



REPORT  
2013-2014

# Responsible Development On AREVA's Mining Activities

Last update : 12/15/2014



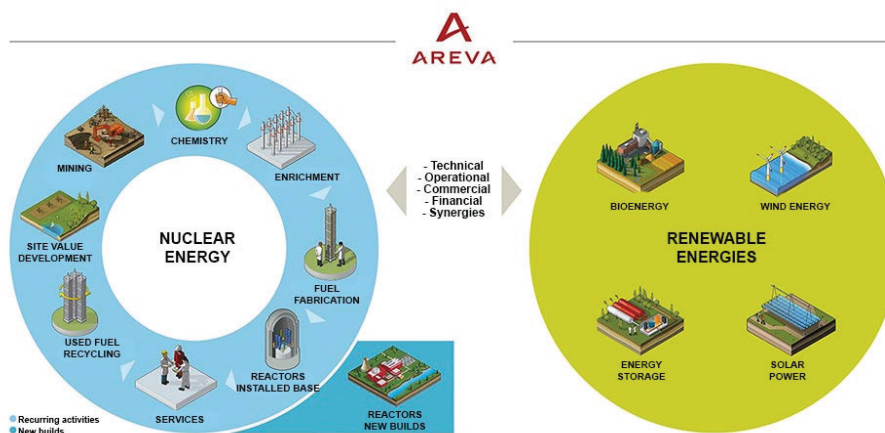
# CHAPTER PROFILE

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Extract from Responsible Development  
report 2013/2014 on Areva's Mining Activities

The complete report is downloadable on :  
[www.csr-mines.aveva.com](http://www.csr-mines.aveva.com)

## FIND OUT OUR ACTIVITIES



## AREVA Group

AREVA is a global leader in nuclear power. The group's unique integrated offering to utilities covers **every stage of the fuel cycle** and nuclear reactor design and construction, as well as related operating services. AREVA's expertise and unwavering insistence on **safety** set the standard within the sector.

The company is also investing in **renewable energy**, working in partnership to produce high-technology solutions.

## AREVA's approach to sustainable development

For more than 10 years, AREVA has made sustainable development a key part of the company's growth. The group's commitments in terms of social, environmental and societal responsibility, in conjunction with its **Values Charter**, contribute to the company's performance in terms of respecting human rights and our environment, in the broadest sense, as well as its compliance with the laws that protect them.

A high level of performance in the fields of nuclear and conventional safety can only be achieved through heightened **risk prevention**, via eco-design actions, the periodic re-evaluation of risk studies and analyses, and the development of a **good workplace safety culture**.

By harnessing technological solutions to produce energy with less CO<sub>2</sub>, the group aims to design, produce and market **safe, competitive equipment that respects the environment**. As energy is vital to global economic development, particularly in developing countries, and its production method represents a major challenge in **the fight against global warming**, AREVA is aware of its significant responsibilities to the planet's inhabitants and future generations.

AREVA has signed up to the UN Global Compact, the OECD Guidelines for Multinational Enterprises, the Extractive Industries Transparency Initiative (EITI) and the Nuclear Power Plant Exporters' Principles of Conduct published by the Carnegie Endowment.

AREVA's values, as given in the Values Charter, also show the responsibilities taken on by the group in its dealings with customers, shareholders and all stakeholders, whether they are directly or indirectly involved in group activities.

## AREVA's mining activities

Mining activities are **the first link in the nuclear fuel cycle** and in the integrated model of the AREVA Group. AREVA was one of the top producers worldwide in 2013, producing 9,330 metric tons of uranium (AREVA's financially consolidated share). The group works to maintain resources and weighted reserves equivalent to 20 years of production at all times.

Thanks to a presence **spanning five continents**, they ensure the long-term supply to customers of uranium for electricity production while maintaining a responsible attitude towards people and the environment. It has a diverse portfolio of both active mines (Canada, Kazakhstan and Niger) and mines under development (Africa).

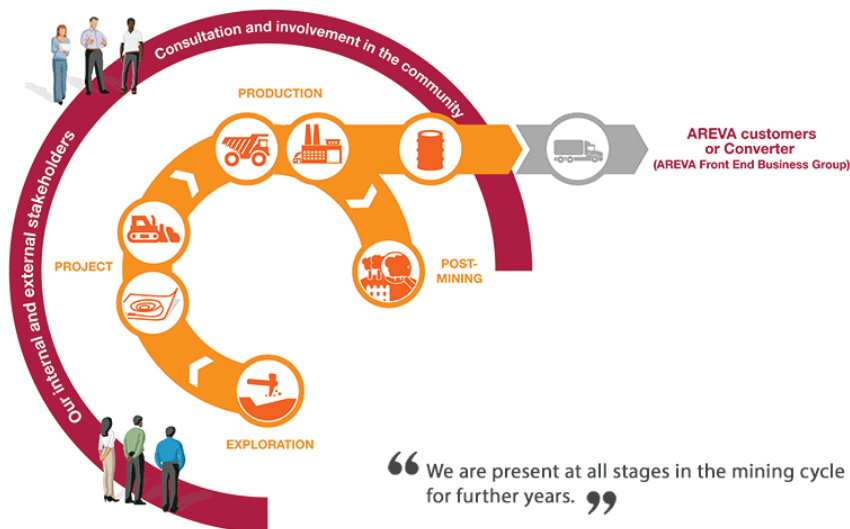


#### KEY FIGURES FOR 2013

- Revenue of **1 756 M€** (19% of AREVA group revenue) ;
- Present on **5** continents ;
- Almost **5,280** employees\* ;
- **4** operating sites (in 3 countries) ;
- **9 330** metric tons of uranium (AREVA's financially consolidated share) ;
- **15 %** worldwide market share.

\* All employees managed by AREVA (fixed-term + permanent contracts) without taking into account AREVA's financial participation in mining joint-ventures.

### The main steps in the mining cycle



#### ■ Exploration – 10 years in average

Exploration involves **finding new uranium deposits**. Prospecting is carried out in successive steps: geological study of the region, interpretation of aerial or satellite photos, geophysical techniques, ground radioactivity measurements and studies of soil and water chemistry.

#### ■ Mining project – from 8 to 12 years

The development phase **determines the technical, economic and environmental viability of a mining project**. It involves confirming the resources identified by geologists and characterizing the deposit and its ore. During this stage, the industrial pilot, which allows the extraction and ore-processing methods to be established, is set up. The infrastructures needed for mine operation are built. Studies are also performed to assess the societal and environmental impact of the project.

#### ■ Extraction and processing – from 12 to 50 years

Ore is extracted from open-pit or underground mines, or using in situ recovery. AREVA's mining experts also regularly test and apply **innovative techniques**, which improve the performance of existing operations and increase personnel safety.

The uranium ore is processed into a solid concentrate referred to as **"yellow cake"** (due to its appearance and color). The main ore processing operations include crushing and grinding, dissolving, purification and concentration.

#### ■ Post-mining: closure, rehabilitation and monitoring - more than 10 years

This stage covers the **dismantling, rehabilitation and revegetation of mining sites at the end of operation**, in strict compliance with the environmental regulations in force and in consultation with local populations. AREVA also performs radiological and environmental monitoring at these sites for at least 10 years.



APRIL 2013

### AREVA MAKES A COMMITMENT TO IMPROVING FOOD SECURITY IN NIGER WITH THE IRHAZER PROJECT

AREVA signed a financing agreement for the pilot phase of the IRHAZER project with the Nigerien Minister for Planning and Territorial Development. The project aims to improve food security in the country by developing irrigation systems in desert areas.



SOMAÏR

MAY 2013

### ATTACK ON SOMAÏR INDUSTRIAL FACILITIES IN NIGER

On May 23, 2013, the Somaïr mine in Niger was hit by a terrorist attack that killed one and left 14 injured. Although the damage brought production to a halt, the mine was able to re-open in August 2013 thanks to the teams' hard work.



MAY 2013

### COLLABORATION AGREEMENT SIGNED WITH THE ENGLISH RIVER FIRST NATION IN CANADA

AREVA Resources Canada, Cameco Corporation and the English River First Nation (ERFN) signed a collaboration agreement aiming to strengthen relations between the parties and formalize the economic benefits received by the community from mining activities.



JUNE 2013

### MONGOLIAN MINES MINISTER VISITS AREVA SITE IN MONGOLIA

Local populations, industrial players and Mines Minister Davajav Gankhuyag and his delegation visited the Dulaan Uul site. The delegation was able to learn about the activities carried out there by AREVA as part of its mining project and better understand the measures taken to protect people and the environment.



SEPTEMBER 2013

### MONGOLIAN DELEGATION VISITS OUR BESSINES-SUR-GARTEMPE SITE IN FRANCE

The Bessines industrial site in France welcomed a Mongolian delegation comprising top officials from the NEA (the country's nuclear safety authority) and MON-ATOM (the state-owned nuclear company), as well as Mongolian journalists. The visit aimed to introduce participants to AREVA's post-mining activities and French environmental protection policy.



SEPTEMBER 2013

### NIGERIEN PARLIAMENTARY DELEGATION VISITS NIGER MINING SITES

Three Nigerien members of parliament, part of the Nigerien parliamentary network for the World Trade Organization, visited the SOMAÏR, COMINAK and IMOURAREN SA mining sites. The meeting was an opportunity to openly discuss various issues such as site protection, social responsibility, post-mining activities and uranium routing, among others.



SEPTEMBER 2013

## "OUR RESPONSIBILITY" INITIATIVE PRESENTED TO EMPLOYEES

A meeting between Mining BG employees and management took place in September on the subject of company responsibility and the Responsible Commitments Plan. These "Major Meetings" are organized three times a year and provide valuable space for management committee members and employees to share views on performance and other company issues.



OCTOBER 2013

## AREVA SETS UP JOINT VENTURE TO DEVELOP URANIUM MINES IN MONGOLIA

AREVA, together with Mongolian state-owned company MON-ATOM, signed the shareholders' agreement for AREVA Mines LLC, in which AREVA holds a 66% stake and MON-ATOM a 34% stake. AREVA Mines LLC is to develop the Dulaan Uul and Zoovch Ovoo deposits in the south-east of the country. An agreement on Mitsubishi Corporation holding an equity interest was also signed.



OCTOBER 2013

## LIBERATION OF DANIEL LARRIBE, THIERRY DOL, MARC FÉRET AND PIERRE LEGRAND

On October 29, 2013, AREVA announced with great joy that AREVA employee Daniel Larribe and Vinci group employees Thierry Dol, Marc Féret and Pierre Legrand had been released. The four French citizens had been held hostage since their kidnapping at Arlit in Niger on September 16, 2010.



DECEMBER 2013

## AREVA-OXFAM MEETING ON NIGER

AREVA met with representatives from OXFAM in order to establish dialogue with the NGO and gain a better understanding of the views it has expressed with regard to mining activities in Niger. AREVA presented facts and figures that objectively showed the economic and environmental conditions under which uranium ore mining operations are carried out in the country. The group once again expressed its desire to establish a frank and impartial dialogue and the meeting provided an opportunity for the parties to exchange views on the issue.

GLOBAL PRESENCE



**NIGER**

- OFFICES
- MINING PROJECT
- OPERATING MINE

**GABON**

- OFFICES
- EXPLORATION
- REHABILITATED MINE

**NAMIBIA**

- OFFICES
- MINING PROJECT
- DESALINATION PLANT

**KAZAKHSTAN**

- OFFICES
- EXPLORATION
- OPERATING MINE

**CANADA**

- EXPLORATION
- MINING PROJECT
- OPERATING MINE
- REHABILITATED MINE
- OFFICES
- TREATMENT PLANT

**FRANCE**

- REHABILITATED MINE
- OFFICES

**MONGOLIA**

- OFFICES
- EXPLORATION

**AUSTRALIA**

- EXPLORATION

## ■ UPDATE ON OUR ACTIVITIES IN 2013

### Australia

Progress continues to be made with regard to the exploration work launched under a partnership with Mitsubishi Corporation at the start of 2012.



### Canada

AREVA production in Canada comes from the McArthur River mine, operated by Cameco Corporation. A second deposit, Cigar Lake (also operated by Cameco Corporation) entered production in March 2014. These sites are located around 700 km north of Saskatoon (Saskatchewan province).



In this uranium-rich province, as well as in the province of Nunavut, AREVA is leading major exploration efforts and also holds majority interests in several deposits:

- McClean Lake (70% interest)
- Shea Creek (51% interest)
- Midwest (69.15% interest)
- Kiggavik (64.8% interest), for which the final environmental impact study is due to be submitted in 2014.

These deposits require further study, and the rate at which they are developed will depend on the price of uranium. To date, the price is not high enough to justify development.

#### ■ Cigar Lake

Cigar Lake is held by a joint venture comprising Cameco Corporation, AREVA, Idemitsu Uranium Exploration Canada Ltd and TEPCO Resources Inc.

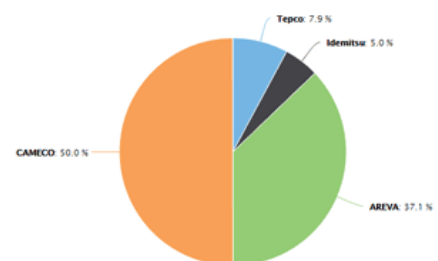
This deposit, operated by Cameco, is the second largest uranium deposit in the world after McArthur River.

AREVA discovered the deposit in 1981, then contributed to the development of the operating method used.

Given the deposit's location 450 meters beneath fractured, porous and water-saturated rock, and its high content, the deposit cannot be mined using conventional methods. However, freezing techniques make it possible to strengthen the ground and avoid water inflow. The mining method selected then involves breaking up the ore using a high-pressure jet - a technique known as jet boring. The infrastructure galleries (equipment, boreholes for freezing and jet boring) are all located in the stronger rocks under the deposit.

**At full capacity, Cigar Lake is expected to produce 6,900 tU/year (18 million lbs of U<sub>3</sub>O<sub>8</sub>). The first shipment of ore from Cigar Lake to the JEB plant took place in March 2014.**

Composition of the Cigar Lake joint venture





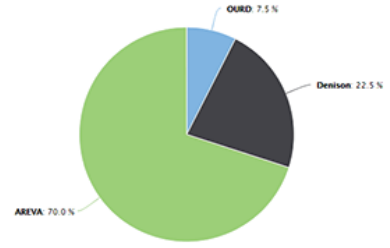
■ **McClellan Lake**

AREVA has a 70% ownership and operating stake in McClellan Lake, and its partners are Denison Mines Ltd and Ourd (Overseas Uranium Resources Development Company Ltd, Japan).

Uranium production from the McClellan Lake deposit (open-pit mines) began in 1995, with the production of concentrate in the McClellan Lake JEB plant beginning in 1999. Mining extraction was halted at the start of 2009 and the plant mothballed in 2010.

The plant, which is able to process very high content ore (>15 %) without diluting it, has a capacity of 4,600 tU/year (12 million lbs of U<sub>3</sub>O<sub>8</sub>). Capacity is currently being expanded to enable it to receive 100% of the Cigar Lake ore. Following an agreement signed in 2011 by the Cigar Lake and McClellan Lake partners, the JEB plant will process all ore from Cigar Lake when it comes back online at the end of the second quarter of 2014.

Composition of the McClellan Lake joint venture



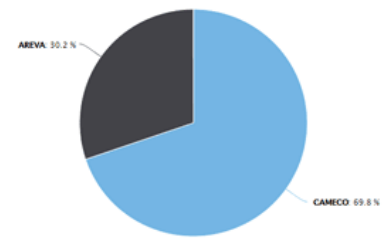
■ **McArthur River**

McArthur River is operated by Cameco Corporation as a joint venture (AREVA share: 30.2%). It is the largest uranium deposit in the world.

It was discovered in 1988 and extraction began in December 1999. As the deposit is high-content and located 600 meters below the surface near fractured, porous and water-saturated rock, it cannot be mined using conventional methods. Special mechanical operating methods (raise-boring) ensure that miners do not come into direct contact with the ore, and the ground is frozen to prevent water inflow. The ore extracted is processed in the Key Lake plant, around 80 km south of the deposit.

**This plant is run by Cameco Corporation, which holds an 83.3% share, while AREVA holds the remaining 16.7%. McArthur Lake and Key Lake have a capacity of 7,200 tU/year (18.7 million lbs of U<sub>3</sub>O<sub>8</sub>).**

Composition of the McArthur River joint venture



**France**

In France, the main activities are running the head office and managing rehabilitated sites.

**Currently, 235 sites are under the responsibility of AREVA Mines, which manages the CEA's uranium mine liabilities and successive acquisitions from Total and Imetal.**



Overall, 246 sites were in operation between 1948 and 2001. Of these, 115 were operated by CEA/COGEMA, with Jouac, the last mine, closing in 2001. Private companies ran the other 131 sites. Site activities concern include exploration work, underground and open-pit mines, dismantled ore processing plants and 17 storage areas for the processing products from these plants.

**Gabon**

During the partnership between AREVA and Gabon, which spans a period of some 50 years, five deposits have been mined in the Franceville basin. Further projects have been initiated since 2006. Today, the group is carrying out uranium exploration campaigns in Gabon through its subsidiary, AREVA Gabon. If significant discoveries are made, the group may once again mine uranium deposits in the country.



