

THE NAMIBIAN URANIUM MINING MODEL

Voluntary sector initiatives underpinned by a regulatory safety net to ensure best practices.



Wotan Swiegers
Chairperson

Namibia Atomic Energy Board



NAMIBIA



Source: AREVA

Population Estimate:

- × 2.2 m (2008) 66% of population = rural
 - × Life expectancy: 50 yrs (2008)
 - × **Estimated 100,000 plus orphans**

Land use:

- × Area total: 825,418 sq km (Erongo 63,579 sq km) (
- × 44% commercial farmland (central, south)
 - × 41% communal areas (mainly in the north)
 - × 15% state land including conservation areas.

Economy:

- × Heavy reliance on capital intensive natural resource extraction



Mining Industry turnover:

N\$13.8b in 2007

Total value added (2007)N\$
5.5b – 12% of GDP



'VISION 2030 AND THE URANIUM RUSH'

The Namibian government issuance of licenses for prospecting and mining of uranium in the central Namib has two main purposes:

1. To encourage private sector investment that stimulates the economy and provides employment.
2. To earn income from levies from uranium exports, from company and personal taxes.

✓ **Mining licenses: 4**

✓ **EPLs: 66**

✓ **ERLs:3**

✓ **Most licenses in the Erongo region**

✓ **Moratorium on new prospecting licenses for uranium**

✓ **Namibia's uranium mines could contribute 14 % to world output**



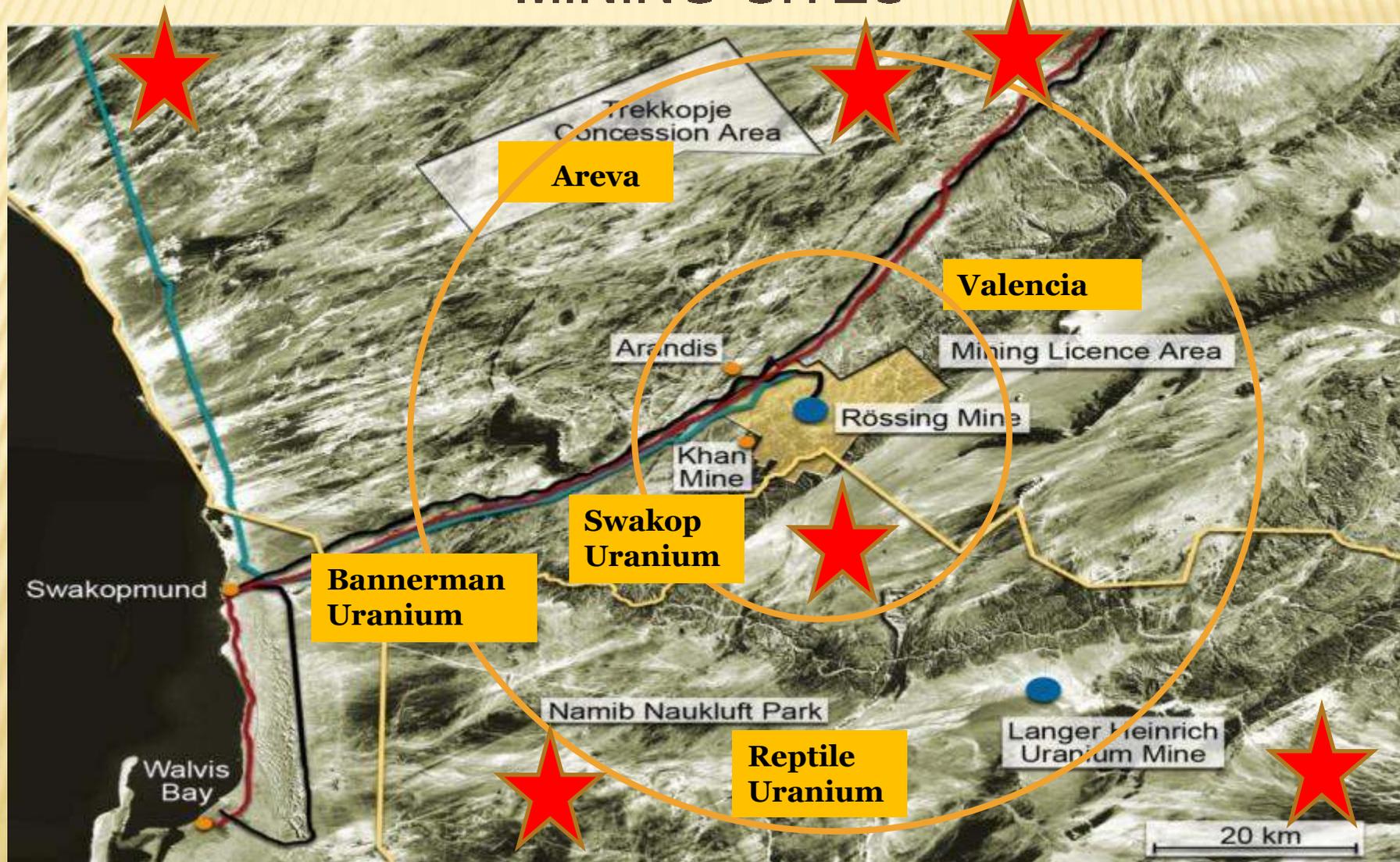


NAMIBIA



1. Beautiful ,democratic and politically stable country
2. Fourth largest producer of Uranium in the World
3. Two uranium producing Mines (Rio Tinto and Langer Heinrich)
4. Two emerging uranium producing Mines (Areva and Valencia)
5. Three “developing” uranium producing Mines (Swakop Uranium, Bannerman and Reptile Uranium)
6. Five “promising” uranium producing Mines

LOCATION OF URANIUM EXPLORATION AND MINING SITES



CUMULATIVE IMPACTS

Year	Estimated No. Employees
2007	2,200
2008	3,000
2011	5,000
2015	7,000

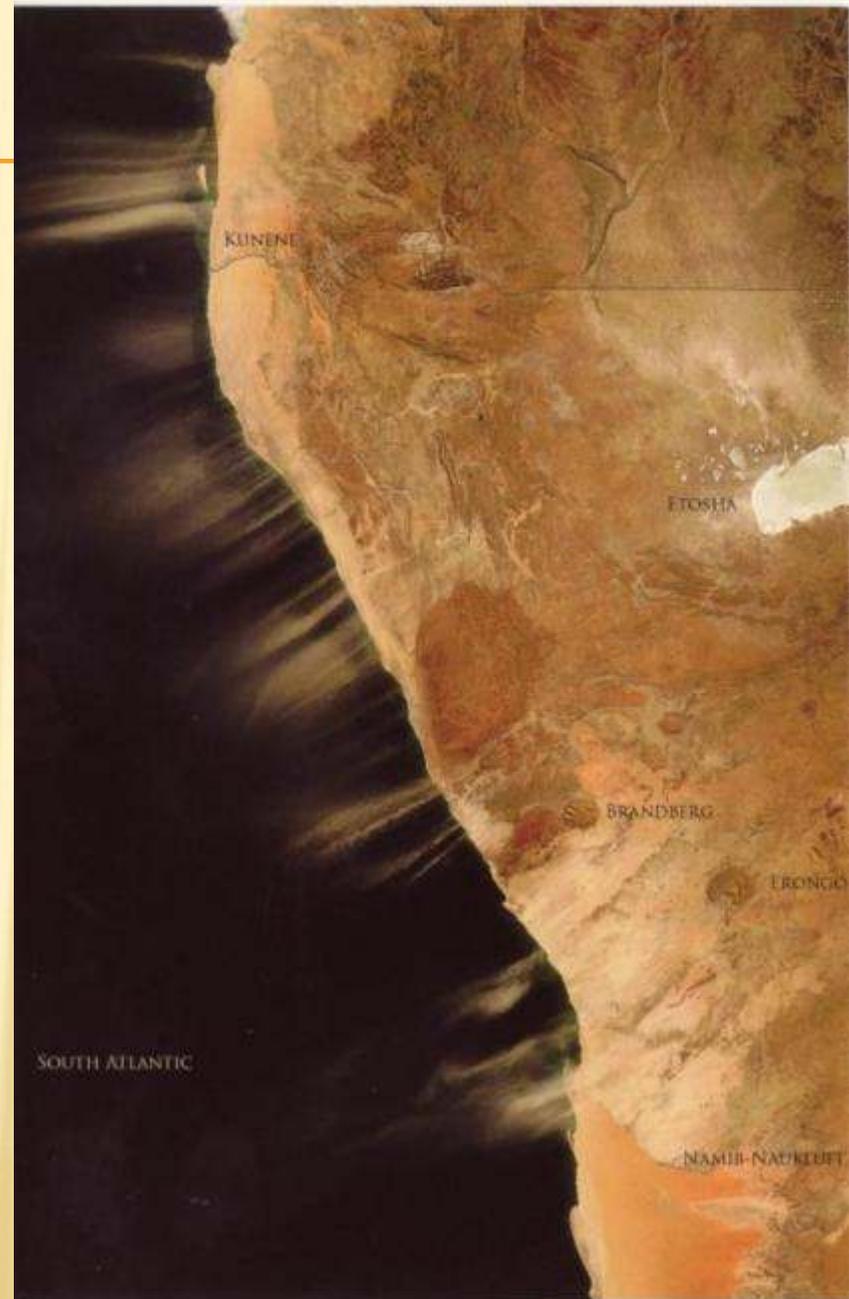
Year	Estimated No. Dependents
2007	8,000
2008	12,000
2011	20,000
2015	36,000

