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Mongolia's Nuclear Power Policy Status

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Mongolia at glance



➤ Mongolia is at the Milestone I of the IAEA's nuclear power infrastructure development;

Key messages for the country in the nuclear field

- 1.5 mil. square km, 3.5 mill. population
- GDP–\$25.8B, 7% growth estimated in 2025
- Close to large energy markets- China, Japan, Korea
- Mineral rich, mining country
 - 93% of total export /coal, copper/
 - 25.8 % in GDP in I half 2025

- ❑ Party to key international accords including NPT
- ❑ Newcomer for Nuclear Power Program
- ❑ Uranium mining activities
- ❑ Nuclear Research Center



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Key Policies

Mongolia is aiming to establish the nuclear power infrastructure to strengthen its energy security, reduce air pollution in cooperation with advanced countries, as well as the IAEA.

Addressing national energy security, the Mongolia's Long-term Development Policy, Vision-2050, pursue to become self-sufficient in energy production and nuclear energy can be important part of solution.

The Government's Action Plan for 2024-2028 includes a provision for conducting basic research on nuclear power, and within this framework, the Nuclear Energy Commission is working to establish a NEPIO under a competent authority to conduct this basic research and implement the nuclear program.

Driving Forces and Challenges in NP Program

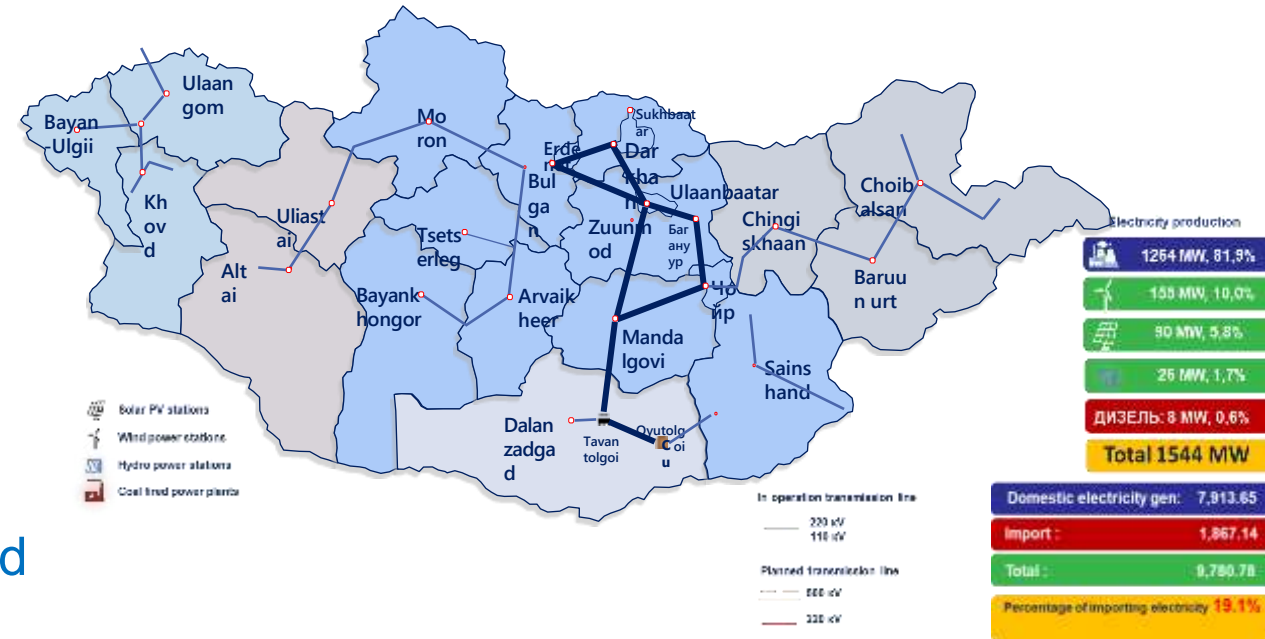
Driving forces:

- Worldwide initiatives for carbon-free energy sources;
- Energy security issues;
- Government commitments (inclusive in the Government's action plan);
- International bilateral and multilateral cooperation including the IAEA, EU and the FNCA

Challenges:

- Newcomers with inadequate knowledge and experience;
- Funding and financial sources;
- Nuclear Technology and
- Human Resource Capacity
- Public perception;

Electricity Generation





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Key policies



VISION 2050

The Mongolia's Long-term Development Policy "Vision-2050"

/2020/:

Develop a low-carbon productive, and inclusive green economy and contribute to international efforts to mitigate climate change.

