

NUCLEAR ENERGY PROGRAMME IN MONGOLIA

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The Nuclear Energy Agency, The Government of Mongolia**

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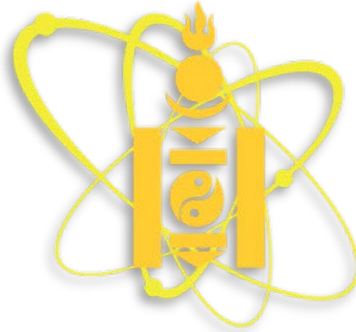
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1. COUNTRY PROFILE

- **MONGOLIA IS LAND-LOCKED COUNTRY IN CENTRAL ASIA**
- **POPULATION (MILLIONS) 2.736 /by 2011/**
- **POPULATION GROWTH (ANNUAL %) 1.98**
- **SURFACE AREA (SQ.KM)(MILLIONS) 1.564**





2. ENERGY MATTERS IN THE COUNTRY



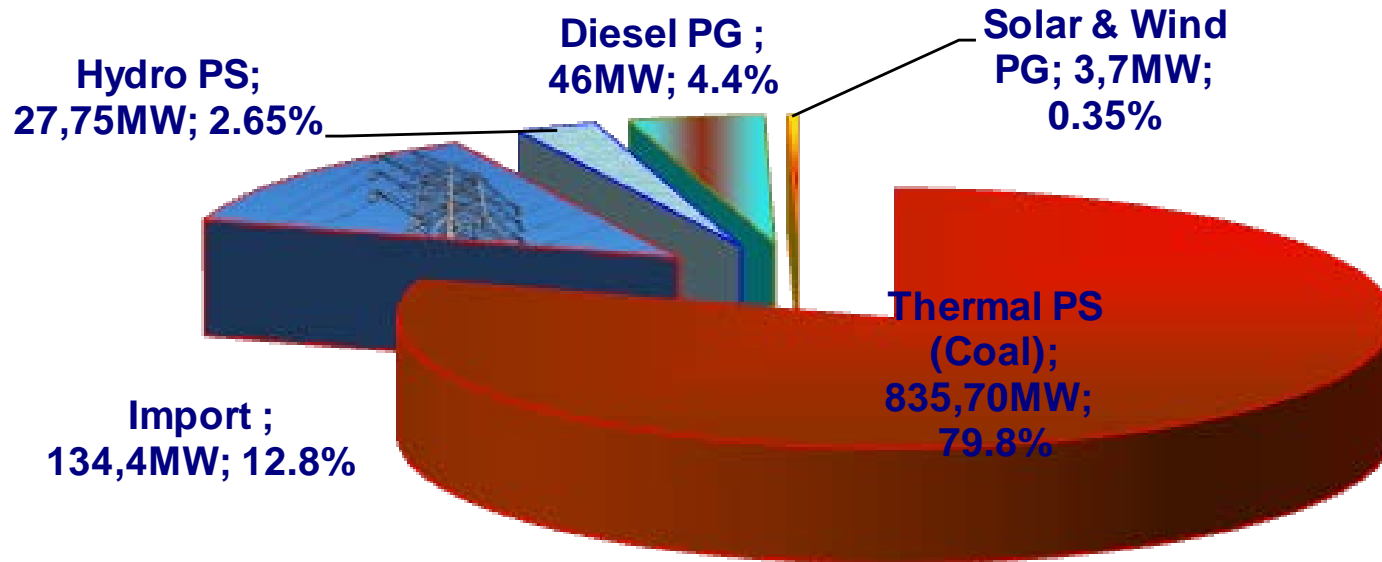
2. ENERGY MATTERS IN THE COUNTRY

ELECTRICITY PRODUCTION CAPACITY

913.15 MW

IMPORT CAPACITY

134.4 MW

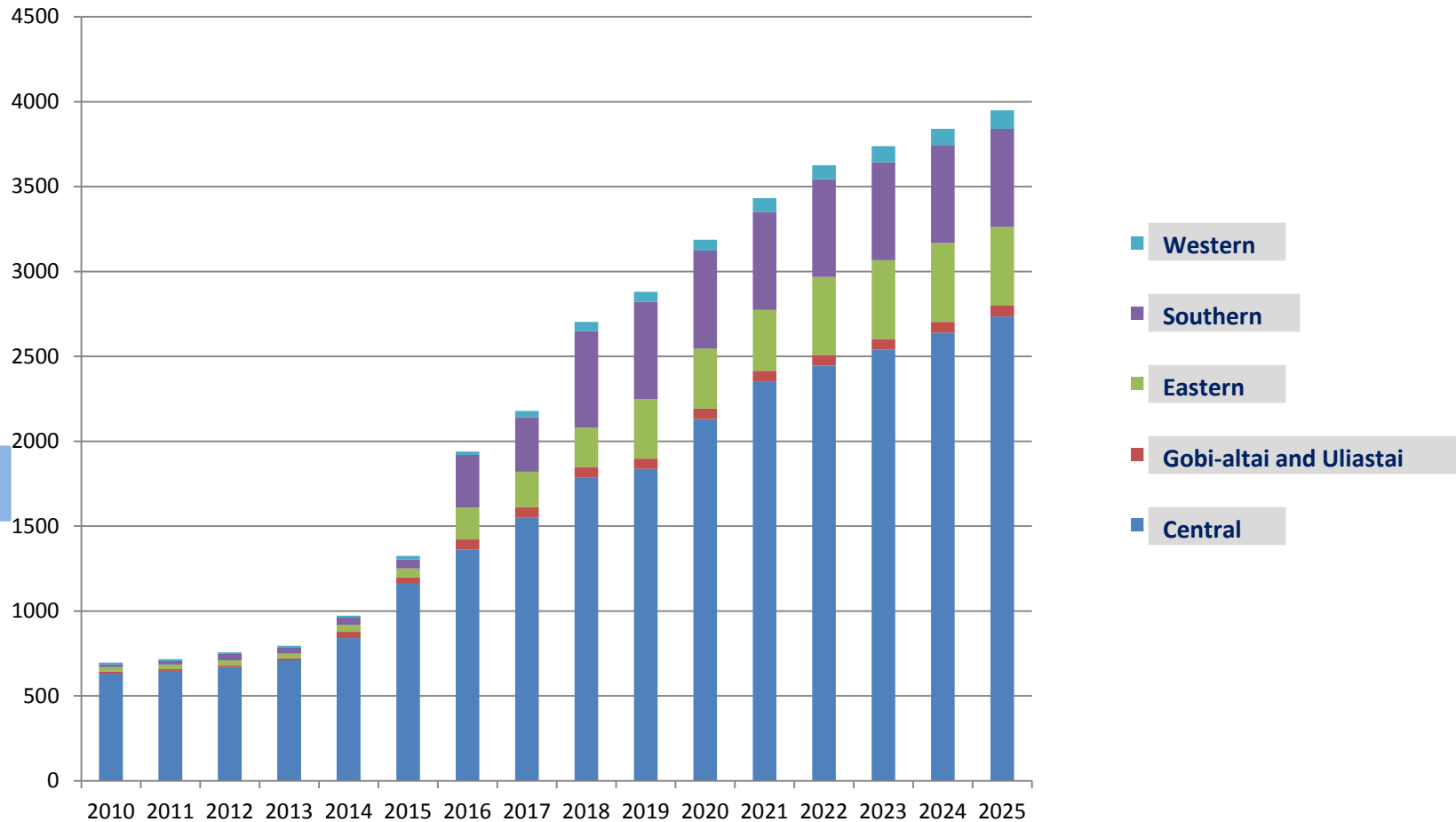


THE CURRENT ELECTRICITY GRID



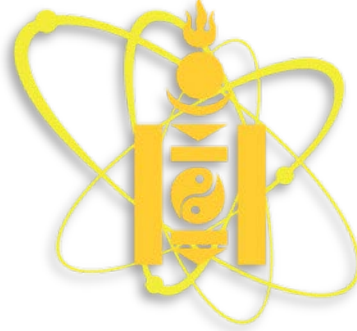
ENERGY PLANNING AND POSSIBLE NUCLEAR ENERGY INVOLVEMENT BY 2025

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WHY DO WE NEED NUCLEAR ENERGY





3. NATIONAL POLICY, PROGRAMME AND PLAN FOR PEACEFUL USES OF NUCLEAR ENERGY