Year	Estimated Water required
2007	08 (Mm³/a)
2008	10 (Mm³/a)
2011	25 (Mm³/a)
2015	35 (Mm³/a)

Year	Estimated Power required
2007	45 MW
2008	50 MW
2011	100 MW
2015	150 MW

Cumulative environmental issues

1. Power (generation, distribution, consumption)
2. Water (supply, consumption, waste water management, groundwater protection)
3. Housing (regional and local town planning)
4. Social infrastructure (Health facilities, recreation facilities, schools)
5. Regional economy (subcontractors, tourism industry)
6. Transport infrastructure,
7. Ecological sensitivities of Namib environment
8. Landscape integrity of Namib Naukluft National Park and Erongo region
9. Mine closure and rehabilitation



Source: Terra MODIS, NASA Goddard Space Flight Center (2007)



THE CHAMBER OF MINES DECIDED TO:

- ✘ **Have open and transparent and ongoing public consultation.**
 - + Office in Swakopmund, regular meetings, communicate, share information , look for synergies and opportunities.

- ✘ **Establish collaborative fora.**
 - + USC-Uranium Stewardship Committee (CEO level)
 - + HERS- Health, Environment and Radiation Safety (communication platform)
 - + TAC's- Technical Advisory Committees and Working Groups

- ✘ **Identify issues and prepare a Strategy to mitigate or resolve problems**
 - + Strategic planning guidelines and impact monitoring

SPECIFIC CHALLENGES



✓ **Challenge = International**

- ✓ Protecting the Brand (best practices and legislation)

✓ **Challenge = National**

- ✓ Create harmony with competing and opposing forces (Public, Government, Mines, Tourism and Anti- Nuke)

- ✓ **Challenge = “Making it stick”** with the currency of ‘goodwill and synergy.’

“ Do not let what you cannot do, interfere with what you can do” John Wooden



PROTECTING THE BRAND



“ The market is never saturated with a good product, but it is quickly saturated with a bad one.”
Henry ford

Governance

- Constitutional Directive on the Management of the Environment for present and future generations (Art 95)
- Atomic Energy and Radiation Protection Act (5 of 2005)
- Environmental Management Act (7 of 2007)
- Labour Act (of 1992)- Health and Safety Regulations
- **Amendment to the Minerals Act** -force international companies to invest in a decommissioning fund