(Resolution No. 52, 2020 of the Parliament)



NEW REVIVAL POLICY

New Revival Policy /2021/

'Implementation of environmentally friendly, science and advanced technology-based energy projects to boost economy. (Nuclear, green-hydrogen, natural gas, and renewable energy projects)'

(Resolution No. 106, 2021 of the Parliament)



STATE POLICY ON NUCLEAR ENERGY

The State Policy on Exploitation of Radioactive Minerals and Peaceful Use of Nuclear Energy.

(Resolution No. 45, 2009 of the Parliament)

Government's Action Plan for 2024-2028



Government's Action Plan for 2024-2028

• NPP among 14 MEGA Projects...

- 1) Cross-border connection railway and cargo transshipment terminal of "Gashuunsukhait-Gantsmod", "Hangi-Mandal", "Shiveekhuren-Sekhee" border ports;
- 2) Tavantolgoi 450MW Thermal Power Plant;
- 3) Erdeneburen 90MW Hydroelectric Power Plant;
- 4) Egiin River 310MW Hydroelectric Power Plant;
- 5) Renewable energy and distributed sources;
- 6) Kherlen-Toono and Orkhon-Ongi water pipelines;
- 7) Ereentsav-Choibalsan-Baruun Urt-Bichigt vertical road;

8) An uranium project and nuclear power programm;

- 9) Coal-chemical and coking coal-chemical factory;
- 10) Copper Processing factory
- 11) Steel plant
- 12) Petroleum Refinery factory;
- 13) Gold refining plant based on Oyu Tolgoi project;
- 14) National Satellite.

3. Economic policy

➤ 3.3. economic diversification and liberalization

- 3.3.3. growth and liberalization of the energy sector

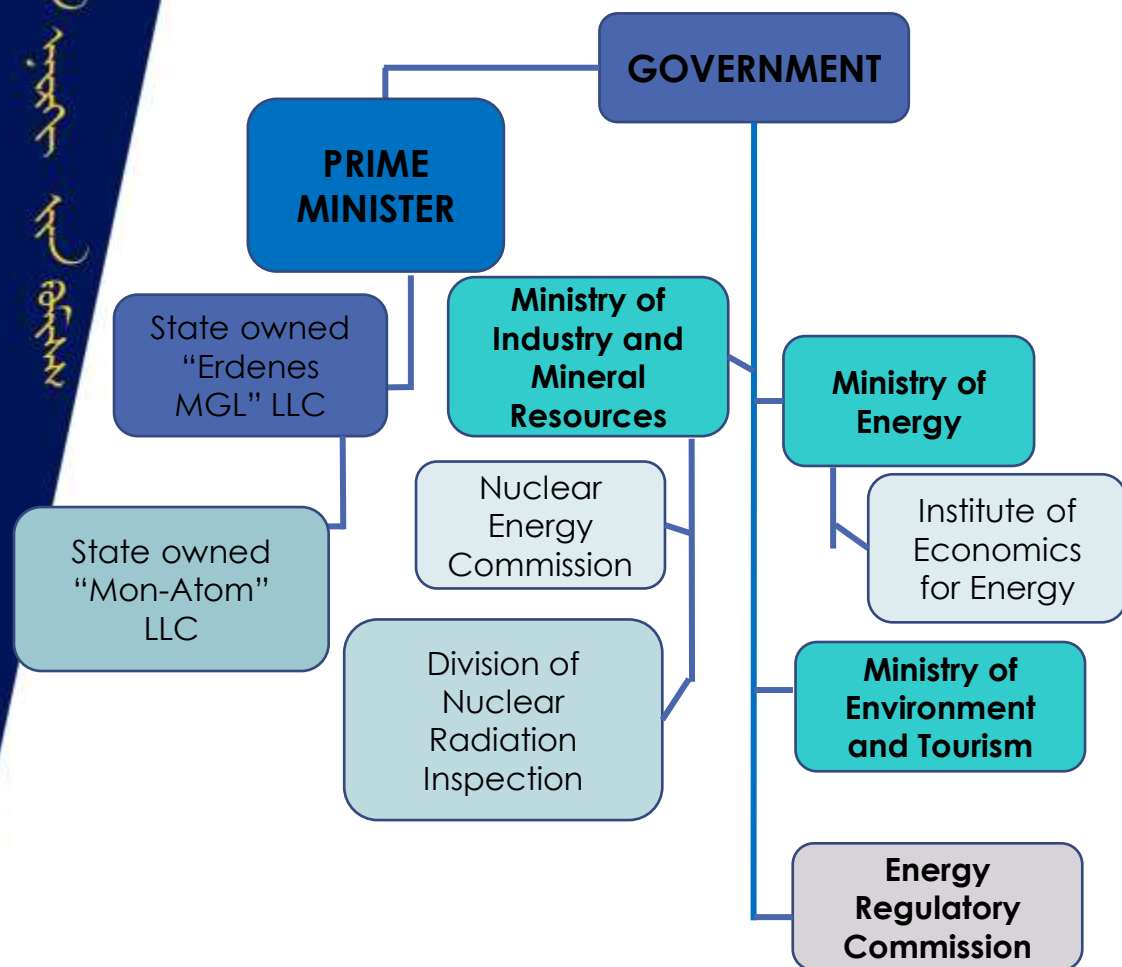
- ✓ 3.3.3.7. Implement a policy of building **nuclear power plants** based on uranium reserves and conduct basic research activities