The Ministry of Mining in Gabon authorized AREVA to restart uranium prospecting activities in Gabon at the end of 2006. **Following early positive results, AREVA created the wholly-owned subsidiary AREVA Gabon, which is headquartered in Franceville in the Haut-Ogooué province.**

The company was granted four Mining Exploration Permits to carry out prospecting work in the most promising areas: Mopia, Andjogo, Lekabi and N'Goutou. At the same time, COMUF and AREVA Gabon signed an agreement authorizing the latter to conduct exploration work at the Francevillian mining concession held by the CEA and leased to COMUF, which is where the Bagombé, Mikouloungou, Ndzali and Mbersé deposits are located.

## Kazakhstan

The company Katco, whose head office is located in Almaty, was set up in 1997 with a view to mining and developing the Muyunkum and Tortkuduk deposits in southern Kazakhstan, around 250 km north of Chymkent.

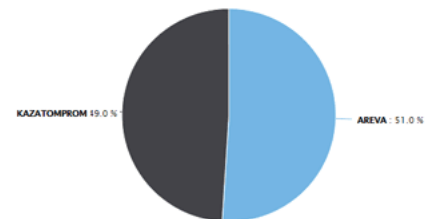


**The shareholders are AREVA (51%) and the Kazakh company Kazatomprom (49%), the national producer of natural uranium.**

Industrial development of these two sites, around 60 kilometers apart, began in April 2004 when agreements were signed by the two shareholders. The technique selected was in situ recovery, in which the uranium is dissolved directly inside the rock.

**In 2008, Katco obtained permission to increase production to 4,000 tU/year, this objective was reached in 2013, taking into account a work-in-progress volume of 447 metric tons of uranium.**

Composition of the KATCO joint venture



## Mongolia

For more than 15 years, AREVA has been successfully carrying out mining exploration operations at two sites in the Dornogobi region (where inferred resources were discovered in 2011 and 2013): Dulaan Uul (Sainshand basin) and Zoovch Ovoo.



**All future mining project and operating functions will be grouped under AREVA Mines LLC, in which MON-ATOM (a state-owned company managed by the Mongolian State Property Committee) holds a 34% interest, in accordance with Mongolian nuclear energy law.**

In August 2011, following successful in situ recovery testing, an operating license was requested for Dulaan Uul. AREVA is currently evaluating the mining project alongside its partners. In the Zoovch Ovoo area, AREVA is performing the studies needed to confirm the economic, technical and environmental viability of the project and establish the most suitable operating procedure. It will then set up a pilot operating system.

## Namibia

Trekkopje is a deposit in Namibia that has been wholly owned by AREVA since its acquisition in 2007. A pilot phase, with total production of 437 tU over 2012-2013, demonstrated the reliability of the technical solutions selected and confirmed the production cost objectives.



However, a deterioration in uranium market conditions led to the group mothballing the project in October 2012.

## Niger

In Niger, the presence of uranium was demonstrated by CEA exploration teams at the end of the 1950s. The uranium-rich area is located west of the Aïr granite massif. Almost 2,500 people work at Somaïr and Cominak. Not only do the operating companies bring employment, they also provide healthcare facilities as well as social and educational support to the local population in this isolated region.

Cominak and Somaïr have been delivering an uninterrupted supply of uranium to their customers since they entered operation in the 1970s.

More recently, AREVA launched the Imouraren project, which concerns one of the largest uranium deposits in the world (174,196 tU of reserves with a content of 700 ppm).



### TO GO FURTHER

#### Signature of a strategic partnership agreement between the State of Niger and AREVA

On May 26, 2014, in Niamey, Messrs. Omar Hamidou Tchania, Minister of State, Minister of Mines and Industrial Development of Niger, Gilles Baillet, Minister of Finance of Niger, and Luc Oursel, President and Chief Executive Officer of AREVA, signed an agreement renewing the strategic partnership between the State of Niger and AREVA.

The agreement enshrines the renewal of the mining contracts held by the companies SOMAÏR and COMINAK in the framework of the Nigerien Mining Law of 2006. The two parties to the agreement will take the necessary measures to ensure the financial and economic profitability of these ventures and to prioritize the preservation of jobs.

The State of Niger and AREVA have agreed to appoint Managing Directors of Nigerien nationality to the boards of SOMAÏR and COMINAK, in 2014 and 2016 respectively, which represents a major step forward for Niger in terms of its involvement in the governance of these companies.

With current uranium prices not sufficient to allow profitable operation of the Imouraren deposit, the State of Niger and AREVA will set up a joint strategic committee which will take a decision on the schedule for the start of mining of the deposit depending on changes in the market.

AREVA will provide its financial support for local development and infrastructure projects:

- funding for the Tahoua-Arlit route amounting to 90 million euros (approx. 60 billion CFA francs);
- the construction of a building worth 10 million euros (6.5 billion CFA francs) to house the mining companies, and which shall be the property of Niger;
- measures to accelerate the development of the Irhazer valley worth 17 million euros (11 billion CFA francs).

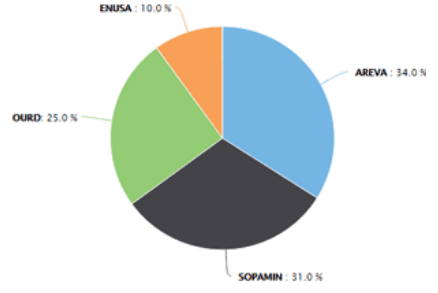
■ COMINAK

Cominak (Compagnie Minière d'Akouta) is 34% owned by operator AREVA, with SOPAMIN (Niger) holding a 31% stake, Ourd a 25% stake and Enusa (Enusa Industrias Avanzadas SA, Spain) a 10% stake.

The ore is extracted from an underground mine before being processed at the site plant to produce around 1,500 tU/year (3.9 million lbs of U<sub>3</sub>O<sub>8</sub>).



Composition of the COMINAK joint venture



■ IMOURAREN

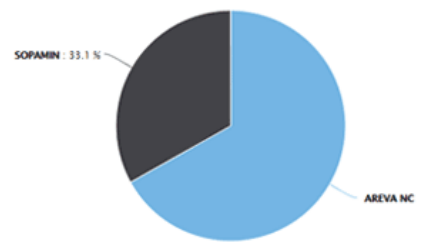
The deposit, located 80 km south of Arlit, was discovered in 1966. The feasibility study was completed in December 2007 and submitted in April 2008. At the start of January 2009, AREVA obtained a mining license for the deposit.

The Imouraren SA mining company was established, with AREVA NC Expansion (86.5% AREVA, 13.5% Kepco/KHNP) holding a 66.65% interest and Sopamin (Niger) holding the remaining 33.35%.

Mining at the site has been put on hold until market conditions are suitable.



Composition of the IMOURAREN SA joint venture



■ SOMAÏR

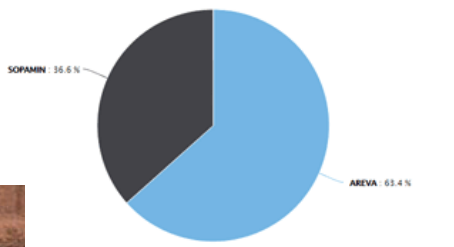
Somaïr (Société des mines de l'Aïr) was created in 1968. Operator AREVA holds a 63.4% stake in the company while SOPAMIN (Société du Patrimoine des Mines du Niger) holds a 36.6% stake.

Since 1971, Somaïr has been mining several uranium deposits near the town of Arlit. The ore is extracted from open-pit mines and processed using either heap leaching or dynamic processing in the front end process at the Arlit plant.

In both cases, the uranium solutions are then processed in the plant's back end process, the capacity of which reached 3,000 tU/year in the year 2011 (7.8 million lbs of U<sub>3</sub>O<sub>8</sub>).



Composition of the SOMAIR joint venture



On May 28, 2013, the Somaïr facilities in Niger were hit by a terrorist attack that killed one and left 14 injured. Thanks to the mobilization of all Somaïr employees however, production was able to restart in August, so successfully that just 270 tU of production were lost.

## ■ FIND OUT MORE ABOUT AREVA

On 31<sup>st</sup> December 2013, the AREVA group is a business corporation with Supervisory Board and Executive Board (Société Anonyme à Conseil de Surveillance et Directoire). The role of the Supervisory Board is to continuously oversee the Executive Board's management of AREVA. Another notable task performed by the Supervisory Board is to review the group's general strategy.



The group is organized to support our goal of **becoming the leader in solutions for low-carbon power generation**. Based on the principle of subsidiarity, the management system combines decision-making and decentralized operations through the operational departments and global coordination by coordination and steering committees.

**The Executive Board and the committees** set up to support it are thereby responsible for supervising and driving the group's operations, which are divided among five Business Groups and the cross-departmental Engineering and Projects organization.

The functional departments are responsible for supporting the Executive Board and the operating divisions in achieving their objectives. **The regional departments**, meanwhile, were set up in response to the group's significant industrial presence internationally and its desire for close contact with customers.

## ■ THE MINING BUSINESS GROUP WITHIN AREVA

"AREVA Mines SA" and "mining operations" internationally and in France make up the Mining Business Group.

Since April 1, 2012, **Olivier Wantz, member of the Executive Board of AREVA**, has held the position of Senior Executive Vice President of the Mining Business Group. He heads the Mining Business Group Management Committee, which brings together the operational directors and support function directors involved in mining activities.

### Board of Directors

**AREVA Mines is a business corporation with Board of Directors** (Société Anonyme avec Conseil d'Administration). Its primary function is to ensure operational consistency in mining activities carried out in France and internationally. It has a share capital of 25,207,343 euros and AREVA SA holds a 99.99% stake in the company, with the remaining 0.01% held by the CEA.

AREVA Mines SA has **two sites in France**: the head office at the Tour AREVA (Courbevoie) and the Bessines-sur-Gartempe industrial site (Limousin). AREVA Mines SA is managed by Olivier Wantz, its Chairman and Chief Executive Officer.

The organization, operation and prerogatives of the Board of Directors are set by the statutes. The Board of Directors meets at least twice a year. It decides how the company orients its activities and ensures their implementation.

**The Board of Directors comprises 13 administrators:**

- five appointed at the proposal of AREVA,
- two appointed at the proposal of the CEA (French Alternative Energies and Atomic Energy Commission),
- three state representatives,
- and three elected staff representatives (first election held in February 2013).

**A state inspector and a government auditor** also attend board meetings, along with the secretary of the Group Employee Council.

According to the statutes, the Chairman is an executive director and has no right to veto. No compensation and no benefits are paid to the executive officers by companies controlled by AREVA Mines SA.

## Management Committee

The Mining Business Group is run according to a decentralized operating model, based around a head office that performs overall management and oversight functions, and structures that carry out mining operations in France and internationally. "Mining operations" covers exploration, project, production, rehabilitation and post-mine monitoring activities.

The Management Committee meets regularly in order to study safety, industrial and financial results as well as to draw up and monitor mining activity action plans.

It also ensures that the AREVA Values Charter is respected, in addition to the company's commitments to sustainable development, and leads the risk management process for the Mining Business Group.

The Management Committee is made up of directors from the operational departments (Geoscience, Expertise and Projects, and Safety and Community Involvement) and the functional departments (Human Resources, Communications, Finance, Legal, Strategy and Development).

Around twice a year, during the "Executive Management Days", the Management Committee is extended to include the directors of foreign subsidiaries and site directors in France.

## Safety Committee

On September 1, 2013, in line with AREVA's Occupational Health and Safety Policy and as part of the associated Mining Business Group Roadmap, a Safety Committee was set up. It is made up of members of the Mining Business Group Management Committee, Site Directors and the Safety Team. It is chaired by Olivier Wantz.

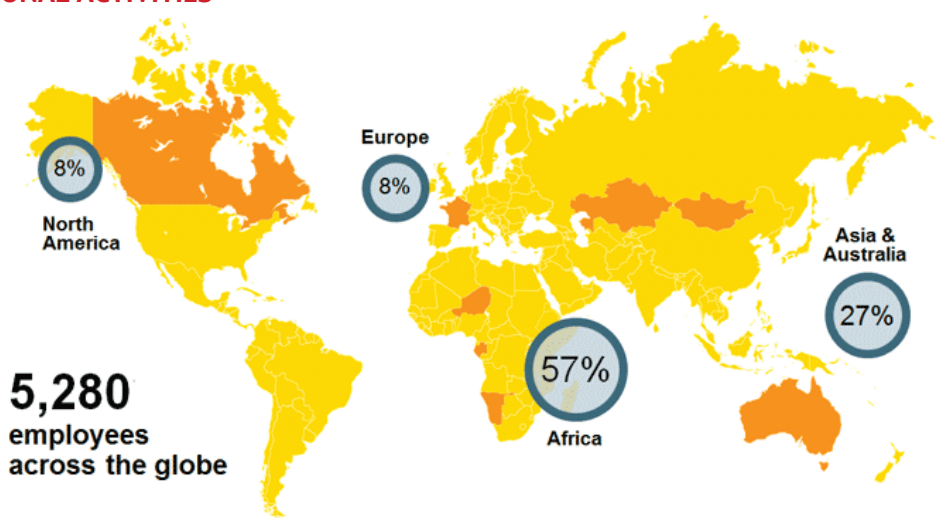
Its aim is to promote a safety culture within mining operations, establish and validate related objectives and ensure that the group's Health and Safety Policy is respected, along with its associated commitments.

## Staff representative bodies

AREVA Mines' Human Resources Policy, in accordance with current regulations, is based on the principles of discussion and consultation. A responsible social dialog, one that is both constructive and innovative, is considered to be a vital element in the healthy running of the company.

Agreements are regularly signed with staff representatives. In March 2012, a new agreement mechanism was signed by AREVA Mines management and union organizations. It was the result of several months of joint work by management and labor representatives.

## INTERNATIONAL ACTIVITIES



% distribution of employees

AREVA has a diverse assets and resources portfolio, which constitutes an important security factor for utilities seeking long-term guarantees with regard to uranium supplies.

Mining employees are present on five continents. There are uranium production sites in three countries: Canada, Niger and Kazakhstan.

## URANIUM MARKET IN 2013

In a post-Fukushima context, and in spite of a slow-down in the growth of demand, AREVA is keen to remain a key natural uranium supplier



Its objective is to continue to optimize the competitiveness of existing sites, start production at the mines currently under construction and develop its project portfolio by conducting the necessary studies. However, AREVA will only launch major investments if sales prices rise sustainably.

**In this way, AREVA aims to consolidate its position on the uranium market while remaining one of the most competitive producers.**

### Market and competitive position

**Reactor requirements** stood at around 65,000 tU in 2013 (gross demand expressed in natural uranium equivalent, source: WNA 2013), down:

- since the Fukushima accident,
- due to the shutdown of Japanese and German reactors and the closure of some reactors in the US,
- and despite confirmation of numerous new nuclear programs (e.g. in the United Kingdom, China, South Korea, Russia and the United Arab Emirates).

#### The offer comprises:

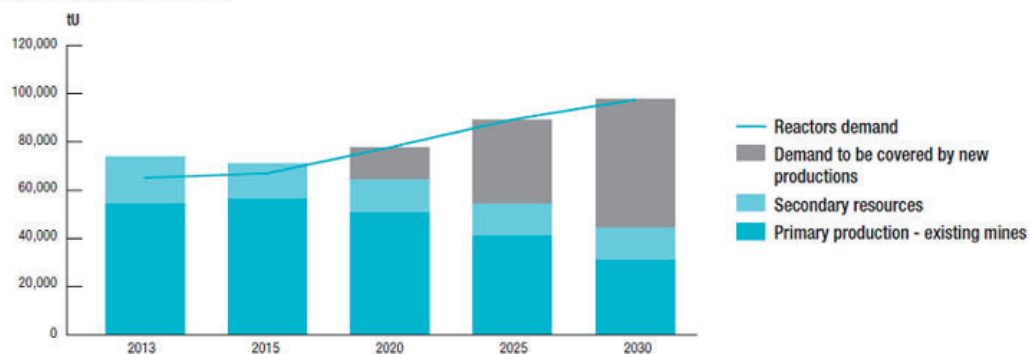
- secondary resources constituting uranium from the dismantling of Russian and US military arsenals (*Highly Enriched Uranium*, or HEU), materials from the recycling of spent fuel, the arrival on the market of DOE uranium stocks, the re-enrichment of depleted uranium and uranium from under-feeding (the volumes of which increased in 2013);
- mining production, which has stabilized at around 59 000 tU.



#### IN 2013 ...

AREVA produced 9,330 metric tons of uranium in financially consolidated share of production.

### → WORLD DEMAND AND SUPPLY



Source: AREVA

## "Megatons to Megawatts"

The Megatons to Megawatts agreement signed by the USA and Russia on February 18, 1993, was the first non-proliferation agreement signed on a commercial basis.

Over a 20-year period up to 2013 Russia converted 500 metric tons of HEU into low-enriched uranium for civilian use. AREVA has sold an average of almost 2,600 metric tons per year of natural uranium (in the form of UF<sub>6</sub>) under the agreement.

The end of the program means that secondary resources should play a lesser role on the market from 2014 onwards.

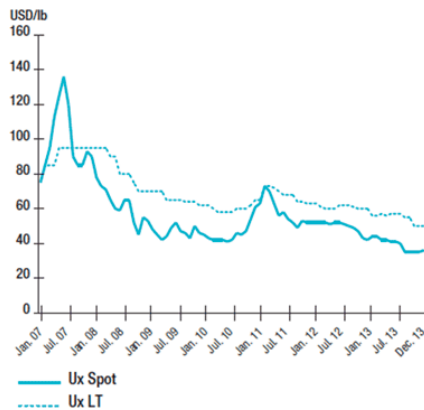
## Spot market

The spot market, which covers around 15% of uranium supplies, weakened during summer 2013. The price fell from \$44/lb at the end of 2012 to \$35/lb at the end of 2013.