Co-regulation

Uranium Stewardship
Minimum Standards
SEA



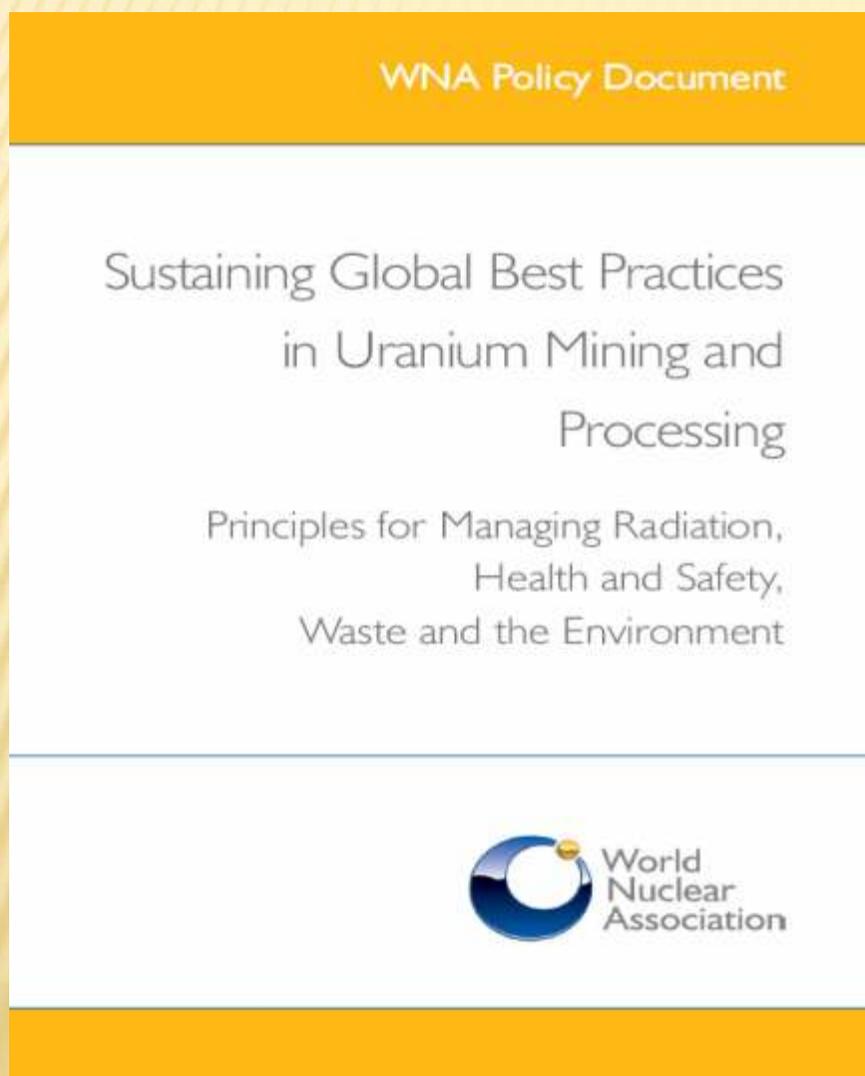
Source: Chris Johnson Photography (2008)



EIGHT CRITICAL STRATEGIES

1. To introduce the concept of **Uranium Stewardship**
2. To develop **Communication Platforms for Stakeholder participation (USC, HERS/TACS)**
3. To link listing on the **NSX to Membership of the Chamber** (discourage the mining of the NSX)
4. To accept the **Code of Conduct & Ethics** of the CoM (Uranium Exploration and Mining Companies)
5. To accept the **WNA “ Sustaining Global Best Practices for Uranium Guidelines for Uranium Mining and Milling”** as the Environmental Code of Conduct
6. To introduce Minimum **Environmental and Occupational Health Standards** for the Uranium Industry in Namibia
7. To **initiate and support a SEA** to ensure **Sustainable Development for the Uranium Industry in Namibia**
8. To assist the Namibian GRN to fast tract the **Namibian Environmental and Health Legislative Framework** (i.e. NNR/ AEB/ EMA-regulations)

SELF GOVERNANCE AND IMPLEMENTATION



The new WNA policy endorses:

- WNA Charter of Ethics
 - WNA Principles of Uranium Stewardship
 - ICMM SD Principles
- Compliance with applicable conventions, Acts, Guidelines..... including the IAEA Safety Principles
- In line with the **USC Minimum Standards** for Uranium Exploration and Mining in Namibia

USC Standards

GOOD PRACTICE

CHAMBER OF MINES OF NAMIBIA 2009

Action for a SAFER INDUSTRY

Minimum Environmental Health Standards
for the Uranium Industry in Namibia



The Chamber of Mines of Namibia

WHAT IS A SEA ?

