

Developing Member Countries' Perspectives on Nuclear Power Development (Philippines)

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10 June 2026



Philippine Energy Landscape (as of Dec 2025)



COAL

40.6%

13,006 MW

Installed Capacity

42.6%

11,863 MW

Dependable Capacity

56.6%

69.2 TWh

Preliminary Gen*



RENEWABLE ENERGY

32.9%

10,533MW

Installed Capacity

31.4%

8,736 MW

Dependable Capacity

25.5%

31.04 TWh

Preliminary Gen*



OIL-BASED

10.8%

3,447 MW

Installed Capacity

9.8%

2,723 MW

Dependable Capacity

0.6%

0.68 TWh

Preliminary Gen*



NATURAL GAS

15.8%

5,052 MW

Installed Capacity

16.3%

4,543MW

Dependable Capacity

17.4%

21.2 TWh

Preliminary Gen*

Source: DOE List of Existing Power Plants as of December 2025

Note: * Preliminary Generation - Based on NGCP Consolidated Daily Operations Report data. Final figures will be released upon consolidation and finalization of all Monthly Operations Report submission of Generation Companies.

Why the Philippines pursue nuclear energy?

REFERENCE

- 35% RE share in power generation mix by 2030
- 50% RE by 2040-2050

CLEAN ENERGY 1

(High RE with low OSW
+ Nuclear + Coal Repurposing)

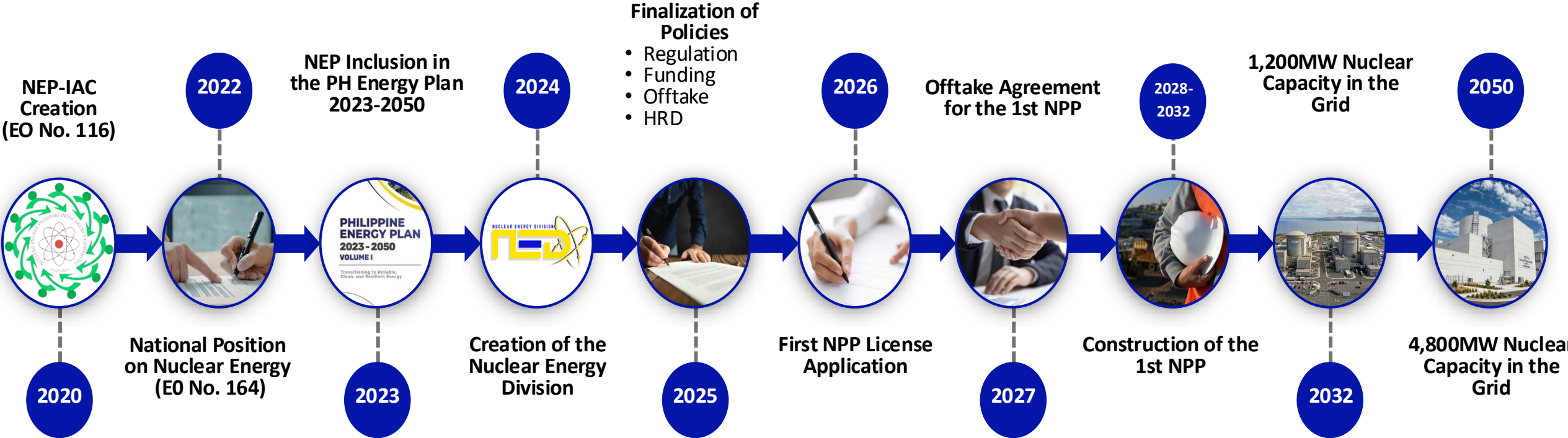
- 35% RE share by 2030, 50% RE by 2040, more than 50% by 2050
- Coal repurposing
- **Nuclear capacity of 1,200 MW by 2032, 2,400 MW by 2035 and 4,800 MW by 2050**
- 19 GW of OSW by 2050

CLEAN ENERGY 2

(High RE with high OSW
+ Nuclear + Coal Repurposing)

- 35% RE share by 2030, 50% RE by 2040, more than 50% by 2050
- Coal repurposing
- **Nuclear capacity of 1,200 MW by 2032, 2,400 MW by 2035 and 4,800 MW by 2050**
- 50 GW of OSW by 2050