Indeed, reactor requirements are lower than the amount of uranium available from mining and secondary resources. This imbalance is currently being absorbed by opportunist purchasing behavior and an increase in stocks.

The excess of material available on the market did not favor the conclusion of multi-year contracts in 2013 to the extent that the long-term indicator stood at \$50/lb at the end of 2013 against \$56/lb at the end of 2012.

→ URANIUM PRICE INDICATORS 2007-2013  
(IN CURRENT US DOLLARS)



Source: UxC.

Following the drop in market indicators, producers announced the postponement of numerous projects in 2012 and 2013, and closures and/or mothballing of mines in production from the beginning of 2014 (e.g. Kayelekera in Malawi, Honeymoon in Australia). This restructuring is likely to continue over the coming months.

Over the long term, the market is still forecast to grow, with demand by 2020 predicted to be 19% higher than in 2013 according to the WNA. The key drivers of this will be the restarting of Japanese reactors and growth in demand from the Chinese reactor fleet.

Due to this rise in demand, as well as the postponement of projects and decrease in production levels at existing mines, it will be vital to launch new projects, which will only be possible when prices increase again.

## ■ AREVA PRODUCTION IN 2013

In 2013, the group sold 17,623 tU, compared to 11,395 tU in 2012. This exceptional level of sales can be explained by the sale of uranium under the HEU agreement (the final deliveries for which took place in 2013) and the destocking of natural uranium as outlined in the ACTION 2016 plan.





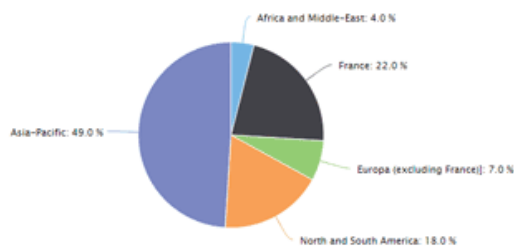
## Key figures

The Mining Business Group recorded 366 million euros in orders, bringing the order book to 9,602 million euros at the end of 2013.

This order book is diverse, with customers from different uranium-consuming regions.

Aside from the specific uranium supply contract won after the dilution of HEU from the dismantling of the Russian military arsenal (the final deliveries for which took place in 2013), the uranium offered to customers by AREVA's mining activities comes from mining resources from companies in which AREVA has a stake or uranium purchased on the market.

2013 revenue by geographical area



### KEY FIGURES

	2013	2012
Revenue (in millions of euros)*	1,756	1,360
Operating income (in millions of euros)	509	134**
Workforce at year end	4,463	4,601

\* Contribution to consolidated revenue  
\*\* Restated for 2012 asset disposals.

## Production of mining sites

In 2013, AREVA produced 9,330 metric tons of uranium (financially consolidated share):

- Somaïr production (on a basis of 100%) stood at 2,730 tU in 2013. Thanks to the mobilization of all the teams, the terrorist attack on Somaïr only resulted in a production loss of around 270 tU.
- At Cominak, production (on a basis of 100%) stood at 1,508 tU.
- Katco produced 3,558 tU in 2013. In addition to this, as of December 2013, 447 metric tons were awaiting calcining, bringing the total for the plant to 4,005 tU.
- In Canada, AREVA's production share from McArthur River/Key Lake stood at 2,338 tU.
- The operations for the pilot phase of Trekkopje were completed in 2013, after production of 186 tU during the first few months of the year.

### → 2013 PRODUCTION IN METRIC TONS OF URANIUM (MTU)

Country	Site	Share in JV in 2013 MTU	Available share * 2013 MTU	Financially consolidated share 2013 ** MTU	Type ***
Canada	McArthur River	2,338	2,338	2,338	UG
<b>Total</b>	<b>Canada</b>	<b>2,338</b>	<b>2,338</b>	<b>2,338</b>	
France	Hérault Mining Division	5	5	5	n.d.
<b>Total</b>	<b>France</b>	<b>5</b>	<b>5</b>	<b>5</b>	
Kazakhstan	Katco	1,815	3,558	3,558	ISR
<b>Total</b>	<b>Kazakhstan</b>	<b>1,815</b>	<b>3,558</b>	<b>3,558</b>	
Niger	Cominak	513	350	513	UG
Niger	Somaïr	1,731	2,129	2,730	OP
<b>Total</b>	<b>Niger</b>	<b>2,243</b>	<b>2,479</b>	<b>3,242</b>	
Namibia	Trekkopje (pilot)	186	186	186	OP
<b>Total</b>	<b>Namibia</b>	<b>186</b>	<b>186</b>	<b>186</b>	
<b>TOTAL</b>		<b>6,588</b>	<b>8,567</b>	<b>9,330</b>	

\* Share available to AREVA: share of resources and production likely to be sold/distributed to AREVA by the mining joint venture. For reserves, this share is expressed in concentrates, i.e. after taking into account mining and milling recovery.

\*\* Share of production consolidated in AREVA's financial statements.

\*\*\* Type of operation: ISR: In Situ Recovery; OP: Open Pit; UG: Underground; n.d.: not defined.

Source: AREVA.



## CHAPTER

# CSR APPROACH

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Extract from Responsible Development  
report 2013/2014 on Areva's Mining Activities

The complete report is downloadable on :  
[www.csr-mines.areva.com](http://www.csr-mines.areva.com)

## ■ A NEW IMPETUS FOR OUR POLICY OF RESPONSIBILITY AND ACCOUNTABILITY

### 5 questions put to Olivier Wantz, Member of the AREVA Executive Board and Senior Executive Vice President of the Mining Business Group



To highlight some of the corporate responsibility challenges that AREVA's mining activities face, Olivier Wantz looked back over 2013 in answers to five questions:

1. What were the highs and lows of 2013?
2. What are the main economic challenges faced by AREVA's Mining Business Group?
3. What are the major health, safety and environment issues to be addressed in our mining operations?
4. How would you define responsible mining?
5. What message would you like to send out to your stakeholders on the occasion of the publication of the Responsible Development Report 2013/2014?

#### QUESTION N° 1

### What were the highs and lows of 2013?

#### "2013, a year of mixed fortunes"

2013 was a year of contrasts for our mining activity. Let's start with the highs.

The year was marked by immense joy and relief when in October 2013 we learned of the release of our colleague and the three Vinci employees who had been held hostage for over 3 years in Niger. This immense joy could be read on all our faces.

From an operational standpoint, in 2013 we exceeded our targets, in particular our financial targets. This – were it necessary – confirms the effectiveness of our performance improvement program ACTION 2016, launched almost three years ago now.

Looking back at the lows, it was also in Niger that in May 2013 we were struck by a terrorist attack that killed a person working on the site and caused significant damage to our production facility.

The fall in the price of uranium, the onset of which dates back to 2011, continued to sharpen in 2013, particularly in the second half of the year. Indeed, 2013 saw the price of uranium reach a historic low of 35 USD/l, a fall of over 50% over a three year period.

The current market situation forces us to mark a pause in our development and to redouble our efforts to optimize and improve performance in order to get through what is a tough period.

I have every confidence in our teams to meet this challenge while at the same time remaining true to our commitments in the fields of safety, health, environment, and corporate social responsibility, so that we fulfill our role as a responsible mining company.

## QUESTION N° 2

### What are the main economic challenges faced by AREVA's Mining Business Group? "Ensuring the economic sustainability of our business"

Our customers are utilities who generate electricity through nuclear power. What they seek for their uranium supply is security and visibility over the long term. It is our responsibility to guarantee the economic sustainability and competitiveness of our mining operations to meet these needs.

With 9,330 tons of uranium produced in 2013, we are among the top three producers, and we want to remain a leader in the long term. We are making significant efforts to enhance performance across our organization, including by use of Lean methods, in order to achieve the savings made vital by the current economic environment. Our goal is to adapt to market changes and maximize the profitability of our mining operations.

This issue of economic sustainability was precisely our guiding concern in negotiations with the State of Niger over the conditions for operating the SOMAÏR and COMINAK mines, at the time of renewal of the mining agreement.

We are moving forward with development in Canada where AREVA's McClean Lake mill enters its operational phase in 2014, to process ore from the Cigar Lake mine in which we are partners.

However, we do not lose sight of the long-term nature of our business and the necessity to diversify our resources. With this in mind, we continue to develop our project portfolio, in particular through the creation of new partnerships in the field of exploration, such as with the strategic agreements signed in 2013 for the development of our mining operations in Mongolia.

The sustainability of our activities is also inseparable from the development of the territories in which we operate, through engagement and dialogue with local stakeholders and the development of community investment projects in the fields of health, education, access to water and economic development.

## QUESTION N° 3

### What are the major health, safety and environment issues to be addressed in our mining operations? "Taking a proactive approach to risk management"

The prevention of industrial risks to people and the environment lies at the very heart of all our business practices. Indeed, this responsibility is explicit in the values of the AREVA group and its mining activities, and is built into our improvement program Action 2016.

2013 marked a further fall in the number of accidents suffered by our employees and sub-contractors. Regrettably however, a fatal accident occurred at the SOMAÏR site in Niger. This means that each and every one of us must be even more committed to ensuring our own safety and the safety of others. I am personally committed to doing everything I can so that we meet the only acceptable security objective: zero accidents.

Due to the radioactive nature of uranium ore, we pay special attention to the health of our employees and subcontractors, implementing precautionary measures and monitoring provisions that are in line with the best practices in the field, whatever the country we operate in.

For example, in terms of radiation exposure, we have set ourselves a maximum threshold not to be exceeded of 16 mSv per year, for our employees and subcontractors, compared with the 20 mSv limit set out by French regulations. This threshold has not been exceeded in 2013.

Beyond adhering to strictly legal requirements, it is also up to us to hear and act upon the concerns and expectations of stakeholders. In Gabon and Niger, in collaboration with the NGOs, we have created Health Observatories, which are collegial bodies set up to ensure post-retirement medical surveillance for our former miners. In France, we are conducting a survey of mining tailings on behalf of the French government and we are charged with their management. In Niger, a radiometric counter plan has been in place since 2010 to carry out comprehensive monitoring of the streets and public places of the mining towns.

Importantly, there were no major industrial accidents with environmental impact to be reported on our sites in 2013. Our teams led day-to-day actions to prevent accidents and minimize impacts on the environment in all its aspects: water bodies, soil, air, and biodiversity. In addition, we continue to invest in environmental R&D. Under the «envir@mines» program, we are conducting predictive modeling projects to optimize current environmental monitoring and better anticipate solutions for site reclamation. Under this program, we are also developing new technologies to optimize the management and treatment of water, with studies underway in France, Niger and Kazakhstan.

## QUESTION N° 4

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### How would you define responsible mining?

#### “Giving new impetus to our policy of responsibility and accountability”

For me, being a responsible mining company means reconciling the economic, social, environmental and local development while taking a continuous improvement approach.

For our business, the year 2013 marks a new impetus in the development of social responsibility within our mining operations.

This development, in keeping with the values and policies of the AREVA group, has been especially fostered by AREVA's work with the International Council on Mining and Metals of which we have been a member since 2011. This industry organization has facilitated a better understanding of the relevant best practices in terms of CSR, for example regarding the contribution of the extractive sector to the development of local communities.

Our responsible commitments plan provides a framework to evolve our practices, to improve the way we report on our performance, and communicate on our progress and on the difficulties we encounter. To lend credibility to our approach with respect to our stakeholders, three years ago we began publishing the Responsible Development Report. Today the report meets the requirements of the French Grenelle II regulations and international best practices, including GRI and independent external assurance.

We involve our employees in the definition of new tools to better prioritize our CSR issues. In this way, we can develop our commitments plan by incorporating the thoughts and ideas of our teams.

We have initiated this approach in-house. The next step for us in 2016 is to be ready to enable our stakeholders to step up their contribution to the achievement of our goals, in order to continue moving the process forward.

## QUESTION N° 5

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### What message would you like to send out to your stakeholders on the occasion of the publication of the Responsible Development Report 2013/2014?

#### “Invitation to dialogue”

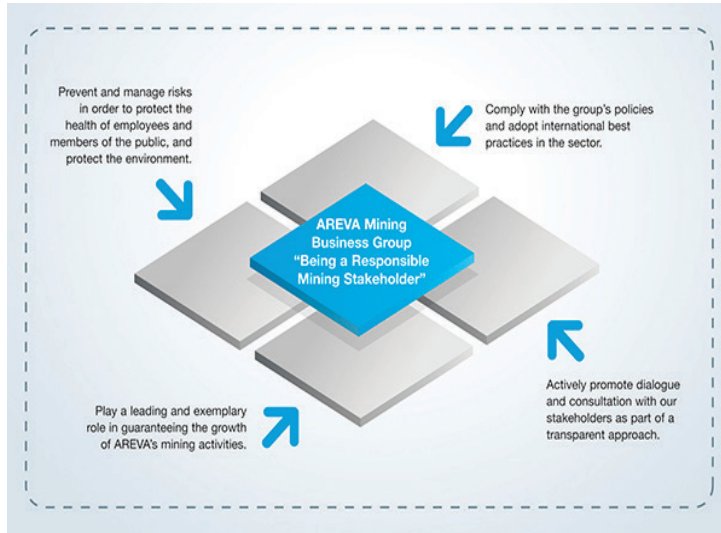
What we wish for is to be recognized by our stakeholders as a responsible mining company.

So we must continue to improve our practices and successfully engage a dialogue with them. This report is one of the tools of this dialogue.

That is why, as of 2014, we have chosen to seize the opportunities presented by the web. Switching to the digital format for our Responsible Development Report this year is also a way of reaching out to the greatest number of people.

So I invite all those who are in contact with - or simply interested in - our activities, to take advantage of this opportunity to give us their feedback, their suggestions, and put their questions to us about the content of this report. We are counting on these contributions to continue to grow and build a constructive relationship over the long term.

## THE FOUNDATION OF OUR RESPONSIBLE GOVERNANCE



AREVA is convinced that safety, security, transparency and ethics are inseparably linked to the responsible development of its activities. Our teams strive on a daily basis to adhere to this approach in order to ensure that AREVA's mining activities continue to develop with dynamic of progress and in full compliance with the regulatory framework.

## AREVA Values Charter



Since 2003, the Values Charter has shown the importance that the group attaches to sustainable development, compliance with the Universal Declaration of Human Rights and adoption of the international principles defined by the OECD and the UN. It lays the foundations for the ethical governance of our activities.

Available on the AREVA internet site and issued to all of our collaborators, it gives the group values to be respected, the principles of action with regard to stakeholders and the rules of conduct applicable within the group.

## Rules of conduct and governance

The rules of conduct deal more specifically with the action we take in terms of the following

- Compliance with international treaties (international mechanisms in force with regard to non-proliferation)
- Conflicts of interest
- Insider trading
- Corruption
- Payments
- Sponsorship, donations, humanitarian work
- Protection of people and assets
- Political finance
- Competition

At group level, the AREVA Supervisory Board has set up four specialized committees including the **Ethics Committee**. Its mission is to oversee group compliance with the best international ethical practices, to review the values charter and its updates and where appropriate to make recommendations to the Supervisory Board. The role of **ethics officer** within the Mining Business Group is held by the General Counsel for our activities, in contact the AREVA Ethics officer on the Group Ethics Committee.

## Ethical reporting

Every year, the Mining Business Group, like all the group's business entities, conducts an internal ethical reporting process on the proper application of the Values Charter and any infringements. Each campaign opens with a letter from the Senior Executive Vice President of the Mining Business Group. This process involves all our directors and their managerial staff in all the countries where we are present.

This reporting is underpinned by the principle that our employees can report an infringement they have found without repercussion to themselves if the facts are proven (whether the issue is within our own operations or related to the practices of our subcontractors).

In the same way, if anyone is given an order that clearly goes against the AREVA Values Charter, they have a right to refuse to comply and must raise the issue with group management for confirmation.

The nature of corrective actions proposed varies depending on the severity of the failure to comply with the charter. These actions may range, for example, from training to dismissal of the personnel concerned. This exercise also enables our teams on all our sites to have a better qualitative understanding of the situations that bear risks with regard to the rules of conduct and the values charter: corruption, conflict of interest, forced or child labor, etc. All members of the Mining Business Group's Management Committee have followed or will follow (in the case of newcomers) training in ethics and human rights. Similarly, all of our subcontractors and suppliers make a contractual undertaking to adopting the Values Charter.

**+** TO GO FURTHER

Under our social policy in favor of diversity, employees may also have recourse to the anti-discrimination alert system or consult their staff representative in case of infringement of their fundamental rights.

**Preventing risks**

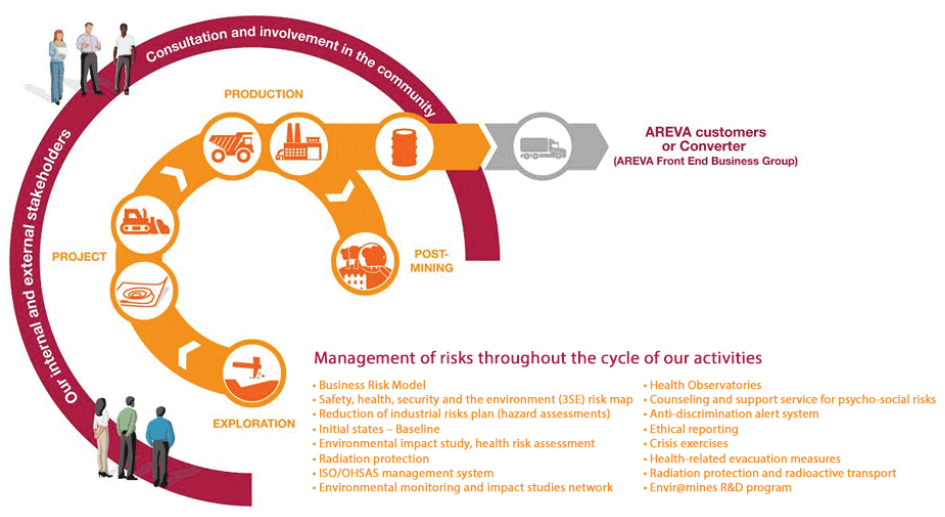
Each of our operations represents several decades of activity, and their contexts vary one country to another, from an environmental standpoint as much as on political, economic, social and cultural levels. Their feasibility, and even their sustainability over time, depend on several factors (e.g. commercial demand for yellowcake, uranium prices, energy policies, local acceptability, etc).