A EM and planning tool - a process to improve strategic decision-making [upfront, big picture, not project-level]

SEA complements planning with:

knowledge of environment & poverty

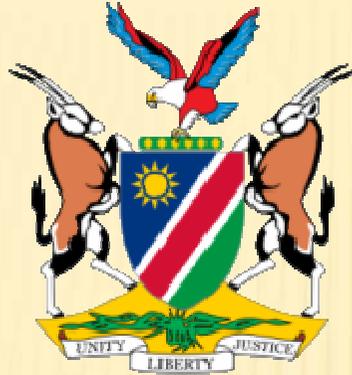
A solid **analysis** and **assessment** of environmental issues and their linkage with socio-economic issues

dialogue on these issues

a well structured public & government **debate**

influence: institutions & governance

A **mechanism** to take the results of assessment and debate into account



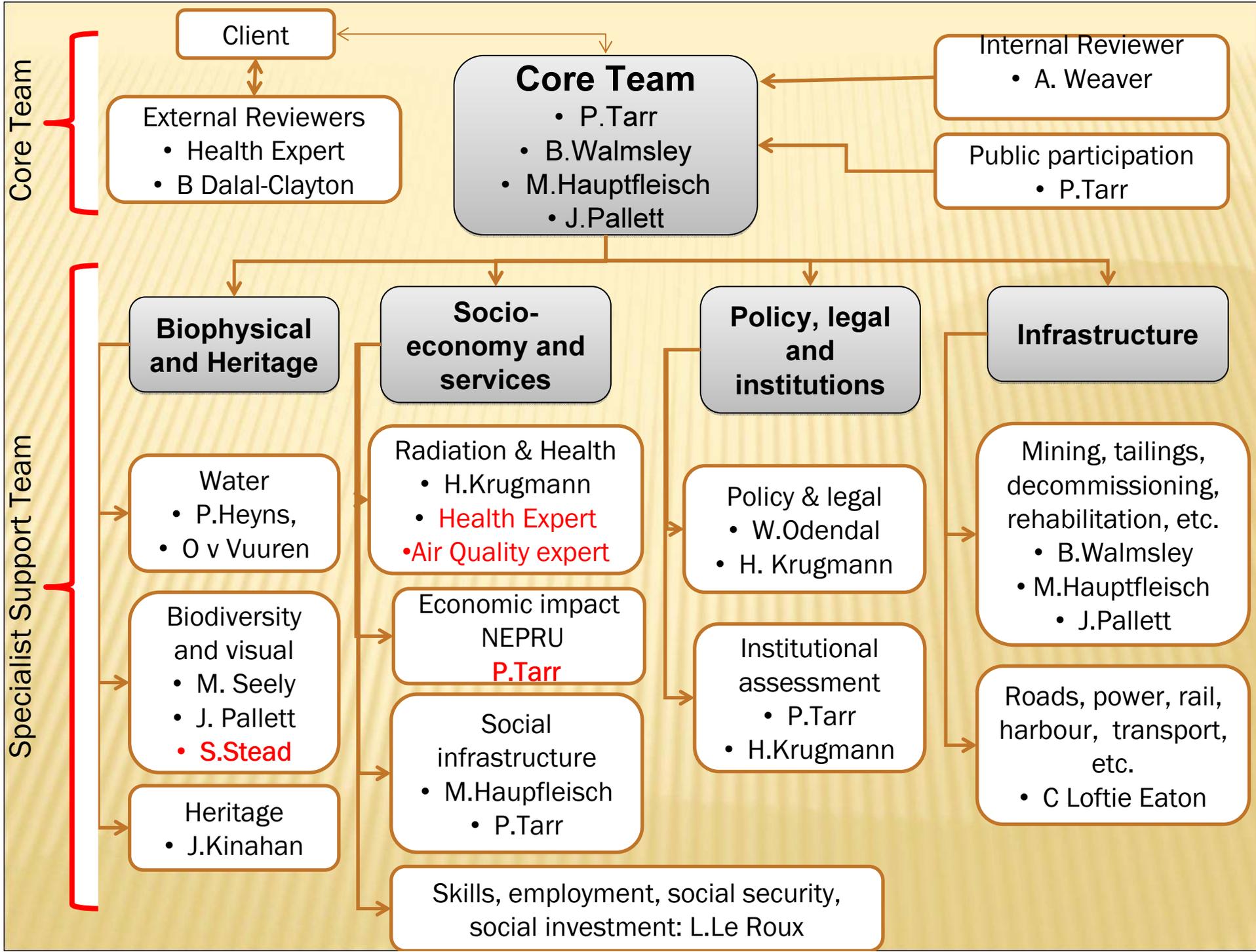
Ministry of Mines and Energy

Strategic Environmental Assessment (SEA) for Uranium Mining in Erongo Region



Geological Survey of Namibia (GSN)
Bundesanstalt für Geowissenschaften und Rohstoffe (BGR)