Nuclear Energy Program in the Philippines



Philippine Nuclear Energy Milestones

Nuclear Regulatory
Commission & 1st NPP
License Application
2026



NPP Construction
2028



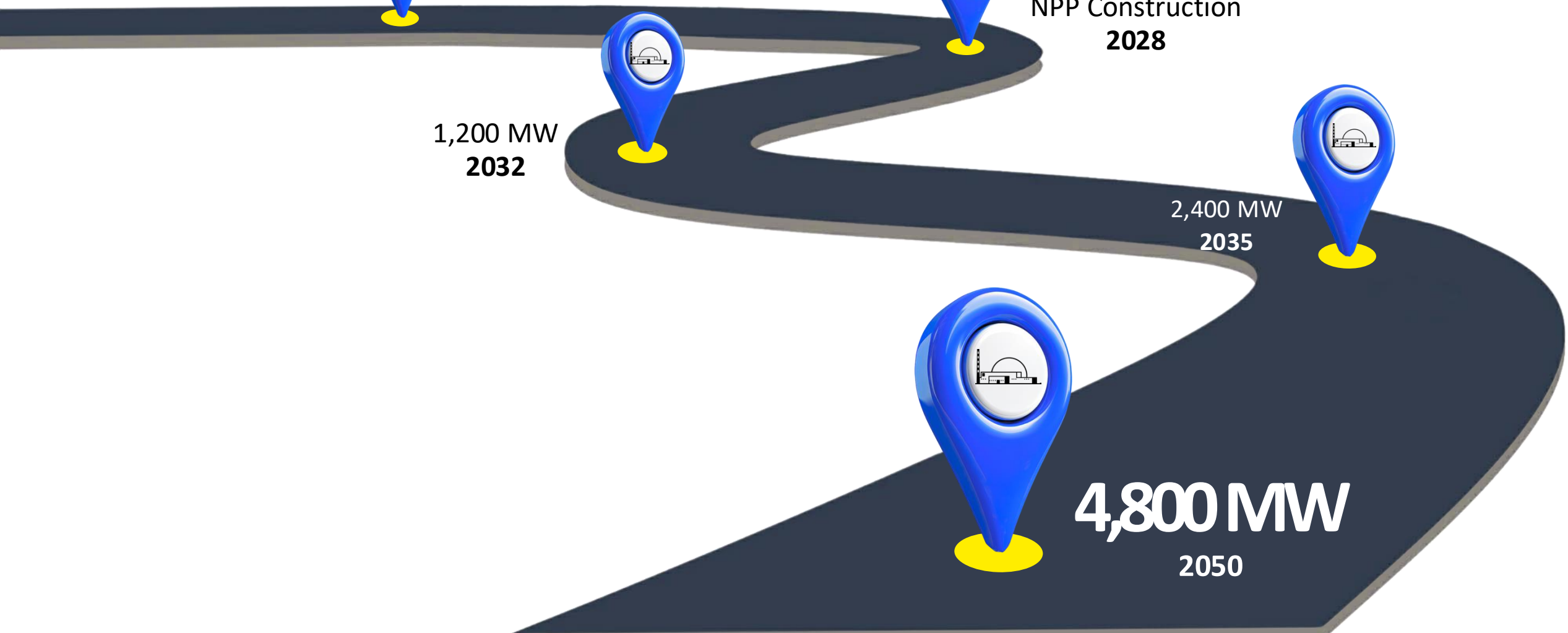
1,200 MW
2032



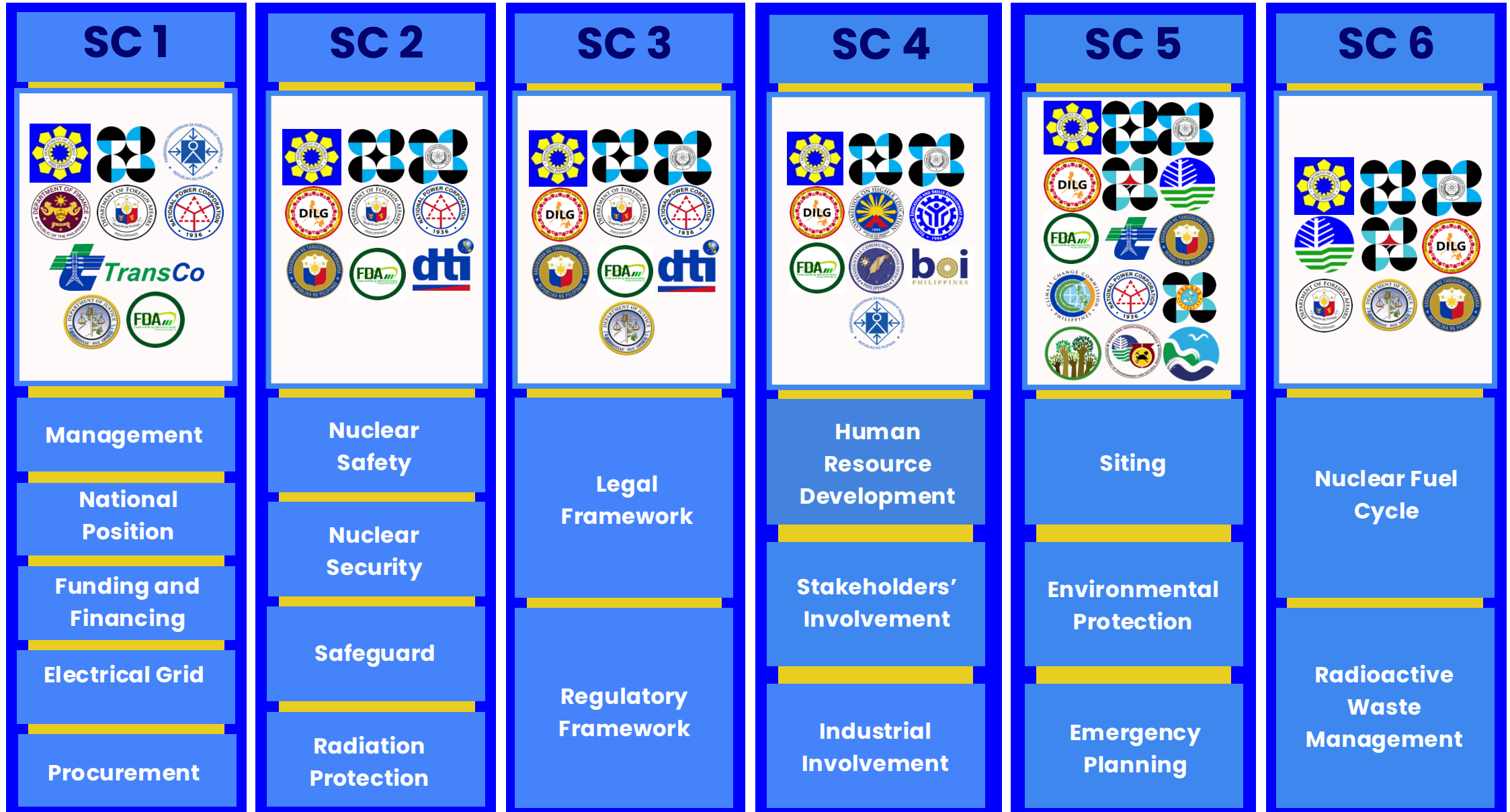
2,400 MW
2035



4,800 MW
2050



NEP – IAC Subcommittees



NEP – IAC Accomplishments

Subcommittee 1

- Executive Order 164 s. 2022
- Funding and Financing Workshops with IAEA and Canada

Subcommittee 2

- Nuclear Safety Policy
- Draft Nuclear Security Policy

Subcommittee 3

- Republic Act 12305
- DOE Department Circular No. DC2025-10-0019
- Four (4) International Conventions

Subcommittee 4

- Nuclear Energy Awareness Training (NEAT)
- Symposiums for Students and Faculty
- Public Perception Surveys on Nuclear Energy
- Strategic Communication Plan

Subcommittee 5

- Identification of potential nuclear power plant sites
- National Radiological and Nuclear Emergency Response Plan (RADPLAN)

Subcommittee 6

- Draft National Policy for Radioactive Waste Management and Spent Fuel Management of the Republic of the Philippines

20
24



Follow-up INIR Mission Phase 1

IAEA: 9/14 recommendations and 10/13 suggestions from the 2018 INIR mission have been fully addressed, with the remainder progressing

Financing Opportunities for Nuclear Energy

Financing Model

1.  PUBLIC-PRIVATE Partnership (PPP)


2.  VENDOR Supported

3.  Consortium

4.  BUILD-OWN-Operate (BOO)

Revenue Model

1.  CONTRACT FOR Difference (CfD)

2.  REGULATED Asset Base (RAB)

Strengthening a World-Class Nuclear Workforce

- Retooling global-caliber Filipino talent to institutionalize self-reliance and lead PH nuclear energy future



Global Foundation: Filipino engineers contribute to global nuclear projects, including the UAE's Barakah Nuclear Power Plant.