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ТЭЖ АВАГАЙН
ХАМГААГАХ
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Licensing Procedures

Regulatory Framework



ENERGY LAW (2001)

Article 2. Legislation on Energy

2.3. Matters related to use nuclear power shall be regulated by the Nuclear Energy Law.



NUCLEAR ENERGY LAW (2009)

Article 15. License

15. The following activities shall be carried out with the license granted by the Nuclear Energy Commission:

- 15.1.1. Construct, modify, renovate and decommission nuclear facilities;
- 15.1.2. Exploit nuclear facility;
- 15.1.3. Possess, use and sell nuclear substance;
- 15.1.4. Import, export, transport nuclear substance, managing nuclear waste;

Key regulations:

- Basic safety standards, /2016/
- Regulation on Security of Radiation Sources /2015/
- Basic Regulation on Radiation Protection and Safety /2016/
- Regulation on Transport of Radioactive Material /2019/
- Regulation on Nuclear Material Accounting System /2020/



STATUS of the NUCLEAR POWER PROGRAM

Prior to 2020

- In 2009, The Parliament adopted the State Policy on Nuclear Energy and Nuclear Energy Law.
- In order to carry out research operations for the NPP program, the NEA closely collaborated with the IAEA and started working with several possible nations.
- In accordance with the IAEA's Nuclear Power Infrastructure Development Milestones in 2010–2013, the NEA carried out a number of research projects for the NPP program including: Preliminary Studies on site selections, suitable reactor technologies and designs, on research reactors, legal and regulatory aspects, legal and international instruments, environmental impact assessments, public surveys on nuclear power introduction...



Minutes of the meeting
of the Government of Mongolia, April 03, 2024.

In accordance with the IAEA's "Recommendations for the Development of Nuclear Energy Infrastructure", the head of the NEC was instructed to study 19 basic issues of nuclear power plant infrastructure and prepare and present a preliminary feasibility study.

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|--------------------------------|-------------------------------------|
| 1. National Position | 11. Stakeholder Involvement |
| 2. Nuclear Safety | 12. Site and Supporting Facilities |
| 3. Management | 13. Environmental Protection |
| 4. Funding and Financing | 14. Emergency Planning |
| 5. Legal Framework | 15. Nuclear Security |
| 6. Safeguards | 16. Nuclear Fuel Cycle |
| 7. Regulatory Framework | 17. Radioactive Waste
Management |
| 8. Radiation Protection | 18. Industrial Involvement |
| 9. Electrical Grid | 19. Procurement |
| 10. Human Resource Development | |



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ЗАСГИЙН ГАЗАР

STATUS of the NUCLEAR POWER PROGRAM

Working Group



EXPLOITATION OF RADIOACTIVE MINERALS AND
NUCLEAR ENERGY

NEW REVIVAL POLICY

MINUTES OF MONGOLIAN GOVERNMENT MEETING
№6



MINISTRY OF ENERGY
MINISTRY OF MINING AND HEAVY INDUSTRY
MINISTRY OF EDUCATION AND SCIENCE



МОНГОЛ УЛСЫН
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To implement the New Revival Policy of Mongolia and to intensify the implementation of development projects, and to fulfill objectives reflected in the energy sector, a joint order, "To Study a Possibility of Use of Nuclear Power in Mongolia", was approved by the Minister of Education and Science, the Minister of Energy, and the Minister of Mining and Heavy Industry dated August 11, 2022.