THEMATIC REPORTS PROGRESS

Theme	Percentage Completed	Previous expected completion Date	Expected completion date
Water	90	25 May 2009	10 July 2009
Biodiversity	70	25 May 2009	10 July 2009
Heritage	80	25 May 2009	10 July 2009
Radiation: sources pathways and exposure	70	25 May 2009	End June 2009
Macro-economics	25	25 May 2009	End July 2009
Social landscape	60	25 May 2009	10 July 2009
Mining	90	25 May 2009	15 July 2009
Physical infrastructure	70	25 May 2009	10 July 2009

THEMATIC REPORTS PROGRESS (2)

Theme	Percentage Completed	Previous Completion Date	Expected completion date
Health	10	25 May 2009	30 October 2009
Tourism	10	30 July 2009	
Visual and sense of place	50	New theme – de-link from Biodiversity, but no need for full theme report (mostly maps, but link to tourism)	30 July 2009

POLICY FRAMEWORK...

+USC Minimum Standards based on Rio Tinto Standards and Guidelines provided by the IAEA Namibian GRN and the WNA Working Groups



Chamber of Mines & WNA Charter of Ethics

International Council on Mining and Metals (ICMM): SD Principles

WNA Principles of Uranium Stewardship

USC Minimum Standards

IAEA Safety Fundamentals

GENERIC OR SPECIFIC COP

Principles -> national regulations -> sites



NAMIBIAN LEGAL FRAMEWORK

National Regulations and Radiation Management Plan

WNA Policy & USC Minimum Standards

Code of Practices: (generic or adapted to site specific conditions)

**Success depends on implementation by
competent operators**

**COP : Formulated from the WNA Policy and National
regulations**



NUCLEAR REGULATORY FRAMEWORK

- Constitution of the Republic of Namibia
- International Conventions/
Treaties
- Atomic Energy Act (5)2005

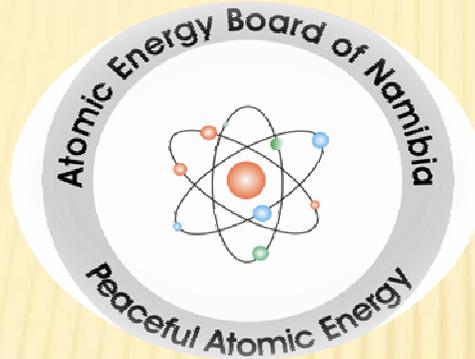
Regulations

- ❖ Regulations for Protection against Ionizing Radiation and For The Safety of Radiation Sources
- ❖ Regulations for Protection against Ionising Radiation in the Uranium Mining Sector
- ❖ License Conditions
- ❖ Supported by Policies, Standards and Guidelines
- Environmental Management Act (7) 2007