Systematic Alignment: NEP-IAC SC 4 prioritizes workforce retooling through curriculum alignment, knowledge transfer, and hands-on training.

Technical Cooperation: Targeted Capacity-Building Programs

- Nuclear HR Workshop with IAEA Experts (Feb 2026)
- Ongoing Nuclear Energy Awareness Training (NEAT)
- Nuclear Symposium for College Students

Current PH Nuclear Workforce Landscape



Nuclear Engineers
less than 10



**Health Physics /
Radiation Workers**
insufficient



Regulators
less than 40
**regulators & inspectors
in PNRI*



Engineers / Technicians
Sufficient
**Filipino engineers and technicians
are employed in several nuclear
plant project overseas.*

Major Challenges / Issues



Universities **stopped** offering **Nuclear Engineering** degree courses after BNPP was mothballed



BNPP operators have either **migrated** to other countries or are **retired** or **deceased**



Gap in nuclear knowledge when **PRR-1** was **shutdown** from 1988–2022

Nuclear Energy Education in Philippine Academe

1



DOST-Philippine Science High School (PSHS)

- Project nStep+: Nuclear Science and Technology Education Program introduced to PSHS Campus Directors and Head Teachers



University of the Philippines Diliman

- Nuclear Energy (EgyE 225), core subject in MSc/PhD Energy Engineering Program since 2019
- Ongoing development of the Nuclear Science and Engineering Program (NSEP)

2



Technological University of the Philippines

- Undergraduate research projects promoting nuclear safety
- Ongoing development of undergraduate nuclear technology program

3



University of Science and Technology of Southern Philippines

- Doctor of Philosophy in Energy Engineering

4



Bicol University

- Chemical Engineering Programs include Nuclear Chemistry and Energy

5



Eulogio "Amang" Rodriguez Institute of Science and Technology

- Chemistry, Environmental Science and Energy Engineering

6



De La Salle University

- Established the MSc Physics, minor in Nuclear Technology Applications since 2023

7



Mapua University

- BSc in Chemical Engineering Program includes a 9-unit Elective Track on Nuclear Technology for Engineers from 2020
- Ongoing development of Nuclear Engineering and Technology Graduate Program
- Established the MSc Physics, minor in Nuclear Technology Applications from 2023

8



University of Sto. Tomas

- MSc in Applied Physics, Major in Medical Physics

G2G Partnerships for Philippine Nuclear Energy



MOA between DOE and TESDA

14 November 2025



MOU between DOE and for the Feasibility Study of KHNP on the Feasibility Study of the Bataan Nuclear Power Plant (BNPP)

7 October 2024



MOU between the Ministry of Trade and Export Development of the Province of Saskatchewan of Canada and the Department of Energy of the Republic of the Philippines in the Field of Cooperation in Sustainable and Clean Energy Transition and Development

04 June 2021



MOU between the DOE (Philippines) and the Ministry for Innovation and Technology in the field of Atomic Industry on the Peaceful Uses of Nuclear Energy (Hungary)

22 September 2021



123 Agreement for Cooperation Concerning Peaceful Uses of Nuclear Energy (United States)

02 July 2024



MOU between the DOE of the Republic of the Philippines and the Ministry of Energy of the Russian Federation on Energy Cooperation (Russia)

25 May 2017

International Partnerships for Philippine Nuclear Energy



TESDA – CHED – UNENE:
Cooperation in Education and
Training in Nuclear Energy
Technology



**TESDA - HUMBER COLLEGE
INSTITUTE OF TECHNOLOGY AND
ADVANCED LEARNING (HUMBER
POLYTECHNIC):**
Cooperation in Technical Vocational
Education and Training (TVET) and
Nuclear Energy Skills Development



**CHED - THE BRILLIANT
ENERGY INSTITUTE (BEI):**
Cooperation in Energy
Research & Innovation,
Education, Training and Skills
Development

Site Selection Study: Where will we build the next nuclear plant?