**■ Safety culture-related measures**

Nuclear safety and risk prevention are supported by the highest management level of our organization. This constitutes AREVA's number one strategic pillar.

As part of our efforts to prevent these risks and to anticipate development of future standards, we conduct research and development studies and we put in place methods for identifying, managing, monitoring and alerting to risks, as well as for long-term prevention as well as preparing for emergency situations.



The very nature of the ore extracted - uranium - with its specific physical, chemical and radiological properties, lead us to adopt stringent and statutorily demanding practices for the protection of people and the environment.  
These activities also involve health and accident-risk factors for our employees, our contractors and the neighboring populations of our mining sites.

## International initiatives

Regulatory compliance and enforcement is a prerequisite in our business and lies at the heart of group policies and standards. We also attach great importance to adopting international good practices in order to continuously improve our approaches and guarantee sector monitoring in terms of sustainable development.

### ■ The Extractive Industries Transparency Initiative - EITI

Since 2003, by lending its support to the Extractive Industries Transparency Initiative (EITI), AREVA has demonstrated its commitment to greater transparency in payments made to States, in relation to the management of mining resources.

Niger, Mongolia and Kazakhstan, countries in which the group is engaged in mining activities, are members of EITI. In these countries, our mining subsidiaries participate in the local multi-party process and declare payment of taxes, mining rights and taxes on profits using specific declaration forms. The Statutory Auditors of these subsidiaries carry out an audit which results in a certificate of compliance in accordance with the IFAC ISRS 4400 (International Standards on Related Services) international standard.

Furthermore, AREVA's mining activity entities assess their involvement in the EITI process by means of self-assessment forms.

### ■ The International Council on Mining and Metals - ICMM

Since May 2011, AREVA has been a member of the International Council on Mining and Metals (ICMM). This initiative is a reflection of AREVA's desire to be part of a new movement of continuous improvement and to share its know-how more effectively with other stakeholders in the sector

As such, activities shall be in line with **the following commitments:**

- Incorporate into our policies and practices the **10 principles of sustainable development and the position statements** of the ICMM, In accordance with our internal policies and commitments, we are applying these principles in the development of our Responsible Commitments Plan. They enable us to better understand the issues faced by the mining sector and act as a support in prioritizing the materiality of associated themes.
- Drafting of an annual non-financial report in accordance with the guidelines of the Global Reporting Initiative (GRI).
- Have our statements and practices, presented in the Responsible Development Report on AREVA's Mining Activities, reviewed annually by an independent assessor (per ICMM audit procedure and AA1000 accountability principles).

**Top tier management, together with experts and specialists are actively involved in the working groups and processes associated with the development of ICMM sectoral good practices.**



## TO GO FURTHER

### Understanding the 10 ICMM sustainable development principles

The ten fundamental principles of the ICMM (and their complementary documents in the form of "position statements") take inspiration from other global standards such as the Rio Declaration, the Global Reporting Initiative, the OECD Guidelines for Multinational Enterprises, the World Bank's Operational Policies, Conventions 98, 169 and 176 from the International Labour Organization and the Voluntary Principles on Security and Human Rights. For further information on each of the ten fundamental principles, see [www.icmm.com](http://www.icmm.com).



## ■ STRUCTURE OF OUR APPROACH

The ambition of the AREVA Mining Business Group is to be a responsible mining player and to be recognized as such by its stakeholders. To this end, in 2013 we defined a specific **responsible commitments plan** for AREVA's mining activities.



This is part of the first pillar of performance, "Safety and Security", in application of the group's Action 2016 strategic plan. It covers the **ten sustainable development principles** of the International Council on Mining and Metals (ICMM) and aims to better assess the level of our responsible practices, where we want to improve in the mid- to long-term (over 3 to 10 years).

That is why our directors at the highest levels of the organization are involved in the decision-making process of the ICMM Council with the aim of setting the objectives and programs that contribute to sustainable development in the extractive sector.

The responsible commitments plan is an expression of this integrated vision, which is underpinned by group's Values Charter, policies and standards of by the mobilization of our staff day after day.

Many of objectives identified are already in the process of being deployed and attained such as for instance occupational safety, which is a priority commitment at the highest level of the AREVA organization. However, for each of these 10 principles, our goal is exemplarity and continuous improvement.

## ■ QUADRANTS OF THE PER

### Improve our practices in the field

Today several departments within the Mining Business Group are involved in ensuring the applicability of the group's policies and standards. They define action plans with the sites to make sure our practices are compliant and to improve them: preservation of the environment, occupational health and safety, diversity, combating corruption, etc.

In addition, the study of best responsible practices in the mining sector led us to conduct a self-assessment of our CSR practices in 2012, with our managers across all of our subsidiaries, with the aim of getting a clearer view of the degree of maturity of our activities in relation to the ICMM's 10 principles of sustainable development.

This self-assessment is repeated every two years and allows us to identify areas for improvement in order to build specific action plans. It is performed with our directors and managers in the mining activities. In 2012, we identified for instance that in certain areas, such as specific reporting on biodiversity, training on human rights issues, and impact measurement relating to our societal projects, more formal structuring is necessary on our part. These areas are included in our goals for 2014.

Over the period 2014-2015, we are also starting to look at how to set up an improvement process fueled by the results of:

- the CSR self-assessment,
- the materiality exercise that we are deploying in our mining operations,
- the audit assessing the alignment of our practices with the ICMM's 10 principles of sustainable development.

### Report on our performance

There are a number of vehicles available by which AREVA's mining activities can report to their stakeholders on their performance and practices in terms of corporate social responsibility:

- **The Responsible Development Report** on AREVA's mining activities,
- **The non-financial report of several of our subsidiaries** (eg. Canada and Namibia),
- **The reports of the Health Observatories** in Gabon and Niger,
- **The annual financial reporting of our subsidiaries** performed under the Extractive Industries Transparency Initiative (EITI).

Numerous reports and consultative bodies are also made available to our stakeholders locally to enable them to access information relating to our sustainable development performance. Examples include the deliverables associated with the Site Monitoring Committees in France (for remediated mining sites).

## Demonstrate the work done on a day-to-day basis

More than just presenting results, we undertake to disclose reliable and comprehensive information enabling our stakeholders to make an objective assessment of performance in areas of environmental, economic, social and societal responsibilities.

These principles apply to all our sites. With this approach, we are attached to:

- **Furthering, when they exist, or developing frameworks for consultation and dialogue** with stakeholders in order to be able to exchange directly on all these aspects of our performance.
- **Structuring in more effective and relevant ways the reporting** on our non-financial performance. In this approach, we aim to adopt the best practices in the industry and to build on internationally recognized guidance, the GRI - Global Reporting Initiative. The application of these guidelines also leads us to self-declare the content of our report to the secretariat of the GRI so that they can certify if we have properly implemented the guidance and corresponding methodology.
- **Certifying through an annual external audit process** (as of 2014), within AREVA's mining activities, the quality of responsible practices conducted on site and the information we disclose. This audit is carried out in accordance with the ICMM Assurance Procedure and the **AA1000** accountability assurance standard.
- **Having a check run on a group of non-financial indicators** by AREVA's statutory auditors.
- **Inclusion in any external audit process** of our management systems for health, occupational safety, the environment, as well as for internal reviews and inspections.

**More specifically in relation to external commitments, we have set ourselves the following objectives:**

- For GRI reporting, be level B in 2013 (RDR 2012), B+ in 2014 (RDR 2013), A+ in 2015 (RDR 2014).
- Beginning in 2014, commission an independent third party assessment of compliance of our policies and practices with the ICMM's 10 principles of sustainable development and of the correct application of the Global Reporting Initiative guidelines (GRI 3.1 MMSS).
- Meet the Grenelle 2 regulatory requirements on which AREVA is working, in line with our GRI policy.

## Mobilizing the expertise of our teams

Because its activities can prompt questions, the Mining Business Group is keen to understand stakeholders' expectations and establish a constructive dialogue.

Our teams constitute their primary interface with our activities. Similarly, they lead many initiatives that promote in our view **sincere communication on the nature of the challenges we face**, our associated performance level and the practices we have to meet them:

- The participation of our specialists and experts in working groups within professional organizations and international bodies to contribute to sharing experiences and defining standards and best practices.
- Publication of scientific work carried out by our experts, and research and development teams.
- The production and disclosure of documents such as annual reports.
- Presentations made as part of the process of consulting and dialogue with stakeholders particularly with the employee representative bodies.

Day by day, the success of our approach to corporate responsibility depends on the mobilization of all our teams in all areas:

- With respect to Corporate Social Responsibility (CSR), we engage them through brainstorming workshops to define and implement new tools in collaborative mode (eg. self-diagnostics of our CSR practices, materiality exercise, preparation of the Responsible Development Report on AREVA's mining activities);
- With respect to safety in the workplace and risk reduction, they are proactively involved in awareness raising and training campaigns related to occupational safety and health (eg. the Safety Day in June, etc.);
- With regard to business ethics, they are free to invoke the mechanisms in place (eg. ethical reporting, anti-discrimination alert system);
- In terms of innovation, our teams are involved in continuous improvement projects using industrial performance tools.

## ■ PRIORITIZING OUR KEY ISSUES

The materiality exercise which we have been conducting since 2013 aims to help us **prioritize the criteria related to CSR issues** and that we wish to report on in this non-financial annual report.



This approach is linked to implementation of the GRI 3.1. reporting guidelines. We also initiated this process in order to **better prepare for transition to the GRI G4** which is the next version of this standard (2015/2016).

### Our definition of materiality

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This materiality exercise in fact serves to provide a "snapshot", for a given scope, at a particular moment in time. This snapshot tells us which topics are qualified as important and most relevant in terms of reporting for the year in question, both for our in-house teams from a business point of view and for stakeholders interested in our business.

The purpose of this materiality exercise is not to assess the level of maturity of our practices with regards to these responsibility criteria. This "maturity assessment" is conducted every two years as part of our **CSR Self-diagnostic**.

### Contribution of our teams to the exercise

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Over the period 2013-2014, **we have defined and lead this materiality exercise internally with the teams at AREVA Mining Business Group headquarters**: CSR, HSE, legal, operational performance, transport and logistics, post-mining, purchasing, HR, communications, sales, projects, finance, the pool of experts.

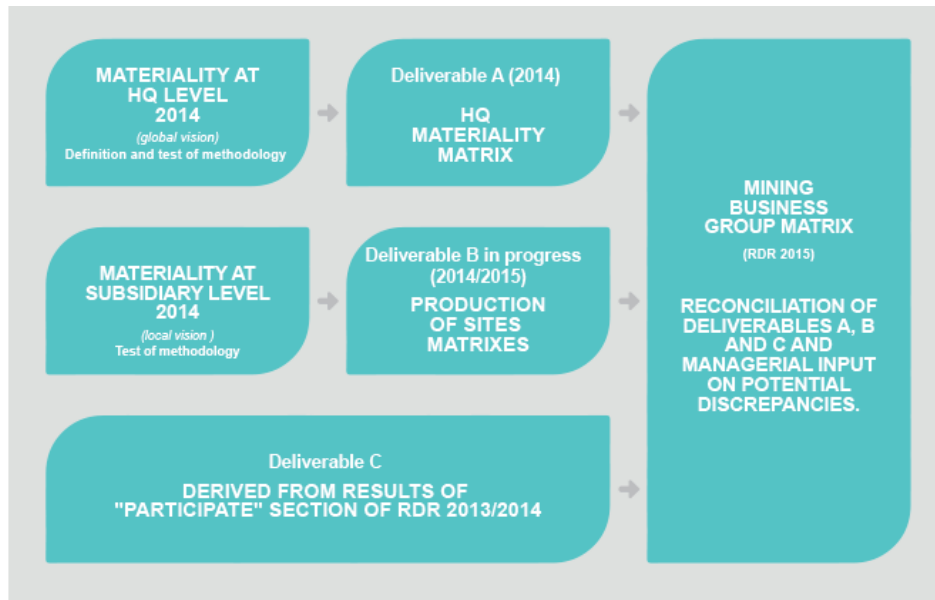
For criteria relating to their area of responsibility, teams discussed the levels of expectation both from a businesses and a stakeholder standpoint, representing an overall vision for AREVA's mining activities. These teams also enabled the CSR department to improve the methodology and the way of approaching the different criteria.

A **"materiality exercise" pilot**, applied specifically to one of our sites abroad, was also conducted by local teams in order to test the methodology and to make comments on possible improvements.

To date, we have analyzed stakeholders' expectations with our teams who are in direct contact with them and through evidence (documents, emails, memos, letters, etc.) compiled in the process of dialogue and consultation.

**Through the 2013/2014 report, we are proposing for the first time to those interested in our activities to contribute to the materiality exercise that will be a point of reference for the 2015 report.** This is a first step to involve stakeholders directly in this process. For 2016, we are studying how we can better involve them for instance through a specific survey.

## Process and timing



### PARTIAL RESULTS 2014

The matrix presented here is partial (Deliverable A). It was produced by the teams at AREVA Mines' headquarters and projects onto a global, international view of the group's mining activities. These results need to be balanced with those of the materiality exercises on the sites (ongoing) and feedback from our stakeholders with views expressed in the "Contribute" section.

This deliverable "A" gives the broad trends which we need to look at more closely and confirm for the 2015 report.

We have defined the criteria to be evaluated on the base of AREVA Values Charter, AREVA policies and the 10 principles of sustainable development of the International Council on Mining and Metals (ICMM).

These criteria are 15 in number:

- **1. Transparency**  
Share with stakeholders in a relevant, accurate and accessible manner, non-confidential information relating to decisions or activities having an impact on the economy, the general public or the environment.
- **2. Responsible purchasing**  
Manage the supplier and product procurement chain in compliance with criteria conducive to protecting the environment, to social progress, to human rights and to economic development.
- **3. Ethical business**  
Adopt and maintain ethical business practices in order to avoid incidents of corruption or bribery.
- **4. Risk management**  
Reduce, analyze and assess industrial risks liable to lead to health and safety consequences for employees, or to harmful consequences for the general public and the environment.
- **5. Community involvement**  
Contribute to meeting local socio-economic and healthcare needs, respecting fundamental human rights and the culture and heritage of indigenous peoples, throughout the lifecycle of the mining activity and in cooperation with stakeholders.
- **6. Health, safety and radiological protection of employees**  
Protect the health and safety of employees and keep the radiological impact on neighboring communities to a minimum.
- **7. Labor relations**  
Facilitate and safeguard dialogue between employees and general management (e.g. through staff representative bodies and internal communications).
- **8. Employee development**  
Conduct recruitment of personnel, manage career development and provide access to training in accordance with diversity and non-discrimination criteria.

- **9. Environmental footprint**  
Monitor and assess quality of air, water, soils and the food chain, and optimize consumption of resources (water, energy, etc.) and raw materials (reagents, etc.).
- **10. Biodiversity**  
Keep footprint to a minimum and preserve the flora and fauna in proximity to mining activities.
- **11. Climate change**  
Help combat climate change by keeping greenhouse gas emissions to a minimum (CO<sub>2</sub> et VOCs).
- **12. Emissions and waste**  
Control all liquid, solid and gaseous discharges and emissions, as well as waste and processing tailings, liable to have an impact on the environment.
- **13. Management of long-term impact**  
Prepare for the end of life phase of the mine as far upstream as possible, in compliance with environmental, social and societal principles and the regulations in force.
- **14. Operational performance**  
Ensure production is conducted on time, on budget and in accordance with AREVA values.
- **15. Shipments and traceability of uranium**  
Guarantee the inspection and tracking of uranate concentrates, as well as the safety and security of shipments to converters.

Materiality matrix (Deliverable A partial : topics identified for 2013 reporting)





## CHAPTER

# COMMITMENTS

## Health and radiation protection

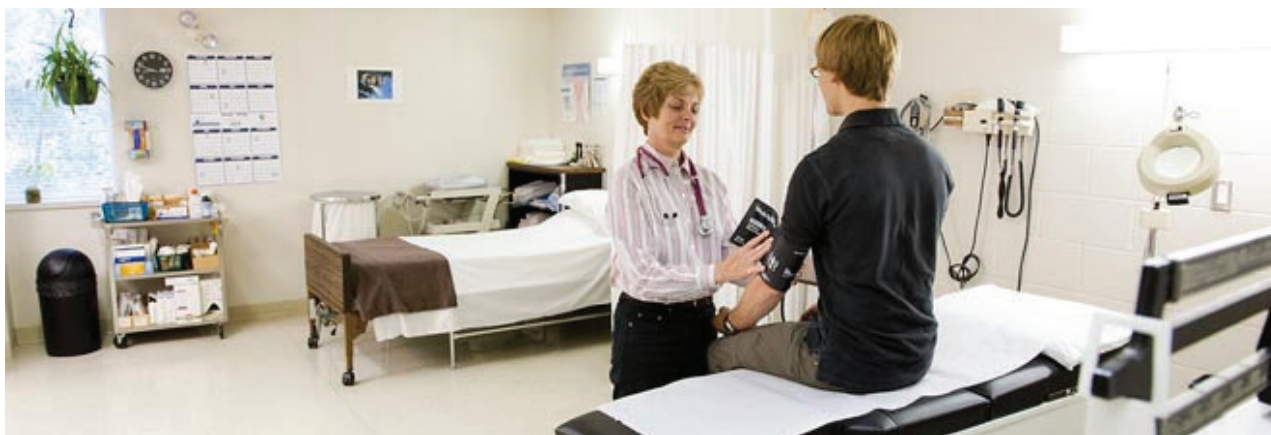
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## ■ OUR ACTIONS TO PROMOTE AN OCCUPATIONAL HEALTH

Our employees may be exposed to several risk factors that could affect their health, whether on industrial sites, in offices or during business trips to the various countries in which AREVA's mining activities are based. In the course of our activities, our teams deploy a great many initiatives aimed at preventing hazards and maintaining a high level of occupational health.