- **MONGOLIA IS A NON-NUCLEAR COUNTRY, SINCE THERE ARE NO NUCLEAR POWER PLANTS AND RESEARCH REACTORS. CURRENTLY, RADIATION SOURCES ARE USED IN THE FOLLOWING FIELDS:**
 - **MEDICINE (RADIOTHERAPY, NUCLEAR MEDICINE AND DIAGNOSTIC RADIOLOGY)**
 - **INDUSTRY AND MINING**
 - **GEOLOGY**
 - **SCIENCE AND EDUCATION**
 - **AGRICULTURE**



IN JANUARY 2008 , THE PARLIAMENT OF MONGOLIA APPROVED “MILLENNIUM DEVELOPMENT GOALS-BASED COMPREHENSIVE NATIONAL DEVELOPMENT STRATEGY OF MONGOLIA”. (PARLIAMENT OF MONGOLIA RESOLUTION, No. 12, 31 JANUARY 2008).

ACCORDING TO THIS DOCUMENT THE FOLLOWING STRATEGIC OBJECTIVES IN THE FIELD OF USE THE NUCLEAR ENERGY:

- IMPLEMENT STEP-BY-STEP POLICY ON USE OF NUCLEAR ENERGY,**
- SET FORTH AND START IMPLEMENTING THE OBJECTIVE TO BUILD A NUCLEAR POWER PLANT.**



IN NOVEMBER 2008, THE PARLIAMENT OF MONGOLIA APPROVED “ACTION PLAN OF THE GOVERNMENT OF MONGOLIA FOR 2008-2012”. (PARLIAMENT OF MONGOLIA RESOLUTION, No. 35, 21 NOVEMBER 2008).