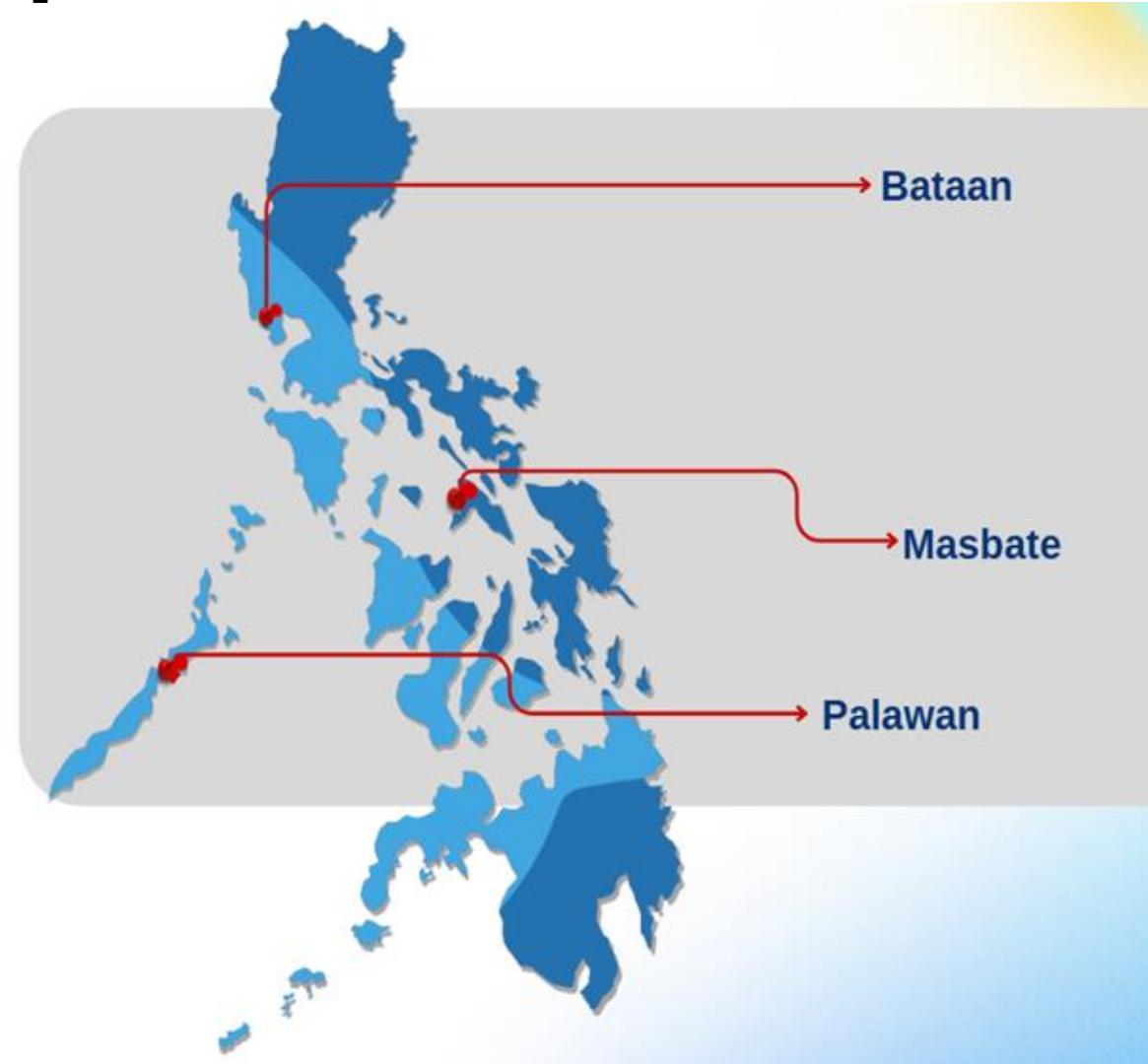
Geological Safety First: Candidate sites must be located away from active fault lines, volcanoes, and areas highly prone to extreme landslides.



Abundant Cooling Water: Proximity to deep coastal waters is essential to provide natural, continuous cooling for safe power plant operations.



Efficient Grid Hookup: Selecting areas near existing high-voltage transmission lines ensures the power reaches major cities efficiently.



What We Need



Government
–Industry–
Academe
Partnership
for NEP



Adherence to
international
standards
and a robust
regulatory
framework
for safety
and security



Investing in a
Skilled
Workforce



Building Public
Trust Through
Transparent
Communication
and Education



Collaboration
with
International
Partners for
Knowledge
and
Technology
Sharing

What We Need



Characterization
of potential
sites



Analysis of
laws affecting
NPP and
plans for
enactment or
amendment
as
appropriate



Study of grid
system
covering
reliability and
compatibility
with NPP



Survey of local
industries and
technology
partners and a
development of a
national policy for
industrial
involvement in
NEP



Thank you!

**For further inquiries,
kindly contact our
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