### AREVA's Occupational Health and Safety Policy 2014-2016

One performance pillar of the "Action 2016" strategy is dedicated to "Safety and Security" and incorporates the objectives of the group's Occupational Health and Safety Policy 2014-2016.

More specifically, AREVA is committed to ensuring effective monitoring of occupational health for all its employees. The following five major objectives are currently being deployed and apply to mining activities:

- 1. Draw up and apply international medical standards for the medical monitoring of occupational risks.
- 2. Strengthen medical support governance in all regions in which we are present.
- 3. Increase vigilance with regard to our employees' quality of life at work, particularly in terms of preventing psychosocial risks at all levels of the organization, by developing an active employee retention policy.
- 4. More specifically in France, ensure effective deployment of the group Occupational Health Service.
- 5. Take into account the specific issues associated with expatriate workers in employee health monitoring.

### Mining activities roadmap

The group objectives are listed in a roadmap specific to the Mining Business Group, based on four pillars:

- **Leadership and culture:** e.g. awareness-raising and training programs.
- **Organization and skills:** e.g. audits of medical structures, health scheme optimization, etc.
- **Standards and procedures:** e.g. annual reports on health observatories, health recommendations in contracts with subcontractors, etc.
- **Risk analyses:** e.g. linking the health aspect to the organization of crisis exercises, monitoring impacts, etc.

In terms of occupational health regulations, employees are the responsibility of their entity of origin and are subject to national laws. These regulatory considerations are incorporated into our operating policies and practices.

### An international health service

We deploy a health service in all the countries in which we work to ensure we meet **the prerequisites for occupational healthcare, as well as providing medical support** for medical evacuations for local people and expatriates.

Priorities are set by the group Health Department and discussed by staff representative bodies (such as the **Occupational Health and Safety Committee**).

## Prevention, the key to occupational health

More specifically, our employees are exposed to two major categories of health risk, **namely the injuries that may occur following an accident in the workplace**, mainly on an industrial or mining site, or the damage associated with the ionizing radiation that is an intrinsic part of uranium ore mining and the production of uranium oxides (U<sub>3</sub>O<sub>8</sub> – Yellow Cake).



The prevention of risks that may affect the health of our employees takes place at several levels:

- **Awareness-raising campaigns and training for our employees:** e.g. pre-departure information including travel advice and information about endemic diseases present in the countries in which we work or any other health alerts (training for employees making regular business trips, country health sheets, healthy eating and hygiene tips, etc.), as well as awareness-raising during site visits and stress prevention measures, among others.
- **Occupational medical consultations:** e.g. initial and periodic consultations.
- **Vaccination monitoring for employees abroad (whether expatriate or on a business trip), with compulsory vaccinations in accordance with current regulations and recommended vaccinations depending on the risks associated with the destination country** (endemic diseases or according to health alerts).
- **First aid training:** training is organized regularly, along with refresher courses for AREVA personnel in France and within our international entities.
- **Baseline health assessments** before production begins to assess the health situation in the country or region in which our sites will be based: e.g. the baseline health assessment feasibility study performed in November 2013 in Mongolia.
- **Counseling and support service** for psycho-social risks led by a psychologist at group Health Department level. From 2015, preparations will be underway to provide expatriates and their families with a personal health contact specializing in this area.
- **Preventative measures in the field of occupational safety and radiation protection :** every measure taken with a view to preventing, eliminating or reducing the impact of accident-generating events reduces harm to the health of our employees.

## RADIATION PROTECTION OF EMPLOYEES





## Exposure to ionizing radiation

Two types of exposure to ionizing radiation are possible:

- **External exposure to ionizing radiation**, where a person is externally exposed to ionizing radiation emitted by a nearby radioactive source.

In this case, exposure stops as soon as the radioactive source is distanced from the person or if a screen (shielding) is placed between the person and the source. When radiation is emitted by radionuclides present on the surface of the skin, we also talk about external contamination.

- **Internal contamination causing internal exposure to radioactive particles** occurs when radioactive elements penetrate inside the organism.

This can happen if a person inhales radioactive particles present in the air or ingests food that is contaminated with radioactive particles, or if there is direct contact with the skin or a wound (in this case we talk about "external contamination" that becomes "internal contamination"). When contamination occurs, exposure to radioactive particles continues as long as the source remains inside or in contact with the body.

## Fundamental principles in radiation protection

Through radiation protection, we implement all the preventative measures that limit the exposure of teams and populations to radiation.

In order to avoid or reduce the associated risks, radiation protection follows **three main principles: justification, optimization and limitation of radiation doses**:

- **the justification of activities** that carry the risk of exposure to ionizing radiation;
- **the optimization of exposure** to this ionizing radiation, ensuring that exposure is kept as low as reasonable achievable (**ALARA** precautionary principle);
- **the limitation of individual radiation exposure doses**.

These three fundamental principles are taken from the recommendations of the ICRP (International Commission for Radiation Protection) and are enshrined in the French Public Health Code (Code de la santé publique).



### TO GO FURTHER

**ALARA** is the acronym for "As Low As Reasonably Achievable". It is one of the major fundamental principles of radiation protection. The purpose is to reduce worker exposure to the lowest level possible, taking into account technical, economic, and social factors. The group adheres to this approach and applies this principle throughout its facilities.

**For example, in 2013**, a direct-reading dosimeter (DRD) with Bluetooth technology was installed at McClean Lake in Canada, which has some of the highest uranium concentrations in the world.

In this way, doses can be monitored on a daily basis. The average dose can also be monitored, with potential for investigation when spikes are recorded.

A real-time alpha/beta dust counter has also been put in place. This type of equipment is an example of good practice with regard to international standards.

In countries where legislation is less strict, AREVA is committed to reducing the maximum personal doses received in its facilities by exposed workers to 20mSv/person over a rolling 12-month period.

Radiation protection is taken into account from the design phases of projects. Facilities are built to limit exposure at workstations. Zoning, ventilation and structural components are the most important factors for sound design.

Following this, during normal operation, risk analyses are conducted at workstations and the exposure of workers is monitored using suitable dosimeters.

**Regulations in radiation protection**

■ **Regulatory limits per country**

Regulatory limit established for employees and subcontractors	Annual dose added 12-month rolling for exposed workers
ICRP recommendations	100 mSv over 5 years, not exceeding 50 mSv in any single year
EURATOM directive	20 mSv/year
Niger	100 mSv over 5 years, not exceeding 50 mSv in any single year
Canada	100 mSv over 5 years, not exceeding 50 mSv in any single year
Kazakhstan	100 mSv over 5 years, not exceeding 50 mSv in any single year
France	20 mSv/year
Namibia	100 mSv over 5 years, not exceeding 50 mSv in any single year
Mongolia	100 mSv over 5 years, not exceeding 50 mSv in any single year

■ **Definition of occupational diseases related to ionizing radiation**

A disease can be recognized as an **occupational disease** if it is included in one of the tables appended to the French Social Security Code (Code de la Sécurité sociale).

Disorders caused by occupational exposure to ionizing radiation are dealt with in **table 6 (general social security scheme) and table 20 (agricultural scheme) of occupational diseases**. Each table has the following features:

- the symptoms or pathological lesions the affected person must present;
- an exhaustive list of these symptoms or pathological lesions, in the left-hand column of the table;
- reporting time limits, i.e. the maximum period between the end of the worker's exposure to the risk and when the condition is observed. This time limit varies depending on the clinical signs or symptoms presented by the affected person.
- the jobs likely to cause the condition in question, given in the right-hand column of the table

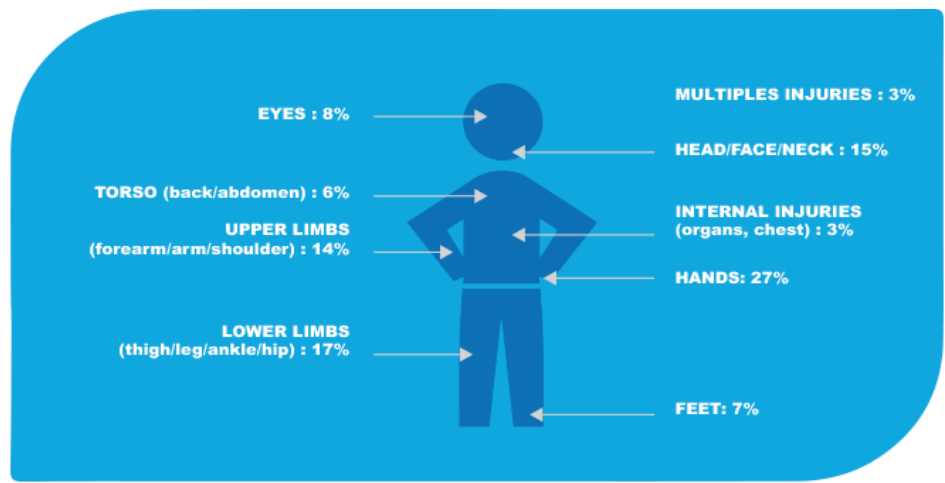
Sometimes, the list is exhaustive and only workers allocated to the jobs listed have a right to be compensated for an occupational disease. In other cases, this list of jobs or professions is only indicative.

Any condition that meets the medical, occupational and administrative criteria given in the lists is systematically "presumed" to be occupational in origin, without any proof being necessary.

■ **MAIN RESULTS 2013**

**Injuries due to accidents in the workplace**

**2013 RESULTS: Injuries due to accidents in the workplace (fatal, with lost time or without lost time) for employees and subcontractors**



**More than 20 mSv dose**



**20 mSv**, is the additional effective dose limit over a rolling **12-month period** set by French regulations.

For all its international activities, AREVA uses this limit of 20mSv even where national regulations are less restrictive.

**As part of its continuous progress work, the 2013 target set by AREVA Mines was a maximum dose of less than 16 mSv over a rolling 12-month period.**

**HEALTH OBSERVATORIES**

**THE HEALTH OBSERVATORIES IN FIGURES...**

To date, more than 600 former employees of COMUF in Gabon and SOMAïR and COMINAK in Niger have benefited from post-professional monitoring.

As of the end of 2013, no occupational diseases associated with exposure to ionizing radiation have been declared.

AREVA's mining activities carry out post-professional monitoring of retired miners likely to have been exposed to uranium through Health Observatories deployed in Gabon (Health Observatory of Mounana - OSM) and Niger (Health Observatory for the Region of Agadez - OSRA).

The initiative has been coordinated by AREVA, the states and civil society in these countries (Gabon and Niger). The observatories are the result of an innovative, scientific and multi-party approach.

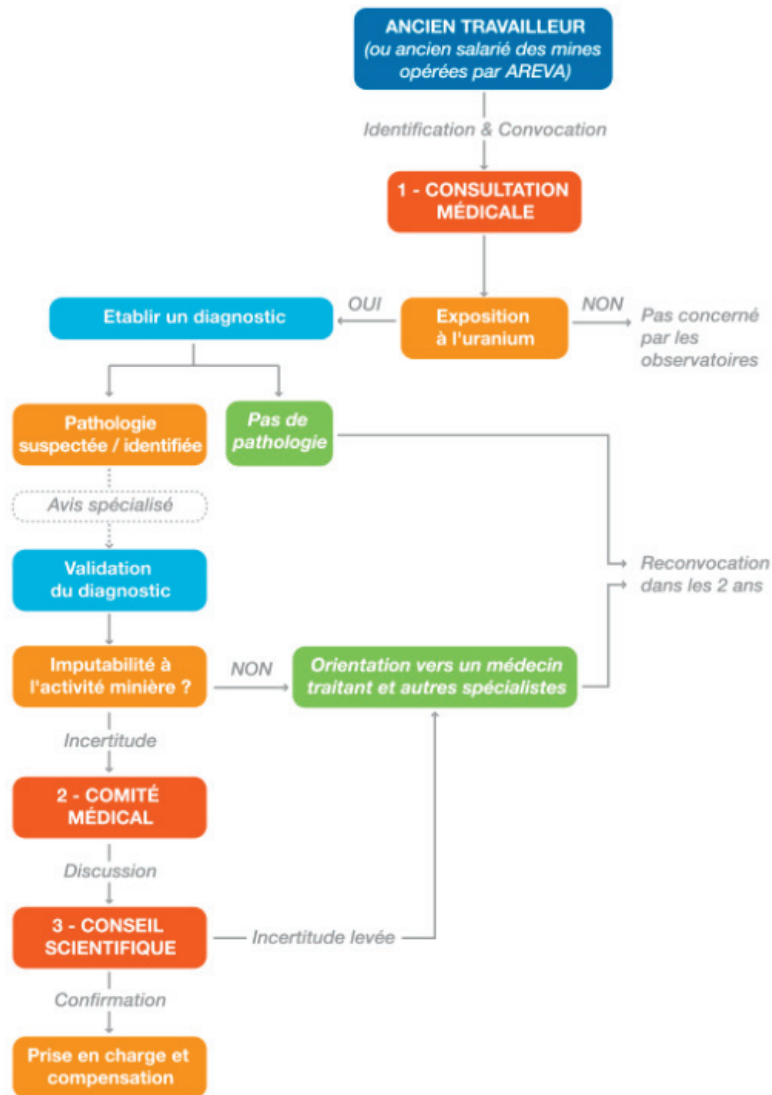
The medical consultation that forms part of this post-professional monitoring includes a medical questionnaire, clinical examination, chest x-ray and blood test. It is carried out by independent doctors whose services are provided to the Observatories.



**Calendar of creation**

2007	JUNE 2009	OCTOBER 2008	DECEMBER 2012
AREVA announces its intention of monitoring the possible health impact of its uranium mining activities, particularly in Africa.	A memorandum of understanding is reached by the various parties (including two NGOs that have now withdrawn) and the agreements founding the Health Observatories are signed.	Launch of the Health Observatory of Mounana (OSM) in Gabon and start of post-professional monitoring for former COMUF employees.	Launch of the Health Observatory for the Agadez Region (OSRA) in Niger and start of post-professional monitoring for former SOMAïR and COMINAK employees.

## Functioning of the Health Observatories



\*Only in French

In the event of a suspected pathology, three entities proceed to process the medical files and analyze results:

- **The Medical Committee** 3 médecins, experts en matière de pathologies liées aux rayonnements ionisants. Ce comité analyse les données sanitaires transmises par le médecin de l'Observatoire.
- **The Scientific Council**: five experts internationally recognized for their knowledge of pathologies linked to ionizing radiation make a judgment on the occupational nature of the pathology.
- **The Board of Directors**: representatives of AREVA, the states and civil society confirm the decision of the Scientific Council and launch medical care.



CHAPTER  
**COMMITMENTS**  
Occupational safety

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## MAKING SAFETY A PRIORITY

Our group aims for excellent occupational safety in all its activities: it forms one of the five pillars of our strategic **Action 2016** plan, with the objective of achieving **no fatal accidents** and a **reduction in the rate of occupational accidents**.



## Safe Together!



Since 2012, the group has been running a program specifically aimed at occupational safety culture entitled **Safe Together!** Its purpose is to develop a safety culture that involves all our employees and subcontractors.

**Nine new safety standards** have been applicable since July 1, 2013, across all activities. They were introduced on the occasion of the safety month in June, when a day was dedicated to training and raising awareness among teams. This safety day took place on each site, with the participation of our subcontractors.



## A commitment made at the highest level of the organization

The Mining Business Group's occupational safety objectives are based on the following commitments to:

- strengthen and share a common safety culture across the Mining BG;
- ensure a suitable structure that allows the effective implementation of actions to achieve the targets set;
- effectively assess and prevent risks at workstations, as well as industrial and health risks.

IR1 <1 (i.e. **no more than 27 lost-time accidents**) and consolidation of our IR3.

IR1 : Fatalities, and lost time accidents

IR2 : Fatalities, and accidents with and without lost time

IR3 : Fatalities, and accidents with and without lost time (including medical care and first aid)

“ Our objective is zero accidents.

Just like each and every one of you, I am only satisfied provided we all get home safely to our families at the end of each day of work. My personal belief regarding safety is that to achieve zero accidents we have to have:

- strong and visible management commitment
- strict compliance with rules
- and commitment on the part of everyone to work in thoroughly safe conditions that go beyond simply working in conformity.

I expect each Mining Business Group employee to make an unflinching commitment to safety and to behave in an exemplary manner in all matters of safety.