ACCORDING TO THIS DOCUMENT TWO MAIN OBJECTIVES WERE SUGGESTED;

- FEASIBILITY STUDY ON THE BUILDING OF NUCLEAR POWER PLANT;**
- TO IMPROVE NUCLEAR AND RADIATION SAFETY AND SECURITY.**



IN JUNE 2009 THE PARLIAMENT OF MONGOLIA APPROVED “STATE POLICY ON THE EXPLOITATION OF RADIOACTIVE MINERALS AND NUCLEAR ENERGY”. THE CONTENTS OF THE DOCUMENT AS THE FOLLOWING:

- 1. GENERAL PROVISION**
- 2. BASIC PRINCIPLES ON IMPLEMENTING THE POLICY**
- 3. EXPLORATION, EXPLOITATION, PROCESSING
AND TRANSPORTATION OF RADIOACTIVE MINERALS**
- 4. EXPLOITATION PEACEFUL USES OF NUCLEAR ENERGY**
- 5. NUCLEAR AND RADIATION SAFETY AND SECURITY**
- 6. RESEARCH AND HUMAN RESOURCE DEVELOPMENT**
- 7. LEGAL AND REGULATORY FRAMEWORK**
- 8. SECTOR MANAGEMENT, ORGANIZATIONAL STRUCTURE
AND COOPERATION.**



**THE STATE POLICY PRESENTED THE PURPOSES OF USING
NUCLEAR ENERGY IN ARTICLE 4 AS FOLLOWS:**

- 4.1 TO MAKE ASSESSMENT OF THE ROLE OF NUCLEAR POWER OF MONGOLIA
IN LINE WITH ITS ENERGY SUPPLY, BALANCE AND EXPORT POTENTIAL
AND TO FORMULATE JUSTIFICATION FOR BUILDING NUCLEAR POWER
PLANT, AIMING TO START ITS CONSTRUCTION WITHIN THE NEAR FUTURE
OF 10 YEARS.**
- 4.2 TO MAKE MEASURES FOR THE DEVELOPMENT OF NECESSARY
INFRASTRUCTURE FOR THE EXPLOITATION OF NUCLEAR POWER BY
REFLECTING IN THE RELEVANT PROJECT OR THROUGH OTHER FINANCIAL
SOURCES, KEEPING IN MIND THE INTEGRATED PROGRAMS OF
INFRASTRUCTURE OF MONGOLIA.**



- 4.3 TO ENCOURAGE AND IMPLEMENT IN PHASES THE TRANSLATION OF ACHIEVEMENTS GAINED IN THE PROCESS OF THE INTRODUCTION OF NUCLEAR ENERGY AND NUCLEAR TECHNOLOGY INTO ENERGY, INDUSTRY, MINING, FOOD, AGRICULTURE, HEALTH, RESEARCH AND OTHER SECTORS.**
- 4.4 TO FACILITATE NECESSARY CONDITIONS TO IMPORT NUCLEAR FUEL, ITS TRANS-BORDER TRANSPORTATION AND STORAGE IN RESPECTIVE TERRITORY, REQUIRED FOR THE PEACEFUL USE OF NUCLEAR POWER.**
- 4.5 TO CONDUCT SENSITIVE OPERATIONS OF PROCESSING NUCLEAR AND RADIOACTIVE WASTE, DEMANDING ACCURATE MONITORING AND HIGH TECHNOLOGY IN MONGOLIA THROUGH THE EXPLORATION OF EXPERIENCES OF FOREIGN COUNTRIES.**
- 4.6 THE POLICY ON NUCLEAR ENERGY IS OPEN TO THE PUBLIC AND NEIGHBORING COUNTRIES.**

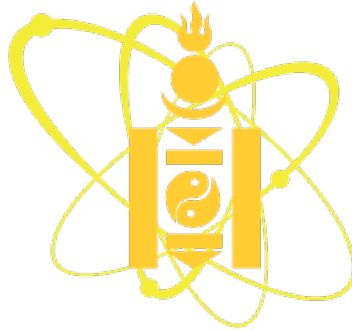


IN JULY 2009, THE GOVERNMENT OF MONGOLIA APPROVED “PROGRAM AND PLAN FOR IMPLEMENTATION OF STATE POLICY ON THE EXPLOITATION RADIOACTIVE MINERALS AND NUCLEAR ENERGY”. (RESOLUTION OF THE GOVERNMENT OF MONGOLIA, No. 222, 22 JULY 2009). THE MAIN PURPOSE OF THE DOCUMENT IS TO SECURE ENERGY SUPPLY AND TO PROVIDE SUSTAINABLE DEVELOPMENT OF THE COUNTRY.

THE PROGRAM SHALL BE IMPLEMENTED IN TWO PHASES:

- TO PROVIDE LEGAL AND REGULATORY FRAMEWORK AND OTHER 2009-2012;**
- CONDITIONS NECESSARY TO ACHIEVE OBJECTIVES OUTLINED IN THE DOCUMENT;**
- TO IMPLEMENT ALL ACTIVITIES ENVISAGED IN THE DOCUMENT 2013-2021**