ҚАЗАҚСТАН РЕСПУБЛИКАСЫНЫҢ
ЭНЕРГЕТИКА МИНИСТРЛІГІ

DEVELOPMENT

Activities of Working Group

- ☐ A preliminary study on economy of 300/600MWe NPP
- ☐ Review activities of previous results obtained by NEA prior to 2020
- ☐ Finalization of a Preliminary Report
- ☐ Submission to NEC meetings
- ☐ Discussion at meetings of Council of Ministry of Energy
- ☐ Preparation to form a NEPIO and initiate key studies stipulated in the Phase 1

Coordinated activities with the IAEA

- ☐ Development of a RoadMap for NPPProgram
 - ☐ Consulting meeting
- ☐ Implementation the national project MON2010 for 2024-2025
 - ☐ National Workshops in Q3 and Q4, 2024
 - ☐ HRD and EMs
- ☐ A National project proposal for 2026-2027
- ☐ Preparation of a Pre-Feasibility and a Comprehensive Report
- ☐ Consideration to join the INPRO project (INPRO methodology)

Activities of State-owned Mon-Atom LLC

- ☐ MoU with the Rosatom on cooperation in nuclear power field, 2023
 - ☐ Roadmap development
 - ☐ Consulting meeting



ЦӨМИЙН ЭРЧИМ ХҮЧНИЙ ХӨТӨЛБӨРИЙН ЗАМЫН ЗУРАГЛАЛЫН ТӨСӨЛ

The timeline chart illustrates the project schedule from 2024 to 2034. It is organized into three main phases:

- Phase 1 (2024-2026):** Includes tasks such as 'Submit WGR to the Government of Mongolia' (2024), 'Initiate studies Implement national project' (2024), 'Pre-Feasibility studies' (2025), and 'National position INIR (Phase 1)' (2027).
- Phase 2 (2027-2029):** Includes tasks such as 'Comprehensive report' (2027), 'Establish NEPIO' (2027), 'Establish/draft national policies' (2025), 'Draft Nuclear Law' (2026), 'Self-evaluation' (2026), and 'SEED (Site Survey)' (2026).
- Phase 3 (2030-2034):** Includes tasks such as 'Comprehensive' (2026), 'National position INIR (Phase 1)' (2027), and 'National position INIR (Phase 1)' (2027).

Arrows indicate the flow of the project from left to right, showing the progression of tasks over time.



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MAJOR DEVELOPMENTS

- **Amendments to Nuclear Energy Law , Mineral law and Investment;**
- **Negotiation of Investment Agreement in the uranium sector between Mongolian and French parties;**
- **Preparation of joining conventions and protocol:**
 - **Convention on Nuclear Safety,**
 - **Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management,**
 - **Amendment to Convention on the Physical Protection of Nuclear Material (CPPNM)**
 - **Modified Small Quantities Protocols**
- **Mongolia is at the Milestone I of the IAEA's nuclear power infrastructure development;**
- **Implementation of “Project development agreement” with the Rosatom on Center for Nuclear Science and Technology**
- **Public acceptance**



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Summary

- The Government is taking necessary measures to put new energy sources into energy system to meet the increasing demands;
- Mongolia aims to study the possibility of use of nuclear power in its energy-mix. In this regard, the IAEA's support is vital for the country;
- Due to Mongolia's sparse population, vast landmass, and low energy consumption, the use of a SMR is being considered as a potential alternative to diversify energy sources and provide stable electricity;
- The public acceptance for nuclear power is essential as the country consider to embark on nuclear power program;
- Intensify eco-friendly, energy-based projects through advanced technology and science, specifically nuclear energy in accordance with the leading economic directions to meet near future and long-term electricity demand;
- Strengthen international cooperation, especially with the IAEA, in the nuclear energy field.



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Thank you for your attention

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