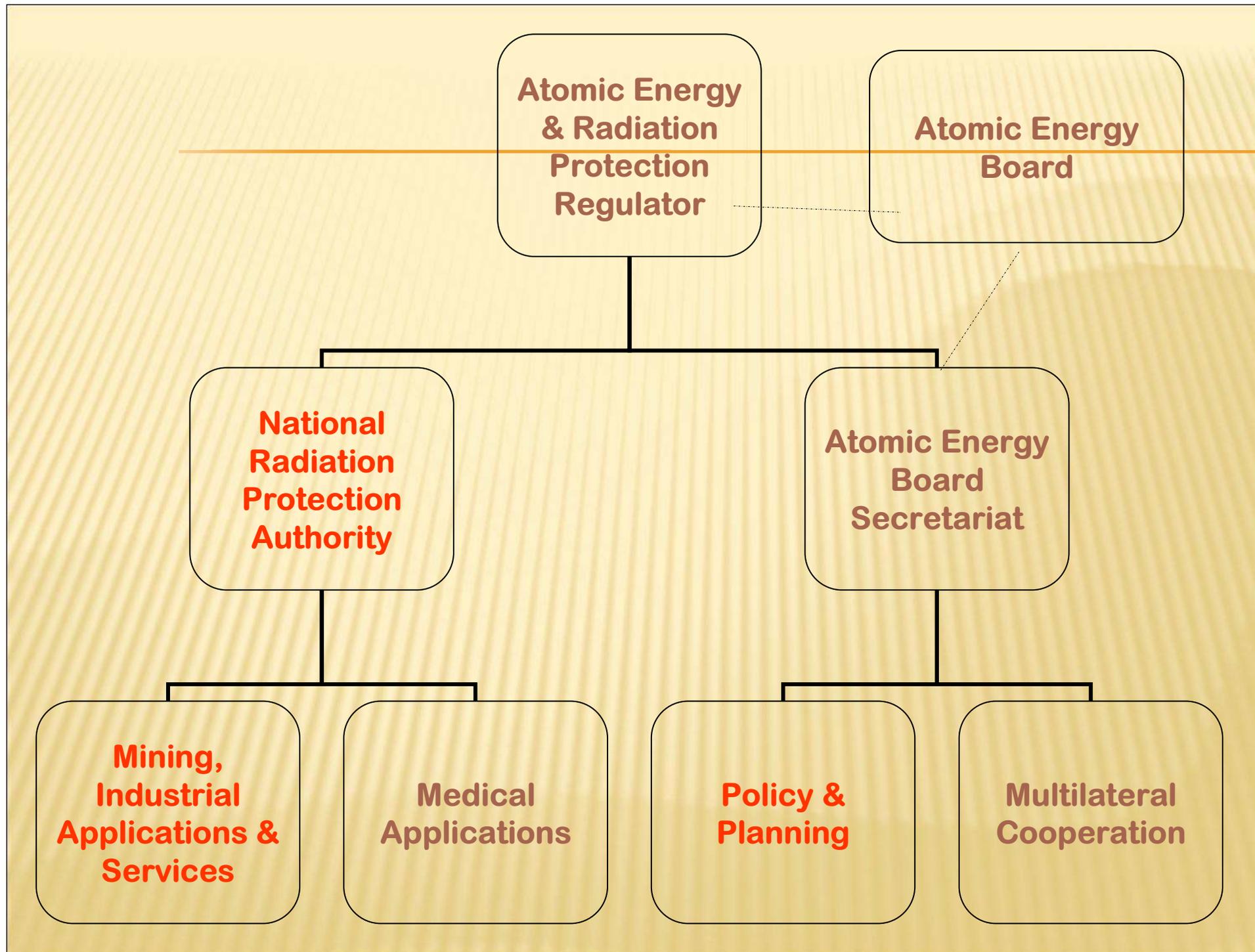
• **Licensees are responsible** for the protection of health, safety, security, and the environment and respecting Namibia's international commitments.

• The AEBN and the NNRA are **responsible for advising and enforcing** the regulating licensees, assessing whether licensees are compliant with the AEA 2005(5), regulations, and international obligations.

AEBN – “NAMIBIA’S NUCLEAR ADVISOR”



- ✘ Independent of, but not isolated from, government
 - ✘ Advises on all nuclear facilities and activities in Namibia to protect the health, safety and security of Namibians and the environment; as well as to ensure that Namibia meets its nuclear international obligations.

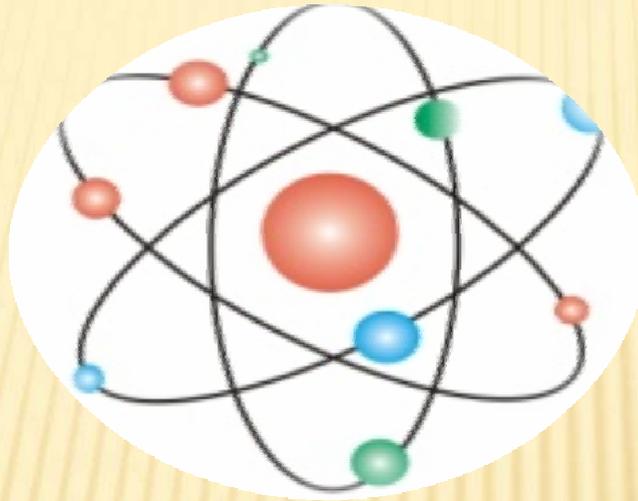


NUCLEAR POLICY ISSUES

1. Nuclear Safety & Security
2. Radiation & Waste Safety
3. Nuclear Power
4. Treaties/Conventions
5. Public Health
6. Agriculture and Food Security
7. Human Resource Development
8. National, Regional & International Cooperation