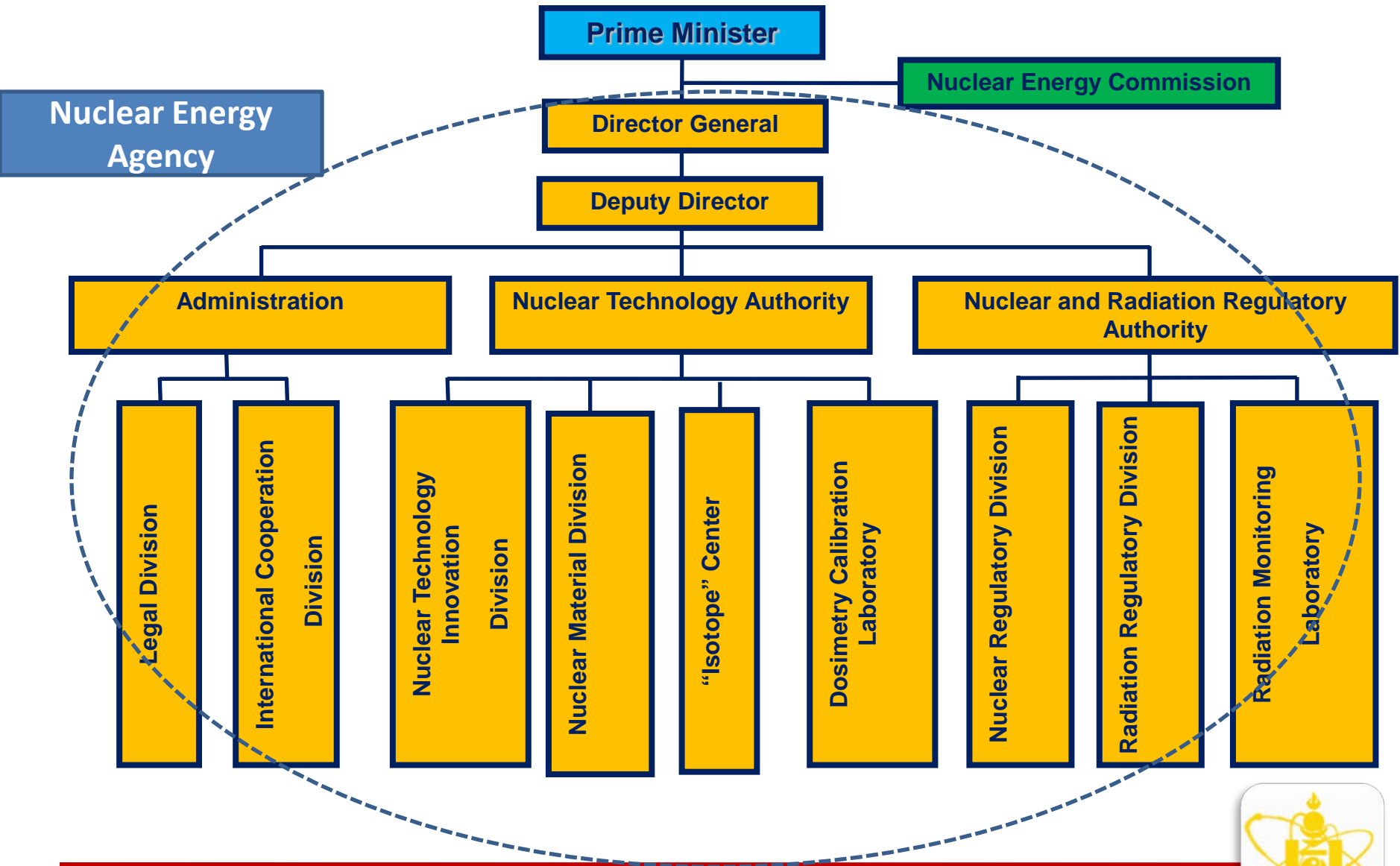




4. ORGANIZATION OF THE STATE ADMINISTRATIVE AUTHORITY IN CHARGE OF NUCLEAR ENERGY MATERS



ORGANIZATIONAL STRUCTURE OF NUCLEAR REGULATORY FRAMEWORK



4.1 NUCLEAR ENERGY COMMISSION

THE NUCLEAR ENERGY COMMISSION WAS ESTABLISHED IN JUNE 2008, UNDER THE DIRECT SUPERVISION OF THE PRIME MINISTER OF MONGOLIA.

FREELANCE NUCLEAR ENERGY COMMISSION IS OBLIGED TO REGULATE AND COORDINATE THE EXPLOITATION OF RADIOACTIVE MINERALS AND NUCLEAR ENERGY, TRANSFER OF NUCLEAR TECHNOLOGY, DEVELOPMENT OF RESEARCH, AS WELL AS ENSURING OF NUCLEAR AND RADIATION SAFETY IN THE NATIONAL LEVEL.



THE STRUCTURE OF THE NEC

THE PRIME MINISTER IS THE CHAIRMAN OF THE NUCLEAR ENERGY COMMISSION.

THE DEPUTY CHAIRMAN OF THE COMMISSION IS HEAD OF THE ADMINISTRATIVE AUTHORITY RESPONSIBLE FOR MATTERS OF NUCLEAR ENERGY.

THE GOVERNMENT OF MONGOLIA APPROVES THE STRUCTURE AND ACTIVITY RULES OF THE COMMISSION.