”

*Excerpt of letter of commitment by Olivier Wantz, Member of the Executive Board and Senior Executive Vice President of the Mining Business Group.*

## A safety roadmap based on four pillars

Employees and subcontractors are exposed to the risks generated by mining activities, chiefly those linked to drilling activities and ore extraction, transportation and movement, as well as the risks inherent to all industrial activities (handling operations, working at height, etc.).

The objectives of the Safe Together! program are detailed in a Safety Roadmap for 2013-2015, which is deployed at all AREVA sites where mining activities take place.

The group objectives are listed in a roadmap specific to the Mining Business Group, based on four pillars:

- **Leadership and safety culture:**
  - strengthen safety governance through discussions on the ground between management and employees, an annual safety seminar, and the creation of a safety committee and safety action plan for each site;
  - raise awareness on occupational safety at all sites during the month of June: targeted actions for subcontractors, communication campaigns, mobilization to encourage initiatives, participative safety visits and feedback.
- **Organization and skills:** allocate roles and responsibilities to ensure the right person is at the right post and identify key people, develop safety skills (among managers and employees) and set individual safety targets.
- **Standards and procedures:** implement the Safe Together! standards, manage subcontractor safety, perform audits and improve cause analysis.
- **Risk analysis and prevention:** assess risks at workstations and industrial and health risks, set up a documented crisis system, take suitable prevention measures and update risk assessments when necessary.



EXAMPLES IN 2013

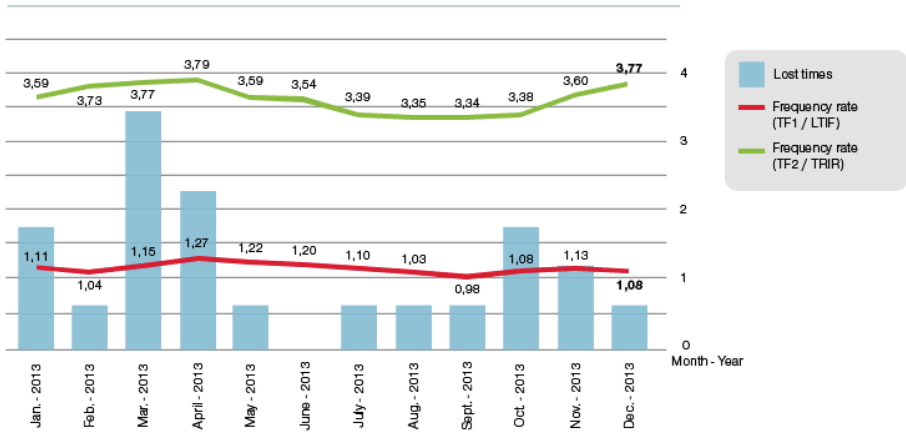
- Creation of the Mining Business Group Safety Committee, chaired by Olivier Wantz. The first meeting took place in September 2013.
- Organization of working groups with each site Management Committee and Head Office following the conclusions of the 2012 safety culture audit.
- Completion of an assessment audit to establish the occupational health and safety management system, which has OHSAS 18001 certification at the KATCO site in Kazakhstan.
- Integration training completed by several Nigerien safety engineers.
- Completion of a seismic risk study for our offices in Kazakhstan and training of relevant staff in the associated risks.

MAIN RESULTS FOR 2013

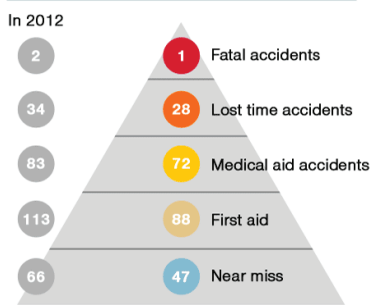
Daily action to progress towards "zero accidents"

Since 2004, the rate for lost-time work accidents has fallen from 7.4 in 2004 to 1.08 in 2013. Since 2011, our rate has included the safety results of our subcontractors. We have therefore reached our target of an accident rate of less than 1.1 (set by the CEO in 2013).

Frequency rate of work accidents (december 2013)



Accidents reported at the end of the 2013 year (01/01/2013 to 31/12/2013)



Since our mining activities began, it is the first year that the number of lost-time accidents has dropped below 30.

However, we must continue our efforts, as we still recorded 28 lost-time accidents across all our Mining BG sites, including subcontractors, and we regret the one fatal accident that occurred.

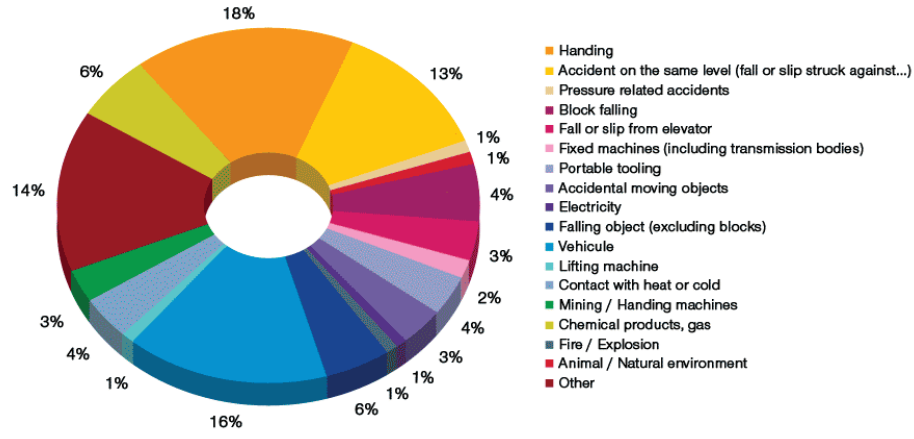
We continue to take daily action to progress towards our target of "zero accidents". In comparison to 2012, we have seen a 25% reduction in lost-time accidents among AREVA employees. The total number of events involving subcontractors has fallen by 7%.



### Main causes of occupational accidents

One third of our accident events involve hands, while the remaining events are equally spread between the lower limbs, upper limbs and face.

Type of accidental event



As for accident causes:

- failure to respect standards was the main cause of accidents,
- rushing work has been a major cause of accidents since 2012,
- other factors have been a lack of understanding by the employees involved and poor work posture,
- further causes have been driving vehicles, manual handling and same-level falls.



## CHAPTER

# COMMITMENTS

### Environment & Biodiversity

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## ■ OUR COMMITMENT TO PRESERVE THE ENVIRONMENT

This commitment aims to strengthen our actions to prevent environmental risks, whether accident-related or chronic, as well as optimize our environmental footprint.



### AREVA's Environmental Policy 2013-2016

AREVA's mining activities follow the group's **Environmental Policy for 2013-2016**. To do this, our teams base their work on current regulatory practices, international standards and the sharing of experience.

This means that at every stage in the lifecycle of a mine, from exploration to site rehabilitation, we have to meet the following challenges:

- optimize the consumption of natural resources and preserve their quality,
- preserve flora and fauna in sensitive biodiversity areas,
- manage the risks linked to changes in land use,
- reduce the potential impact of waste and other industrial disturbances,
- optimize greenhouse gas emissions and thereby contribute to the fight against climate change.

### ■ Changes to our environmental footprint since 2004

Our activities take place over long periods and uranium deposits become depleted as we extract ore, necessarily leading to an increase in requirements in terms of energy and other resources. Our main challenge therefore consists in **optimizing consumption and waste** over time for a fluctuating uranium production level and in order to satisfy a changing regulatory framework.

Ratio	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2013 vs 2012
<b>Water consumed</b> (m <sup>3</sup> /tU)	1589	1428	1679	1574	1070	947	884	979	903	871	- 1,3 %
<b>Fossil energy</b> (MWh/tU)	84	93	110	122	111	86	81	84	81	76	- 6,7 %
<b>Greenhouse gas</b> (Scope 1 - T equivalent CO <sub>2</sub> /tU)	24	28	35	37	33	27	26	28	27	24	- 10,6 %
<b>Electricity consumed</b> (MWh/tU)	28	30	37	35	36	29	27	23	28	30	+ 5,6 %

### Environmental issues in 2013: Biodiversity

All the countries in which we work have regulations and preservation rules concerning biodiversity. Since 2013, with a view to our next reporting cycle, we have been preparing a **specific biodiversity monitoring protocol**, taking into account notably the species list drawn up by the IUCN (International Union for Conservation of Nature).



In addition to environmental impact studies (EIS), we prepare **ecological inventories** and identify **preventive measures** to put in place to preserve these species (e.g. re-routing of piping at our Namibia facilities to preserve the habitat of an endemic lichen species).



**BIODIVERSITY 2012/2013  
STUDIES PERFORMED ON OUR SITES**

**NIGER**

**EXPLORATION AND PRODUCTION**

Biodiversity study to better understand the initial condition of the Imca 25 area (the future activity area).

**KAZAKHSTAN**

**EXPLORATION AND PRODUCTION**

As part of the preparations for ISO 14001 certification of the site, analysis of the project underway and updating of the impact study regarding site expansion.

**CANADA**

**EXPLORATION, PRODUCTION AND POST-MINING**

Environmental impact study for Kiggavik project updated in 2012. The study has two components: a "plan to monitor and reduce impact on land fauna" and a "fish habitat compensation plan".

**MONGOLIA**

**EXPLORATION**

Inventory and assessment of ecological risks and implementation of an environmental management plan.

**FRANCE**

**REHABILITATION AND POST-MINING**

Preparation of files to request exemption from the ban on destroying protecting plant and animal species and their habitats, as part of reclamation work.

**NAMIBIA**

**SITE UNDER MAINTENANCE**

First phase of an environmental impact study for the creation of road access.

**GABON**

**EXPLORATION AND POST-MINING**

Environmental commitments linked to prospecting licenses.

All our sites required biodiversity management plans to be drawn up and implemented. At the end of 2013, 50% of our sites had deployed such plans to better identify potentially exposed species and minimize the impacts on biodiversity that may be linked to:

- the destruction of ground cover,
- the disturbance of habitats due to the creation of open-pit mines, drilling or the construction of roads,
- modifications to the water table and the disturbance of surface water or wet areas,
- impacts associated with rehabilitation work.

Some of our mining license areas are located near areas with rich biodiversity (e.g. mining license for almost 129,000 hectares near the Dorob National Park in Namibia).

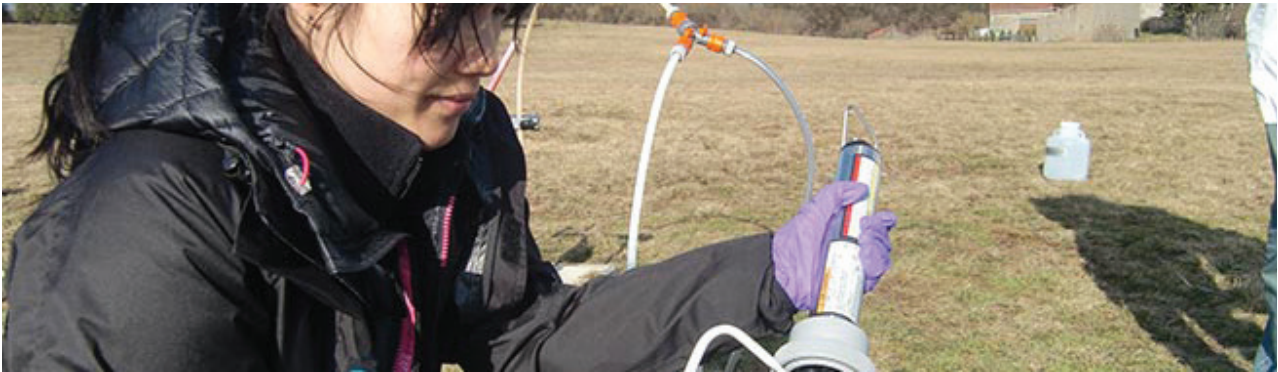
In such cases, we carry out studies and take measures to preserve sensitive areas, working with third parties such as local communities (e.g. *saxaul replanting program*), consultancy firms, university specialists or natural space conservation bodies (e.g. *partnership to set up project to protect gazelles*).

On our sites we also deploy **environmental monitoring systems** to monitor and check the quality of air, soils and water, as well as flora and fauna. We are doing this in a participative way with local communities as part of the Athabasca Working Group in Canada, North Saskatchewan.

mais également de la faune et de la flore. Nous le réalisons de manière participative avec les communautés locales dans le cadre de l'Athabasca Working Group au Canada, Nord Saskatchewan.

## Preventing environmental risks throughout the mining cycle

In order to effectively manage the local environment, it is necessary to understand it better and identify the future solutions that will make it possible to control risks over the long term.



### ■ Environmental research and development

This scientific work, performed by our onsite teams together with numerous research partners, aims to:

- better identify the issues relating to water management and treatment,
- understand, prevent and model the migration of contaminants over the long term,
- act proactively in the face of changes in regulations and the requirements of the authorities,
- develop new tools for sampling, analysis and the understanding of environmental impacts.

Several academic partnerships have been set up to help AREVA in its response to these scientific challenges. This collaborative approach means our R&D teams can enhance their work with the help of new perspectives and skills. It is also an opportunity to improve the legitimacy of reported results.

On post-mining issues, we have established partnerships with institutions including Université Paris VI, Ecole des Mines de Paris, Université de Poitiers, Université de Bruxelles, the University of Manchester, the University of Granada, and the CEA, among others.

### ■ Environmental studies

We conduct environmental studies throughout the life cycle of our mining and industrial projects, whether in response to regulatory requirements or voluntarily in order to better understand the areas on which our work may have an impact.

More specifically, **environmental impact studies** (EIS) are performed for each new mining project and/or whenever a major modification to our industrial facilities is planned. They meet the regulatory requirements in force and must be submitted for public consultation to be approved by the local authorities.

These studies make it possible to map the impacts generated by a new project, improve understanding of the associated environment (e.g. *biodiversity inventory*), identify preventive measures to reduce risks at the source and set preventive measures to be incorporated into our facilities (e.g. *leak detection instrumentation*).



#### EXAMPLES

##### OF STUDIES PERFORMED IN 2012/2013

###### KAZAKHSTAN

(INDUSTRIAL AND MINING ACTIVITIES)

- Environmental impact study for the South Tortkuduk pilot, a new mining project for our Katco subsidiary.
- Study to assess the existing environmental liabilities prior to our activities at the Katco site.

###### MONGOLIA

(EXPLORATION ACTIVITIES)

- Ecological risk study and veterinary expert analysis of the livestock near our activities.

###### NIGER

(INDUSTRIAL AND MINING ACTIVITIES)

- Hydrogeological and hydrogeochemical study.

###### CANADA

(INDUSTRIAL AND MINING ACTIVITIES)

- Technical study on waste rock and monitoring of tailings (McClean)

## ■ Risk management tools

### Risk management tools


Our head office and onsite teams, in all the countries in which we have a presence, participate in **the risk assessment process for 3SE risks** via a mapping process coordinated by the AREVA group Safety, Health, Security and Sustainable Development Department.

The aims of this 3SE mapping are to identify priority issues and sites and guide the inspection and assistance programs for entities. The assessment carried out notably looks at the control of risks related to the facilities, processes and substances used, the performance of 3SE management, compliance with regulations, the control of baselines, the control of changes, and the relevance, implementation and effectiveness of 3SE action plans.

### Hazard studies in our facilities

In order to prevent both technological and natural risks, **hazard studies are regularly conducted** at our « Yellow Cake » ( $U_3O_8$ ).

These aim to identify major risks and the preventive or corrective measures required to minimize them. They are also an opportunity to demonstrate the good practices employed by the teams and promote the sharing of experiences.



**EXAMPLES**

**OF INDUSTRIAL INVESTMENTS FOR THE IMPLEMENTATION OF PREVENTIVE ACTIONS IN 2013**

**KAZAKHSTAN - KATCO INDUSTRIAL SITES :**

project underway to replace the main pipes carrying production liquor between two of our industrial sites several kilometers apart. The aim is to prevent any accidental spillage of these solutions into the environment.

**CANADA - MCCLEAN INDUSTRIAL SITE :**

modifications integrated into the plant development project to minimize the hydrogen explosion risk, which could affect human safety and impact the environment.

### Monitoring environmental events

Similarly to safety events, environmental events are fed back at group level via a specific electronic tool known as AHEAD (AREVA Happened Events Advanced Database). The tool is used to share lessons learned between sites.

**In 2013, we had no environmental events that had an impact outside our sites.** Although we had to manage three leaks at our industrial sites, these had no impact on the outside environment and we were able to perform clean-up operations and share lessons learned between teams.

Three accidental spillages (effluents, acid solution) took place during our operations. They remained within the sites concerned and had no environmental consequences or impact outside our sites. Corrective clean-up measures were taken at the sites and the lessons learned as a result were shared.

Preventing accidental spillages is something our teams have been working on for several years.

### Preparing for emergency situations

**Exercises to prepare for emergency situations** are regularly performed at a local level, and emergency response plans are regularly updated (this took place in 2013 for KATCO in Kazakhstan and COMINAK in Niger). The exercises aim to help us prepare for natural catastrophes, industrial accidents or malicious acts.

These exercises also provide an opportunity to train the various stakeholders (internal and external) and foster their skills and experience, test structures, procedures and equipment, and define new areas for improvement. They also provide an opportunity to share lessons learned, and the experiences from environmental events are shared via electronic tool AHEAD.



### ■ An integrated management system

Work to prevent occupational and environmental risks is carried out at most of our mining sites using a management system that meets the requirements of standards **ISO 14001** (for the environment) and **OHSAS 18001** (for occupational health and safety).

These systems make it possible to set up processes and procedures to control the main risks encountered on sites, prioritize them, monitor them, take corrective action and make improvements.

