Building and Technology Transfer – Training of engineers, LGU personnel, and farmer-irrigators; promotion of local fabrication of key components;

- E. Research, Development, and Innovation (RDI) – Competitive grants managed by DOST-PCAARRD and HEIs for brine valorization, efficiency improvements, and AI-enabled system monitoring;
- F. Monitoring, Evaluation, and Learning (MEL) – Establishment of a digital dashboard for real-time performance tracking and public disclosure.

SECTION 7. Inter-Agency Steering Committee (IASC).

An IASC is hereby constituted and chaired by the Secretary of Agriculture with the following members:

- A. Administrator, NIA – Vice-Chair;
- B. Secretary, DENR;
- C. Secretary, DOE;
- D. Secretary, DOF;
- E. Secretary, DOST;
- F. Director-General, PPP Center;
- G. A representative each from (i) the League of Provinces, (ii) the League of Municipalities, and (iii) accredited national farmers' federations.

The IASC shall approve sub-programs, issue policy directives, and resolve inter-agency bottlenecks.

CHAPTER IV PROGRAM IMPLEMENTATION

SECTION 8. Prioritization of Areas.

The DA-BSWM, NIA, and LGUs shall jointly prepare a Priority Area List categorized into:

- A. Tier 1: Provinces with $\geq 20\,000$ ha irrigable yet unserved coastal or brackish lands;
- B. Tier 2: Provinces repeatedly affected by El Niño-related irrigation deficits; and

- C. Tier 3: Emerging growth corridors or agribusiness clusters needing climate-proof irrigation.

SECTION 9. Site Selection Criteria.

Proposed SPDF sites shall satisfy:

- A. Proximity (≤ 5 km) to seawater/brackish source of consistent quality;
- B. Availability of unencumbered land for solar arrays and plant footprint;
- C. Grid independence or grid interconnection feasibility;
- D. Socio-economic viability (beneficiaries per cubic-meter cost ratio); and
- E. Minimal ecological disruption compliant with EIS.

SECTION 10. Technology Standards.

Within one hundred eighty (180) days, the DA-BSWM, DOE, and DOST shall issue Philippine National Standards on Solar Desalination for Irrigation (PNS-SDI) prescribing:

- a) Minimum projection of Levelized Cost of Water (LCOW) per cubic meter;
- b) Reject-water volume limits and permissible discharge parameters;
- c) Materials, corrosion resistance, and membrane performance benchmarks;
- d) Requirements for Internet-of-Things (IoT)-enabled sensors for remote monitoring.

SECTION 11. Environmental Compliance.

- a) EIS Requirement. – All SPDFs $\geq 1,000$ m³/day shall secure an Environmental Compliance Certificate (ECC) under P.D. 1586.
- b) Brine Management Plan. – DENR shall promulgate a Brine Management Code promoting zero-liquid-discharge, recovery of salts for industrial use, or controlled marine outfalls compliant with ASEAN criteria.
- c) Periodic Audit. – DENR shall conduct biennial compliance audits; non-compliant operators shall be subject to penalties under Section 30.

SECTION 12. Public-private Partnership Modality.

- a) Solicited and unsolicited PPP proposals shall be processed under R.A. 11966 and its IRR.
- b) The IASC shall create a PPP Project Development and Monitoring Facility (PDMF)-Water window for pre-investment studies.

- c) LGUs may enter into joint-venture agreements pursuant to DILG JVA Guidelines, provided the technical standards herein are observed.

SECTION 13. Procurement for Government-led Projects.

Where a project is fully government-funded, procurement shall follow R.A. 9184 (Government Procurement Reform Act). The DA and NIA may adopt Design-Build-Operate packages and two-stage bidding to capture technological innovations.

CHAPTER V FINANCING, COST RECOVERY, AND INCENTIVES

SECTION 14. Funding Sources.

The Program shall be financed, among others, through:

- a) Annual appropriations of the DA, NIA, and participating agencies;
- b) The Climate Change Adaptation and Mitigation (CCAM) Expenditure Program;
- c) Official Development Assistance (ODA) and concessional loans;
- d) 50 % of net proceeds from the sale of National Government carbon credits under the Philippine Emissions Registry;
- e) PPP modalities, including Build-Operate-Transfer, Build-Own-Operate, Contract-Add-Operate, and hybrid arrangements; and
- f) Private sector investments and grants.

SECTION 15. Tariff-setting and Cost Recovery.

For PPP projects, the Water Regulatory Commission (or its successor) shall approve irrigation water tariffs based on LCOW, ensuring affordability for farmers. Blended tariff structures (fixed + volumetric) may be adopted. A cross-subsidy cap of ten percent (10 %) shall apply unless waived by the DOF.