THE COMMISSION HAS 15 MEMBERS

- **4 MINISTERS**
- **3 DEPUTY MINISTERS**
- **3 STATE SECRETARIES**
- **4 DIRECTOR GENERAL OF AGENCIES**
- **1 SECRETARY OF COMMISSION.**



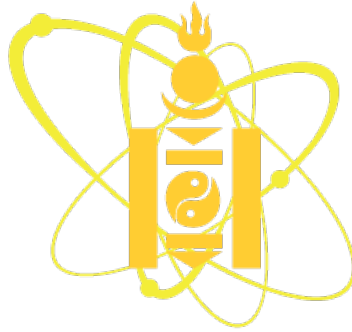
4.2 THE NUCLEAR ENERGY AGENCY

THE NUCLEAR ENERGY AGENCY IS THE STATE ADMINISTRATIVE AUTHORITY IN CHARGE OF NUCLEAR ENERGY.

THE AGENCY WAS ESTABLISHED IN DECEMBER 2008 BY THE GOVERNMENT DECREE, AND BEGAN TO PERFORM ITS DUTIES IN JANUARY 2009.

ORGANIZATIONAL STRUCTURE AND SCOPE OF ACTIVITIES WERE APPROVED BY 96TH RESOLUTION OF THE PRIME MINISTER.





5. IMPLEMENTATION OF NUCLEAR POWER PROGRAMME



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- TO IMPLEMENT ALL ACTIVITIES ENVISAGED IN THE DOCUMENT 2013-2021**



NUCLEAR POWER PROGRAMME IMPLEMENTATION

- **THE PROJECT ON THE PRELIMINARY STUDY OF BUILDING OF THE FIRST NUCLEAR POWER STATION-I IN 2010**
- **THE PROJECT ON THE PRELIMINARY STUDY OF BUILDING OF THE FIRST NUCLEAR POWER STATION-II IN 2011**
- **THE PROJECT ON THE DEVELOPMENT OF NUCLEAR INFRASTRUCTURE FOR THE NUCLEAR ENERGY PROGRAMME IN 2012**