The systems are audited every year by an external third party.

Location of our sites	Certification status on December 31, 2013	
	ISO 14001	OHSAS 18001
Australia	Certified	Certified
Canada	Certified	Certified
France	Certified	Certified
Kazakhstan	Target for 2015	Target for 2015
Mongolia	Target for 2015/2016	Target for 2015/2016
Namibia	Non-certified	Non-certified
Niger	Certified	Certified

## ■ WATERS

### Main impacts

The main environmental impacts in this case concern the quantity of natural water taken, the quality of industrial effluents released into the environment (with regard to the authorized regulatory limits) and the optimization of the uptake and consumption of this resource.

The water used for our industrial and mining processes comes from various sources: recycled industrial water, surface water (lakes, rivers, the sea, etc.), groundwater (aquifers) and residual mine drainage water (pit water).

### Consumption in 2013

Quantity of water taken by source in 2013 - m <sup>3</sup>	2013	2012	2011
Volume of water taken from surface waters (including rain water)	228 775	239 541	110 927
Volume of water taken from the distribution network	194 625	445 448	1 561 462
Volume of pit water taken	5 548 605	7 152 852	6 738 599
Volume of groundwater taken via pumping wells	6 841 845	6 144 581	5 420 079

Gross water consumption decreased by 1.3% in relation to 2012 for AREVA's mining activities as a whole. This result was due to the following:

- The KATCO site in Kazakhstan testing an effluent recycling process that made it possible to reduce the consumption of groundwater.
- The SOMAÏR and COMINAK sites in Niger continuing their efforts to reduce and optimize water requirements. These actions are monitored by "water/energy committees" and follow on from the introduction of industrial processes that consume fewer resources.
- Maintenance at the Trekkopje site in Namibia and the temporary shutdown of our industrial facilities in Niger following the SOMAÏR attack.

Quantity of water consumed in 2013 - m <sup>3</sup>	2013	2012	2011
Total volume of water consumed	7 251 308	7 393 125	7 605 854

Quantity of water recycled in 2013 - m <sup>3</sup>	2013	2012	2011
Volume of pit water used on site	4 008 400	4 629 024	4 434 890

#### ■ Water quality and consumption monitoring campaign

We are running campaigns to monitor the quality and quantity of aquifers using a piezometric monitoring system upstream and downstream of our activities

In addition, hydrogeological and hydrogeochemical studies are being carried out by external consultancy firms as well as by our internal specialists and experts (team of hydrogeologists). At the same time, action is being taken to reduce radioactive water discharges and/or those containing conventional chemicals, commonly referred to as industrial effluents, at the source and minimize their toxicity.



#### TO GO FURTHER

Since 2003, a working group called "Aman" has been carrying out periodic additional monitoring campaigns on a wider scale than those conducted by site operators. The working group is mainly composed of geologists and mining hydrogeologists, with the support of environmental specialists.

Its aim is to construct a forecasting model for water resources, better understand regional hydrogeology and guarantee a quality supply to sites and nearby towns.

**News for 2013:** hydrogeological and hydrogeochemical studies were carried out on behalf of SOMAÏR and COMINAK.

## ■ MANAGEMENT OF INDUSTRIAL WASTE AND EMISSIONS

### Conventional waste

Conventional waste is related to normal activity (as part of normal production) or exceptional activity (e.g. as part of works, projects, etc.) and falls into two categories:

- hazardous waste (e.g. asbestos, batteries, packaging for toxic substances, electronic waste, etc.),
- non-hazardous waste (e.g. household waste, rubble, scrap metal, tires, plastic, etc.).

Waste is said to be recovered when it is recycled, reused, processed or used to generate heat or energy. This is the case for example at the Katco site in Kazakhstan: 68% of conventional waste was recovered in 2013.

The overall tonnage of conventional waste increased by 20% in relation to 2012 for AREVA's mining activities as a whole.

Quantity of conventional waste - metric tons	2013	2012	2011
Quantity of hazardous waste	6 459	4 109	3 358
Quantity of non-hazardous waste	6 402	5 885	3 143

This change was partly due to the waste generated by the attack at our SOMAÏR site in May 2013 and the work required to reconstruct our facilities. In addition, 2013 saw asbestos removal operations at the SOMAÏR site in Niger, in accordance with French standards. The work was done by a specialist consultancy firm and qualified teams.



Several of our sites are in locations where there are no regional systems for processing and recovering waste. Currently, the waste is stored on our sites in accordance with local regulations and the required environmental protection measures.

## Emissions to air and water

- **Emissions into water:** Industrial effluents are either stored in dedicated ponds (e.g. at our Niger sites) or processed via dedicated treatment stations (e.g. downstream treatment of stored processing waste from our rehabilitated former sites in France).
- **Emissions into the air:** The type and quantity of emissions into the air and industrial effluent emissions vary depending on the process in use. These emissions are identified, quantified and managed in line with the regulations in force. Atmospheric emissions mainly concern greenhouse gases such as carbon dioxide (CO<sub>2</sub>) or sulfur oxides (SO<sub>x</sub>) or nitrogen oxides (NO<sub>x</sub>).



The impact of our emissions is analyzed and assessed as part of impact studies. Eco-design studies are carried out for new projects and reduction measures are taken (e.g. gas scrubber for the sulfuric acid unit in Niger).

Atmospheric emissions (across all sites)	Unit	2013	2012	2011
Direct greenhouse gas emissions (GHG) - SCOPE 1	Metric tons CO <sub>2</sub> equivalent	202 302	227 726	215 509
Direct emissions of greenhouse gases (GES) linked to the transportation of freight and personnel - SCOPE 1	Metric tons CO <sub>2</sub> equivalent	16 876	16 600	15 528
Indirect greenhouse gas emissions - SCOPE 2	Metric tons CO <sub>2</sub> equivalent	197 608	193 724	123 110
Emissions of ozone-depleting gases	Kilograms CFC-111 equivalent	55	75	135
Quantity of SO <sub>x</sub> emissions	Metric tons SO <sub>x</sub>	1 075	1 085	1 767
Emissions of volatile organic compounds (VOCs)	Kilograms	1 094 975	1 258 531	1 462 616

## FORMER MINING SITES

As part of mine rehabilitation, the operator aims to limit the impact on the population and environment to a level as low as reasonably achievable, avoiding the dispersion of radioactive substances by:

- establishing a rehabilitation project (studies, options and costs),
- placing the site in a safe condition/performing site clean-up,
- dismantling the facilities,
- installing radiometric coverage where necessary,
- performing remodeling and revegetation,
- implementing the environmental and radiological monitoring plan.

## Environmental monitoring

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Monitoring the environment involves checking all the ways in which uranium and its decay products may be transferred at former mining sites and in the surrounding area. This mainly means monitoring water, the atmosphere, the food chain and plants.

**In 2013, 6,577 analyses were performed, covering air, water and the food chain.**

- **Air monitoring:** Air monitoring chiefly concerns measuring exposure to ambient radioactivity, namely ionizing radiation and the air inhaled. Measurements are taken continuously, both at the site and in the nearby area, using specific dosimeters.
- **Water monitoring:** Hydrological and hydrogeological studies are performed at sites before mining operations even begin, allowing better understanding of the environment type and the composition of local water. On certain sites, the water undergoes treatment every year before being discharged back into the environment to ensure it meets the environmental standards in force. Our experts are currently studying various water treatment processes. One process they have implemented, for example, is so-called "passive" treatment using limestone drains, and they have also optimized the physical-chemical treatment method.
- **Monitoring of plants and the food chain.** In addition, sampling and analysis are regularly carried out on plants and other components of the food chain, including aquatic and land fauna, aquatic flora, the fruit and vegetables produced in nearby gardens, and the milk supplied by animals that have grazed in meadows near sites or drunk from receiving water courses.

## Waste rock and tailings: the case in France

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**Mining tailings** are the part of the finely crushed ore which does not contain uranium, or only contains very little, and is produced following the separation of rock and uranium in the ore processing plant (production of uranium concentrate). They resemble very fine sands and contain 70% of initial radioactivity. They are stored near processing plants. Their storage and inspection make up a considerable portion of rehabilitation and monitoring operations.

**Waste rock** is made up of earth, sand or rocks which do not contain mineable uranium ore, or contain no uranium at all. It still needs to be extracted, however, to access the ore itself. These substances are not radioactive, or have a very low level of radioactivity. They are stored in former mining sites.

Under the PNGMDR (Plan National de Gestion des Matières et Déchets Radioactifs - French National Plan for the Management of Radioactive Materials and Waste), AREVA is required to continue the study of the evolution of ore tailings stored in France. This action must ultimately be accompanied by the development of models to predict the long-term impact of the tailings, taking into account a normal scenario and degraded scenarios.

Also under the PNGMDR, AREVA has conducted sampling campaigns on several rehabilitated sites to characterize the evolution of waste rock storage and its potential risk for the natural environment. A multi-year study is ongoing to develop predictive models of the migration of uranium from the rock piles to the environment.



## CHAPTER

# COMMITMENTS

## Community involvement

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Extract from Responsible Development  
report 2013/2014 on Areva's Mining Activities

The complete report is downloadable on :  
[www.csr-mines.aveva.com](http://www.csr-mines.aveva.com)

## STRATEGIC ORIENTATION

Given the diversity of contexts, past events within our activities and the nature of our future projects, our aim is to promote a trusting dialog and long-term partnership with our stakeholders.



2013-2015 is a transition period in setting our long-term community involvement strategy. During this period of reflection, we will work with our head office and onsite teams on the following areas:

### Governance:

- Establish a managerial reporting system and map societal objectives for the period up to 2020.
- Continue to run the Mining Social Committees (CSM - Comités Sociétaux Mines) and provide guidelines for community investments associated with AREVA's mining activities.
- Identify and draw up, in a collaborative manner, the next stage of existing partnerships or update/create new agreements for socio-economic development projects.

### Prevent short- and medium-term risks:

- Update our knowledge base regarding the regions in which we work, notably through societal impact studies (e.g. societal impact study scheduled for 2014/2015 for the Imouraren project in Niger), and map stakeholders.
- Formalize our societal lessons learned, particularly those learned from post-mining, on an international level.
- Update our risk mapping tools and complaint reporting systems.

### Societal monitoring:

- Set and update reporting protocols and tools based on international guidelines and standards (GRI, ICMM).

## COMMUNITY INVESTMENTS

### AREVA's Mining Social Committees (CSM)

Since February 1, 2013, the Mining Social Committees of the AREVA Mining Business Group have had the task of identifying (on an internal basis by country):

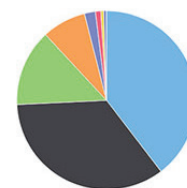
- priority community investment projects,
- the outlook for local development and stakeholder engagement,
- multi-year plans and associated budgets.

Five CSM are now in place in Niger, Gabon, Mongolia, Namibia and Kazakhstan.

They bring together the managing directors of subsidiaries, local social leaders, and coordination and support teams from head office. Meetings are held more or less frequently depending on the country, but around three times a year.

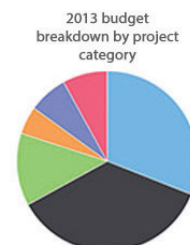
CSM budgets, which come from the Societal Responsibility Department at AREVA Mines, complement the budgets allocated by individual subsidiaries to community investment and sponsorship programs.

Budget breakdown  
by country



#### Funds spent in 2013

In 2013, AREVA's mining activities (*head office funds passed down to subsidiaries*) advanced 3.5 million euros to finance more than 100 social development and sponsorship projects.



## Local governance

Our teams work in partnerships with local stakeholders via multi-party bodies to lead consultations and manage community and business investment programs.

### ■ NIGER - Bilateral steering committee (CBO - Conseil Bilatéral d'Orientation)

- Created in May 2006 to help strengthen the local governance of societal projects for the benefit of populations.
- Brings together local elected officials, relevant administrations and civil society alongside AREVA. They define local development policies, identify priority areas for intervention, issue opinions on projects and provide financing for the latter.
- AREVA's mining companies in Niger make an annual contribution of 750,000 euros to the CBO.
- The agreement that governs this representative body has been under negotiation since 2013.

### ■ CANADA - Athabasca Working Group (AWG)

- Created in 1993, this multi-party body is composed of members of the mining companies (AREVA Resources Canada Inc. and Cameco Corporation) and six communities in the north of Saskatchewan province.
- In 2012, these stakeholders have begun to renegotiate the "Impact Management Agreement", an agreement that since 2001 has covered all aspects relating to the impact of mining activities on the region: employment, training, environmental protection and benefits for the communities.
- A report is published every year giving the investments made, the impact of community programs and actions taken.

### ■ FRANCE – AREVADELFI

- The group Local Economic Development Department (DDEL - Direction du développement économique local) supports small- and medium-sized businesses and industries that generate work and economic diversity within their region. It is assisted in this by Arevadelfi, a development capital company created by AREVA that has already supported 120 projects over the past 10 years, investing 12 million euros and generating 2,500 jobs across all the group's industrial areas.
- Within AREVA MINES activity, AREVADELFI is more specifically involved in the Limousin region, co-financing innovative industrial companies in the area of influence of the Bessines site. The project involves numerous players: the local business cluster, co-investors, the local authorities, members of the Arevadelfi analysis committee and the beneficiaries.

## Examples of societal projects supported by AREVA's mining activities

### CANADA – Career training

- Allows North Saskatchewan communities to access professional training leading to qualifications and local jobs.
- This scholarship program enables beneficiaries to complete university or vocational courses.
- AREVA financing: 69,000 euros/year.



#### GABON – Professional training in construction trades

- Trains young unqualified adults in construction trades (plumbing, the electrical trade, welding, etc.) and integrates them into new-build housing projects (Mounana 200 project) to provide them with a profession.
- The project involves numerous players: the Moanda Technical and Professional Training Center, the Mounana Town Hall, Mounana community leaders, the Mounana Association of Young Entrepreneurs and the BESSA Association.
- AREVA financing: 9,000 euros.

#### NAMIBIA – Microloan facility

- Project run in partnership with the Erongo Development Foundation, providing microloans for entrepreneurial projects carried out by the population in the Erongo province.
- AREVA financing: 15,000 euros over 2 years.

#### KAZAKHSTAN – Children's center

- Facility under construction with a capacity of 50 places for pre-school children.
- This project is aimed at populations in the Suzak district in South Kazakhstan and aims to reduce inequalities in access to education.
- AREVA financing: almost 770,000 euros.

#### NIGER – IRHAZER project

- Hydro-agricultural and pastoral development project in northern Niger to improve food security in desert areas.
- A pilot project is underway and aims to cover 100 hectares for the benefit of 200 families.
- The project involves our employees, local communities, the authorities and farmers.
- AREVA financing: 17 million euros over 5 years.

#### Mongolia – Ophthalmology clinic

- Ophthalmic problems are recurrent and there are limited possibilities for diagnosis and care. This project involved providing and installing equipment and providing staff training for its use at the Sainshand hospital in the Dornogobi province.
- AREVA financing: 45,000 euros

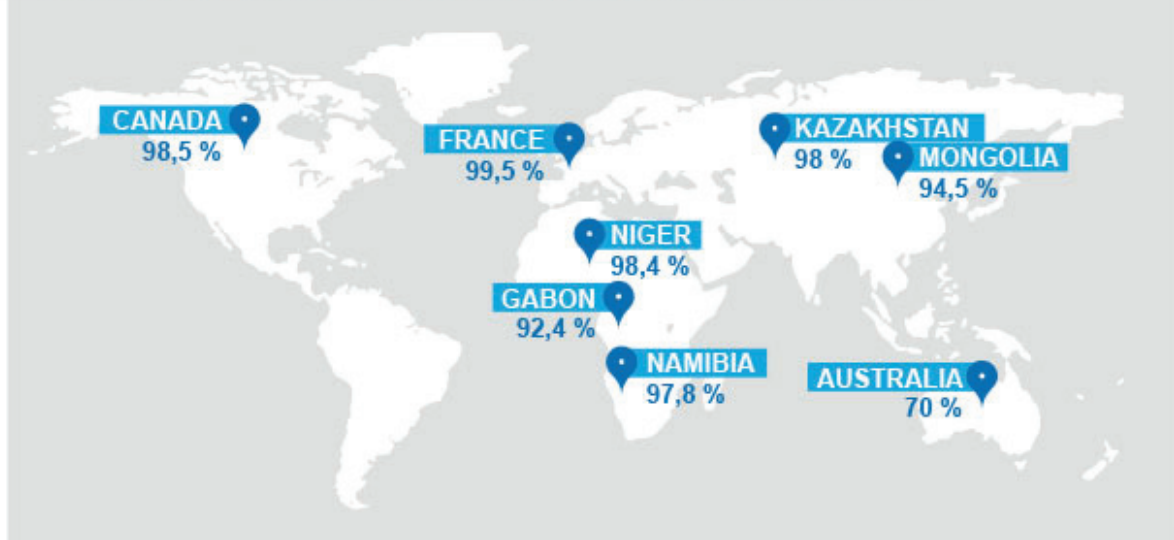
## PROMOTING THE DEVELOPMENT OF A LOCAL SOCIO-ECONOMIC NETWORK

### Recruitment of employees

AREVA's social policy expresses a commitment to promoting the local recruitment of our employees.