June 2009-Onwards

THE WAY FORWARD



Namibian Government, Atomic Energy Board, National Nuclear Regulator and the Operators.

To ensure Vision 2030 and to “protect the Namibian Uranium Brand”

TEN CRITICAL STRATEGIES



1. Roll out the Legislative control system (AEB/ NNRA/EMA)
2. Establish the Namibia National Regulatory Authority
3. Finalize the National Nuclear Energy Policy
4. Introduce the AERPA / EMA Regulations



1. Implement the Minimum Environmental and Occupational Health Standards and Best Practices for the Uranium Industry in Namibia
2. Continue to support for the SEA and the SEMP to ensure Sustainable Development for the Uranium Industry in Namibia
3. Implement the CoM's Mine Closure and Rehabilitation plan
4. Develop the Namibia Uranium Institute
5. Support independent and collaborative HERS research
6. Introduce an independent Audit system

THE INSTITUTIONAL RESPONSIBILITIES OF THE GOVERNMENT AND THE NATIONAL NUCLEAR REGULATOR

- ✓ • **The Independence Principle:** *the regulator must have the authority, capability, and resources to make safety decisions*
- ✓ • **The Continuous Control Principle:** *the regulator must have free and continued ability to monitor activities*
- ✓ • **The Transparency Principle:** *relevant information on uranium mining impact and use of nuclear energy, including incidents, is made available to the public.*
- ✓ • **The Compliance Principle:** *international obligations are reflected in national law and states act so as not to do harm to others*
- ✓ • **The International Co-operation Principle:** *maintain relationships with counterparts in other countries and international organizations.*

THE RESPONSIBILITY OF THE OPERATOR

- **The Responsibility Principle:** *the operator of the facility or the person licensed to mine uranium or who uses radio-active material bears the primary burden of ensuring that its operations and activities meet safety, security, and environmental protection requirements.*
- **The Permission Principle:** *the operator or licensee may only do that which is permitted.*
- **The Compensation Principle:** *the operator or licensee may bear responsibility in the compensation regime for nuclear related incidents/ accidents “the polluter pays”.*

NATIONAL NUCLEAR REGULATOR

× Status

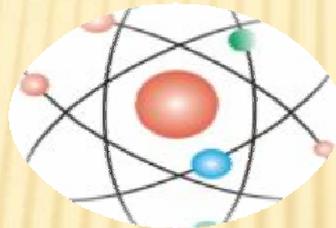
- × •Independent of operator or promotional agencies
- × •Has ability to carry out its functions
- × •Ability to report its findings
- × •Technical competence to carry out its mission
- × •Financial resources are provided
- × •Decisions may be reviewed, but not subject to arbitrary or extraneous considerations

× Duties and Powers

- × Standards setting
- × •Licensing or Permitting
- × •Inspection and monitoring
- × •Enforcement
- × •Coordination with other bodies
- × •Dissemination of information



The Chamber of Mines Namibia Uranium Institute (NUI)



Namibia's Leading Source of Advocacy
and Research on Uranium

"We are dedicated to the future of the Uranium Industry in Namibia"



The **NUI** (WNA)

Charter, Code of Practice, Principles of Uranium Stewardship and Environmental Health Standards provide firm, practical guidance for all companies in the Namibian Uranium industry, Members and non-Members.



NAMIBIA URANIUM INSTITUTE

Focus Areas

1. Ensure **Standards**-The UI assists with continuous improvement and implementation of best practice solutions in Health, Environment and Radiation Safety protocols
2. **Internal Audits**
3. **Research**- The UI sponsors independent and peer reviewed quality research related to the health of the uranium workforce via the Uranium Institute's collaborative Research Programme

Thank you for your attention



Source: AREVA