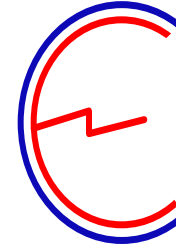




NUCLEAR RESEARCH CENTER



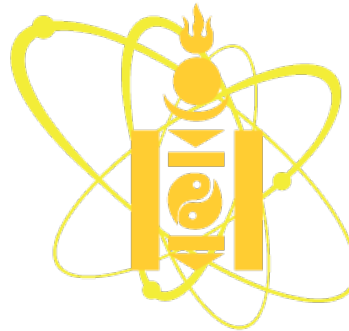
INSTITUTE OF PHYSICS AND TECHNOLOGY



"ERCHIM" CORPORATION



INSTITUTE OF GEOGRAPHY



NUCLEAR ENERGY AGENCY, REGULATORY AGENCY OF THE GOVERNMENT OF MONGOLIA



RESEARCH CENTER FOR ASTRONOMY AND GEOPHYSICS



TECHNOLOGY TO TRANSFER CENTRE OF MONGOLIA

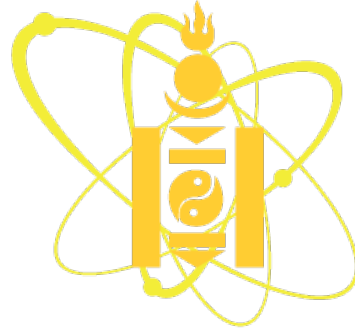


ENGINEERING ACADEMY OF MONGOLIA



INSTITUTE OF GEOLOGY AND MINERAL RESOURCES

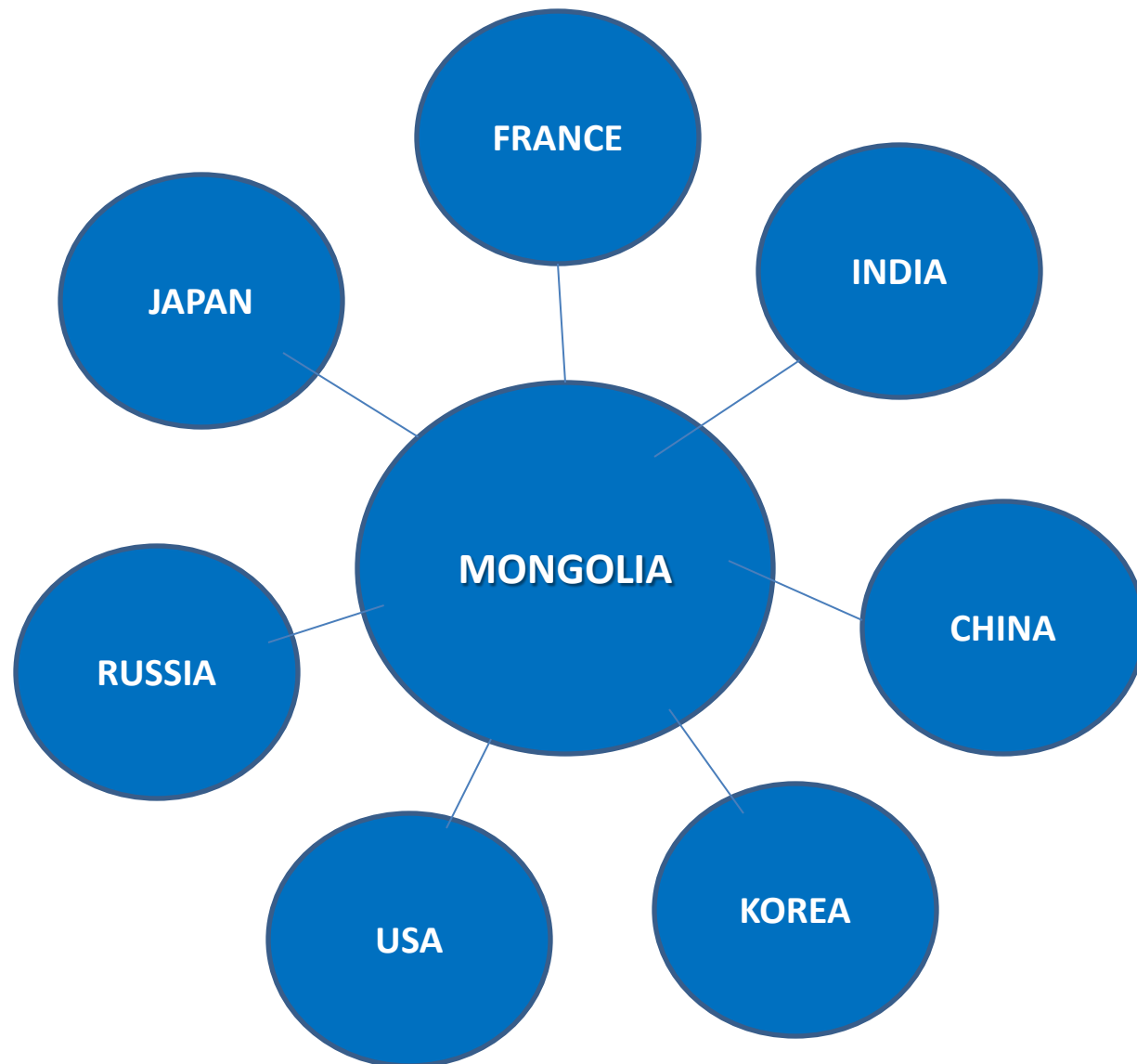




6. INTERNATIONAL COOPERATION



INTERGOVERNMENTAL AGREEMENT AND MEMORANDUM OF UNDERSTANDING COUNTRIES



08/01/2012

The NEA of the Government of Mongolia



BETWEEN 2009-2011 AGREEMENTS AND MEMONDARUM OF UNDERSTANDING WITH COUNTRIES

No	COUNTRY	AGREEMENT			MEMONDARUM		
		2009	2010	2011	2009	2010	2011
1	Russian Federation	2	1		1		
2	Japan				1		
3	India				1		
4	China					1	
5	France		1			1	
6	USA					1	
7	Korea						2
Total		2	2		3	3	2



THE GOVERNMENT OF MONGOLIA ATTACHES GREAT IMPORTANCE AND ACTIVELY CARRIED OUT BILATERAL COOPERATION WITH OTHER COUNTRIES IN THE FIELD OF RADIOACTIVE MINERALS AND THE PEACEFUL USE OF NUCLEAR ENERGY. TO THIS DATE WE HAVE SIGNED INTERGOVERNMENTAL AGREEMENTS WITH **THE RUSSIAN FEDERATION AND **THE FRENCH REPUBLIC**, AS WELL AS MEMORANDUM OF UNDERSTANDING WITH **JAPAN, INDIA, CHINA ,THE UNITED STATES OF AMERICA** AND **THE REPUBLIC OF KOREA**.**

1. AGREEMENT BETWEEN **THE GOVERNMENT OF MONGOLIA AND **THE GOVERNMENT OF RUSSIAN FEDERATION** ON COOPERATION IN THE FIELD OF PEACEFUL USE OF ATOMIC ENERGY (14.11.2000)**

2. AGREEMENT BETWEEN **THE NUCLEAR ENERGY AGENCY OF MONGOLIA AND **THE STATE ATOMIC ENERGY CORPORATION “ROSATOM”** ON COOPERATION IN THE FIELD OF EXPLOITATION OF URANIUM AND NUCLEAR ENERGY (17.03.2009)**



MEMORANDUM OF UNDERSTANDING

3. MEMORANDUM OF UNDERSTANDING BETWEEN THE NUCLEAR ENERGY AGENCY – REGULATORY AGENCY OF THE GOVERNMENT OF MONGOLIA AND THE STATE ATOMIC ENERGY CORPORATION “ROSATOM” ON HUMAN RESOURCE DEVELOPMENT (12.05.2009)

4. MEMORANDUM OF UNDERSTANDING BETWEEN THE NUCLEAR ENERGY AGENCY – REGULATORY AGENCY OF THE GOVERNMENT OF MONGOLIA AND THE AGENCY FOR NATURAL RESOURCES AND ENERGY OF THE MINISTRY OF ECONOMY, TRADE AND INDUSTRY OF JAPAN (16.07.2009)

5. AGREEMENT BETWEEN THE GOVERNMENT OF MONGOLIA AND THE GOVERNMENT OF THE RUSSIAN FEDERATION ON ESTABLISHMENT OF “DORNOD URANIUM” LIMITED LIABILITY COMPANY (25.08.2009)