SECTION 16. Fiscal Incentives.

Registered Green Irrigation Enterprises shall enjoy:

- a) Income-tax holiday of six (6) years, extendible to eight (8) upon proof of 80 % local content in plant components;

- b) Duty-free importation of specialized membranes, pumps, and instruments unavailable locally for ten (10) years;
- c) Zero-rated VAT on the sale of water to recognized farmer-irrigators' associations; and
- d) Accelerated depreciation of renewable-energy equipment at 150% of the normal rate.

SECTION 17. Non-fiscal Support.

The Technical Education and Skills Development Authority (TESDA) shall develop a Solar Desalination Operations NC II/III course. The DOST shall administer collaborative R&D grants of up to ₱30 million per project per cycle.

CHAPTER VI BENEFICIARY PARTICIPATION AND SOCIAL SAFEGUARDS

SECTION 18. Farmers' Organizations.

Beneficiary farmers shall organize into Irrigators' Associations (IAs) or cooperatives. Tariff approval and any future adjustments shall require IA endorsement.

SECTION 19. Gender and Social Inclusion.

At least thirty percent (30%) of capacity-building slots shall be reserved for women and youth farmers. Resettlement, if unavoidable, shall adhere to the "Land Acquisition, Resettlement and Rehabilitation Framework" of the National Irrigation Master Plan.

SECTION 20. Indigenous Peoples' Rights.

Projects within ancestral domains shall require Free, Prior, and Informed Consent (FPIC) pursuant to the provisions of Republic Act No. 8371 otherwise known as "Indigenous Peoples' Rights Act of 1997", and NCIP guidelines.

CHAPTER VII MONITORING, REPORTING, AND ACCOUNTABILITY

SECTION 21. Performance Indicators.

The DA-BSWM shall monitor:

- A. Hectares newly irrigated;
- B. Unit cost of water delivered;

- C. Increase in crop yields and farmer incomes;
- D. Greenhouse-gas emission reductions (tCO₂e avoided); and
- E. Brine disposal compliance rate.

SECTION 22. Digital transparency portal.

A public web-based dashboard shall be established to display project locations, costs, procurement status, tariff schedules, and MEL indicators, with updates published on a quarterly basis.

SECTION 23. Annual Report to Congress.

The DA shall submit a detailed report to the President and both Houses of Congress within ninety (90) days after the end of each fiscal year.

SECTION 24. Audit.

The Commission on Audit (COA) shall audit all disbursements, subsidies, and contingent liabilities arising from PPP contracts.

CHAPTER VIII OFFENSES, PENALTIES, AND ADMINISTRATIVE SANCTIONS

SECTION 25. Unauthorized Discharge of Brine or Pollutants.

Any operator who discharges brine or pollutants beyond DENR-approved limits shall be liable for:

- A. An administrative fine of One million pesos (₱1,000,000) to Ten million pesos (₱10,000,000) per violation, plus One hundred thousand pesos (₱100, 000) per day of continuing offense;
- B. Suspension of ECC; and
- C. Civil and criminal liabilities under R.A. 9275 (Philippine Clean Water Act).

SECTION 26. Misrepresentation and fraud.

Any person who knowingly submits falsified documents to obtain incentives or approvals shall be punished with imprisonment of six (6) months to six (6) years and a fine equivalent to three (3) times the value of the benefit or advantage obtained.

SECTION 27. Conflict of interest.

Public officials who participate in procurement or contract management for projects in which they or their relatives up to the fourth civil degree have an interest shall be subject to dismissal and perpetual disqualification, without prejudice to R.A. 3019.

SECTION 28. Administrative sanctions for negligence.

Implementing agency personnel who fail to act on applications within prescribed periods without just cause shall be liable for administrative penalties under the Civil Service law.

CHAPTER IX MISCELLANEOUS AND FINAL PROVISIONS

SECTION 29. Implementing Rules and Regulations (IRR).

The DA, in consultation with concerned agencies and stakeholders, shall promulgate the IRR within ninety (90) days from effectivity.

SECTION 30. Separability clause.

If any section or provision of this Act is declared unconstitutional, the remaining provisions shall remain in full force and effect.

SECTION 31. Repealing clause.

All laws, executive orders, rules, or regulations inconsistent with this Act are hereby amended or repealed accordingly.

SECTION 32. Appropriations.

The amount necessary to implement this Act shall be charged against the current appropriations of the DA, NIA, DENR, and other concerned agencies. Thereafter, such sums as may be necessary shall be included in the annual General Appropriations Act.

SECTION 33. Effectivity.

This Act shall take effect fifteen (15) days after its complete publication in the Official Gazette or in at least two (2) newspapers of general circulation.

Approved,