MEMORANDUM OF UNDERSTANDING

6. MEMORANDUM OF UNDERSTANDING BETWEEN THE NUCLEAR ENERGY AGENCY – REGULATORY AGENCY OF THE GOVERNMENT OF MONGOLIA AND THE DEPARTMENT OF ATOMIC ENERGY OF THE GOVERNMENT OF REPUBLIC OF INDIA ON COOPERATION IN THE FIELD OF PEACEFUL USE RADIOACTIVE MINERALS AND NUCLEAR ENERGY (14.09.2009)
7. MEMORANDUM OF UNDERSTANDING ON COOPERATION IN THE FIELD OF PEACEFUL USE RADIOACTIVE MINERALS AND THE NUCLEAR ENERGY BETWEEN NUCLEAR ENERGY AGENCY – REGULATORY AGENCY OF THE GOVERNMENT OF MONGOLIA AND THE AREVA GROUP, A COMPANY OF THE FRENCH REPUBLIC (05.10.2009)
8. MEMORANDUM OF UNDERSTANDING BETWEEN THE NUCLEAR ENERGY AGENCY OF MONGOLIA AND OF THE CHINESE NATIONAL NUCLEAR CORPORATION OF THE PEOPLE’S REPUBLIC OF CHINA ON COOPERATION IN THE FIELD USE RADIOACTIVE MINERALS AND NUCLEAR ENERGY (01.06.2010)

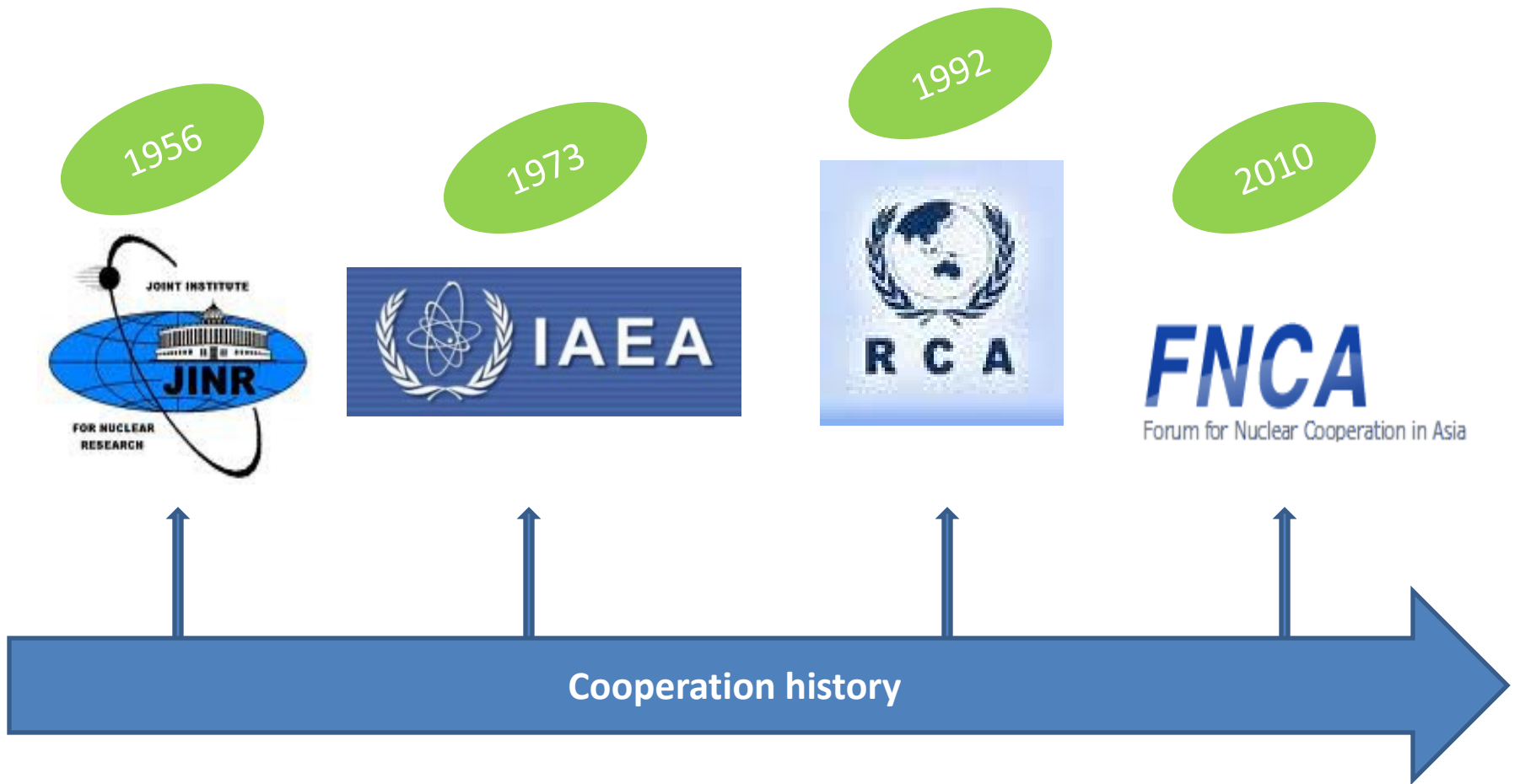


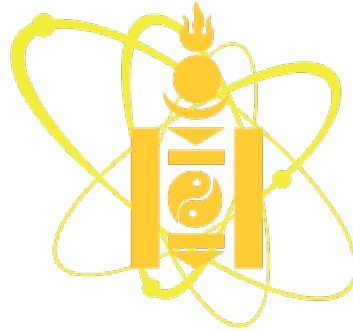
MEMORANDUM OF UNDERSTANDING

9. MEMORANDUM OF UNDERSTANDING BETWEEN THE GOVERNMENT OF MONGOLIA AND THE GOVERNMENT OF THE UNITED STATES OF AMERICA ON COOPERATION IN THE FIELD USE NUCLEAR ENERGY (22.09.2010)
10. AGREEMENT BETWEEN THE GOVERNMENT OF MONGOLIA AND THE GOVERNMENT OF THE FRENCH REPUBLIC ON COOPERATION IN THE FIELD USE NUCLEAR ENERGY (14.10.2010)
11. AGREEMENT ON PRINCIPAL PROVISIONS OF ESTABLISHING “DORNOD URAN” LIMITED LIABILITY JOINT COMPANY (14. DECEMBER, 2010)
12. MEMORANDUM OF UNDERSTANDING FOR COOPERATION BETWEEN THE NUCLEAR ENERGY AGENCY OF THE GOVERNMENT OF MONGOLIA AND THE MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY OF THE REPUBLIC OF KOREA CONCERNING PEACEFUL USES OF NUCLEAR ENERGY IN THE FIELD OF HUMAN RESOURCE DEVELOPMENT AND RESEARCH (24.03.2011).



INTERNATIONAL COOPERATION





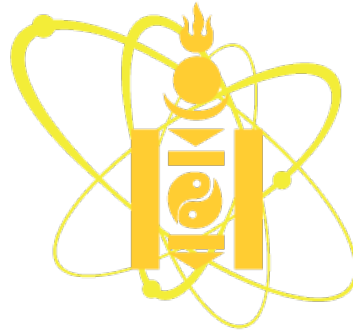
8. IMPEDIMENTS IN NUCLEAR POWER PROGRAMME



IMPEDIMENTS IN NUCLEAR ENERGY PROGRAMME

- PUBLIC AWARENESS
- THE GOVERNMENT POLICY AND COMMITMENTS
- ADVANTAGES IN RENEWABLE ENERGY SOURCES (COAL-RICH, VAST, SUNNY AND WINDY TERRITORY)
- FINANCING
- HUMAN RESOURCE
- NUCLEAR WASTE DISPOSAL
- SUITABLE TECHNOLOGY /COOLANT AND REACTOR TYPES/
- ENVIRONMENTAL PROTECTION /PUBLIC CONCERNS IN MINING/
- INDUSTRY DEVELOPMENT



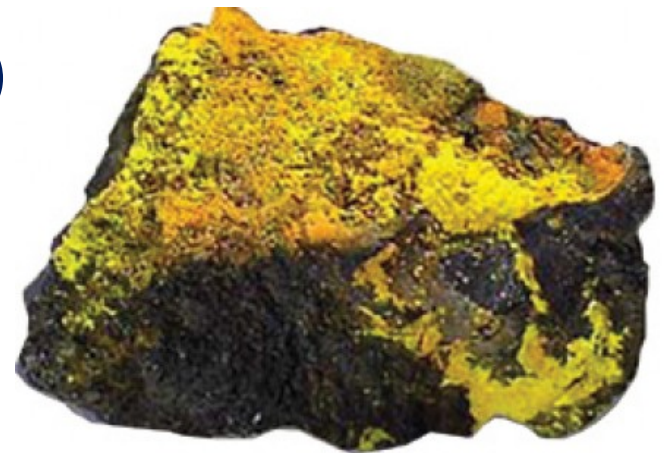


9. DRIVERS IN NUCLEAR POWER PROGRAMME



DRIVERS IN NUCLEAR ENERGY PROGRAMME /CONT.D/

- ENERGY DEMAND
- NECESSITY OF DIVERSIFICATION OF ENERGY SUPPLY OPTIONS
- REDUCTION OF GREEN GASES EMISSION
- URANIUM RESOURCE /RANKING 16TH IN THE WORLD/
68,500 (1% OF THE WORLD REVERSE) TONNES, CONFIRMED, AND 1,5 MILLION TONNES, HYPOTHETICAL RESOURCE
- SPARSELY POPULATED AND ENOUGH TERRITORY



DRIVERS IN NUCLEAR ENERGY PROGRAMME /CONT.D/



- **COGEGOBI (THE AREVA GROUP, THE FRENCH REPUBLIC)**
- **CNNC, THE PEOPLE'S REPUBLIC OF CHINA**
- **DENISON MINES (CANADA)**
- **"DORNOD URAN" JOINT LLC (THE RUSSIAN FEDERATION)**
- **IN TOTAL 16 FOREIGN COMPANIES IN URANIUM EXPLORATION**



THANK YOU FOR YOUR ATTENTION