#### PROPORTION OF LOCAL EMPLOYEES (BORN LOCALLY OR WITH LEGAL PERMANENT RESIDENCE, 2013)



	CANADA	FRANCE	KAZAKHSTAN	MONGOLIA	NIGER	GABON	NAMIBIA	AUSTRALIA
Temporary employees	0	0	0	0	0	0	0	0
Permanent contract	392	406	1141	121	2654	56	45	17
Fixed-term contract	19	7	93	62	208	23	0	0
Apprenticeship contract	0	17	0	0	0	0	0	0
Trainee	0	8	0	0	0	0	0	0

We also pay particular attention to indigenous communities, which may find it difficult to take advantage of our employment opportunities. This is an issue that arose in Canada, for example, in North Saskatchewan, a region that has seen numerous initiatives to promote access to employment and select local entrepreneurs as a preference.

Currently, across all the countries in which we work, the majority of employees (at all levels of the organization) are of local nationality. The proportion of local managers is 60% (consolidated Mining BG figure – 2013 – outside France).

### Local purchasing

The fact that preference is given to local suppliers during the bidding process enables the creation of a network of companies and numerous jobs in the region where the mining site is located. **Today, 49% of our purchasing volume comes from the countries in which we are based, and 48% of our suppliers are local.**

It is not always easy to define the meaning of "local", and the term varies depending on the country, its stage of economic development and the population density around the site. AREVA has therefore implemented specific purchasing policies in the countries in which it has mining sites.

For example, in Canada, for similar contract bids, preference is systematically given to "local" northern suppliers, as per their status under provincial legislation in Saskatchewan. A company has "local" northern status if it belongs to or operates within the community living in North Saskatchewan. Service contracts such as site catering or monitoring, which require a large workforce, have only been awarded to suppliers from this region.

In the same way as in Mongolia, criteria linked to community involvement are included by AREVA in the evaluation grids for catering and camp management bids. Contractual commitments become key indicators, which are monitored over time. For example, every three months the local supply provided by the supplier is evaluated. The proportion of local food purchases and the traceability of the countries of origin and processing are examined.



#### TO GO FURTHER

The unfavorable economic context that our mining activities are currently experiencing is a complex issue to manage in terms of purchasing contracts.

In certain countries in which we work, we have had to optimize contractual commitments with some of our local suppliers and subcontractors from 2013.

**We are aware that we are an important economic player for the regions where we are based. Our teams are working hard alongside our partners to find the best solution.**

### Revenue from the extractive sectors

Through our support for the Extractive Industries Transparency Initiative (EITI), AREVA has continued to demonstrate its commitment to greater transparency in payments made to states in relation to the management of mining resources.

Niger, Mongolia and Kazakhstan, countries in which the group is engaged in mining activities, are members of EITI. In these countries, our mining subsidiaries participate in the local multi-party process and declare payment of taxes, mining rights and taxes on profits using specific declaration forms. The total revenue is presented officially on the EITI website.



#### IMPACT OF OUR PRESENCE IN THE REGIONS:

Focus on AREVA Resources Canada – north Saskatchewan

Since 1980, the uranium mining industry has spent almost 7.5 billion dollars on developing mining projects within the province of Saskatchewan, in addition to exploration spending.

AREVA Resources Canada is one of the main employers in North Saskatchewan and generated more than 24 million dollars in wages in 2013 through direct employment, sub-contracting and the development of local business.

AREVA's social and integration policy aims to strengthen links with Saskatchewan communities and ensure that the company is constantly involved in professional training and employment programs for the region's inhabitants.

AREVA contributes more than 100,000 Canadian dollars every year to education as part of the northern students' bursary program, enabling these students to have better opportunities in their academic and professional careers.

**As part of the "Community Vitality" partnership and monitoring program**, a study was performed in May 2013 to measure the impacts and advantages that northern communities can enjoy as a result of the economic activity generated by the uranium mining industry.

The study found that:

- 832 northern inhabitants are directly employed by the uranium industry.
- There are 900 additional jobs thanks to long-term contracts.
- The average salary for northern inhabitants is 77,500 dollars.
- The uranium mining industry spends 1.7 million Canadian dollars every year on community investments (including bursaries and donations).

*"Community Vitality" is a Canadian concept. It represents a community's capacity to move forward in a sustainable way through positive social, economic and environmental impact.*

*It is based on relationships between inhabitants, private or public companies and civil society organizations that foster individual and collective well-being.*





## CHAPTER

# COMMITMENTS

## Commitment to employees

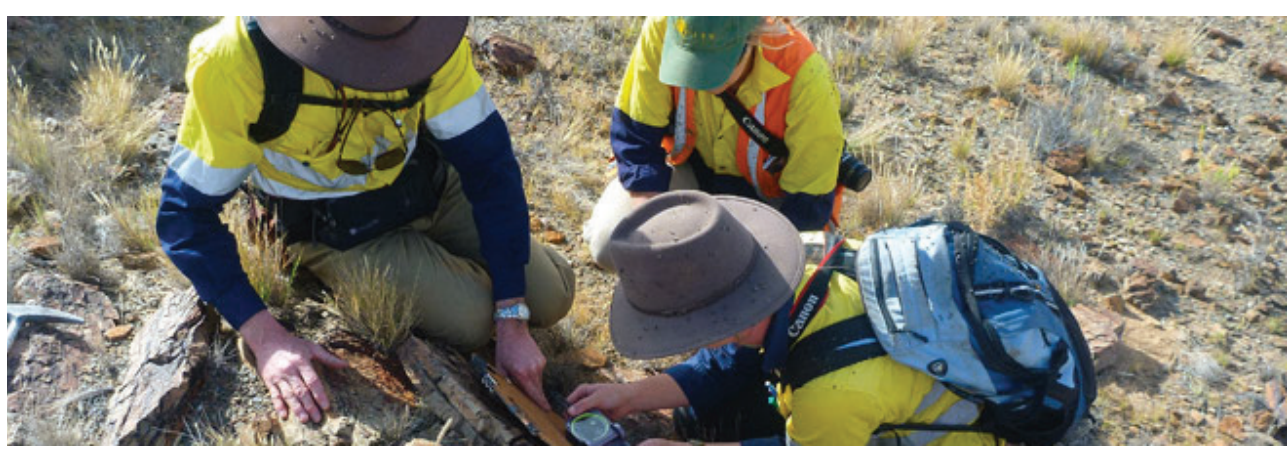
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■ **STRATEGIC ORIENTATIONS 2013-2016**

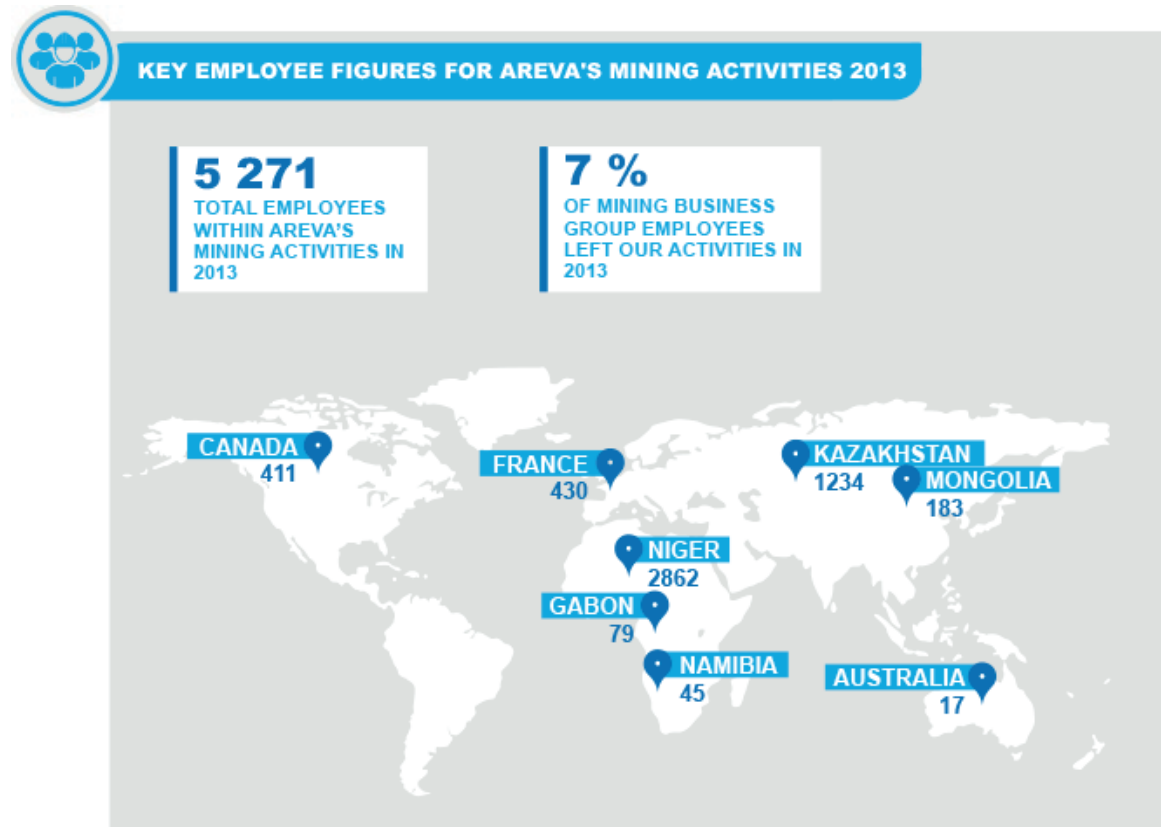
Our commitment to employees in 2013 within the scope of mining activities has seen the strengthening of policies to improve quality of life at work. This has been achieved in areas relating to work-life balance, psycho-social risks and support for people with disabilities.



**AREVA "Action 2016: Men and women"**

« **People** » constitutes one of the five pillars of the group's strategic plan, "Action 2016". This strategic area aims to anticipate future needs in terms of skills, promote mobility within the group and offer a wide range of professional training, as well as ensure progress is made towards the successful implementation of our pro-diversity policy.

■ **Total employees for AREVA's mining activities**



## Mining activities roadmap

A note by the members of the AREVA Mining Business Group Management Committee, dated February 11, 2013, set diversity objectives for the group and formalized this commitment at the highest managerial level. The note was communicated to managers and is available to all employees on the intranet. These views were also presented to the AREVA Mines staff representative bodies.

### ■ Gender balance in the workplace

With regard to gender balance in our teams, the indicators in our mining activities are encouraging: women make up 35% of the workforce in France and **23% of the AREVA Mines Board of Directors** (40% of whom are AREVA employees). However, much work remains to be done to improve the overall numbers of women in our mining activities abroad (13%), by ensuring that women are promoted at all levels of the organization, and particularly in Management Committees, to reach AREVA's target of 26%.

### ■ Knowledge transfer

We aim to rigorously manage our technical know-how and expertise, ensuring knowledge is transferred. We do this by paying particular attention to the Mining Business Group pool of experts, maintaining and consolidating our work-study figures to contribute effectively to the professional integration of young people and preparing for the future.

### ■ The employment of people with disabilities

Our objectives are to improve our **employment rate for people with disabilities (2%)**, recruit and integrate all talents by favoring skills and raise awareness about disability among employees and management.

### ■ Social, ethnic and cultural diversity

We aim to develop local skills and promote mobility in order to reflect the international and multicultural dimension of our mining activities.

## New "Management Training Cycle"

In 2013, we updated our support scheme for engineers and managers, known as the "Management Training Cycle". The annual review now takes place on two separate occasions during the year:

- a performance review, in which the year's performance is evaluated and targets are set for the year to come (**in 2013: 99.5% of engineers and managers, 86.7% of non-managers**);
- a development review, in which the training plan is drawn up (technical, managerial, expertise, industrial performance training, etc.).

## ■ KNOWLEDGE TRANSFER

### Access to Training

#### ■ Training Passport

One of the tools offered is the Training Passport, which offers an average of 30 hours of training per year per employee. In the same way, in France the "Droit Individuel à la Formation" (DIF - a system offering individual entitlement to training) offers 20 hours of training credits per year on the employee's initiative.



#### KEY FIGURES

Training plan share: **8,763 hours** - 40% are dedicated to **technical/functional knowledge and disciplines**.

DIF share: **461 hours** - 78% are dedicated to **learning foreign languages**

## ■ Mining College

The AREVA Mining College offers the only technical training courses of their kind in France for activities related to the uranium mining cycle. Founded in 2007, the objective of the Mining College was initially to train and develop the professional skills of engineers newly recruited by the Mining Business Group. Today, our needs have evolved towards skills strengthening and development, particularly in key disciplines.

The Mining College is for:

- Mining Business Group engineers, managers and technicians from technical or support functions;
- employees of other AREVA entities who need to learn a technical skill in which the Mining College provides training, as part of a move to the group's mining activities for the purposes of job mobility.

With a view to maintaining a high level of performance, the new 2013/2014 training program aims to:

- meet the operational needs of sites,
- adapt to changes in our technical activities,
- help transfer our expertise.



### THE MINING COLLEGE

- **13 modules** divided into 21 theoretical and practical training **sessions**.
- Trainers who are **experts and specialists** in our activities.
- Courses deployed across **all of our sites**.
- An **internal certification** system.

## Promoting age diversity



### A SIGNIFICANT POPULATION OF OLDER WORKERS

Almost 36% of employees older than 50.

The Areva group cross-generation contract was signed in August 2013.

The most experienced employees are identified for career reviews (50+) or experience reviews (55+).

#### AGE PYRAMID (employees in France)

AGE < 25	2%
AGE 25 - 34	31%
AGE 34 - 44	20%
AGE 45 - 54	23%
55 AND OVER	24%

Our policy with regard to older employees aims to harness the value of our most experienced workers by ensuring knowledge is passed on. These employees benefit from support to manage their careers more effectively, in a context in which people are now working for longer and planning is needed to fulfil future skills requirements.

With regard to young people, since 2005 the group has been committed to promoting work-study programs, offering annual apprenticeship and vocational training opportunities to young people and jobseekers in France. The aim for 2013 is to maintain the level of work-study participants at 5% of our employees in France.

## College of Experts in 2013



The Mining Business Group has to mobilize all of its expertise to support its technological excellence. To achieve this, it relies on a "college of experts" system. Highly integrated into the operational teams, these experts continually develop their expertise through the conduct of their missions.

Our activities count **55 experts** including **18 newly identified** in 2013 (following the experts renewal campaign), **five promotions to level 2** and **two to level 3**.

The results of the 2013 campaign show a **greater international diversification** of the College of Experts. They are also in line with the geographic diversity goal set by the Mining Business Group, to better meet the needs for specific local knowledge of the sites.

While the France-based experts form the majority (69%), six other countries are now represented: Canada, United States, Niger, Kazakhstan, Gabon, Australia. Guide for reporting events related to occupational health and safety, the environment, and radiation protection in mining activities;

The Mining Business Group now counts:

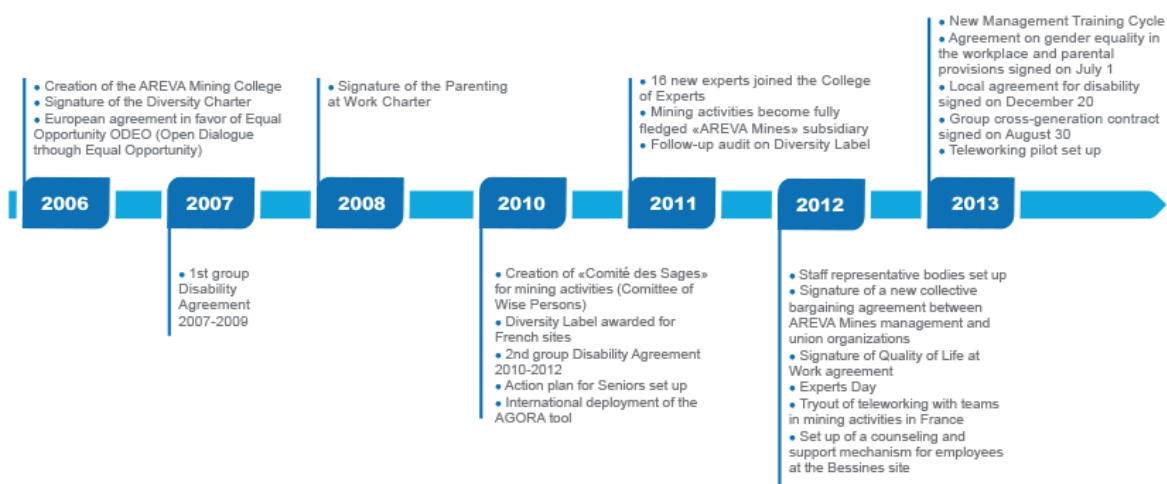
- 32 level-1 experts, representing 4 % of the Group-wide College of Experts ;
- 19 level-2 experts, representing 6 % of the Group-wide College of Senior Experts ;
- 4 experts de niveau 3, representing 12 % of the Group-wide College of Level-3 Experts.

In addition, in order to more actively promote operational know-how, a complementary system of "**Specialists**" has been created within the Group. Nine of these specialist profiles have been identified within our activities, some of whom will be able to join the College of Experts in the future.

## ■ QUALITY OF LIFE AT WORK AND EQUAL OPPORTUNITIES



### Program for work-life balance



#### ■ Work-life balance

The issue of work-life balance occupies an important place in the QVT agreement. Following the signature in 2008 of the parenting at work charter, several changes have been made: more creches have been set up, a pre- and post- maternity leave review has been introduced and pay is continued during paternity leave.

#### ■ Teleworking

On May 31, 2012, AREVA signed a "Quality of life at work" (QVT) agreement with labor and management. In July 2013, an amendment was made to include a clause on "teleworking", leading to the subsequent introduction of a pilot teleworking scheme at the AREVA Mines sites in France. This scheme has been confirmed for 2014 following the success of the pilot.

### ■ The prevention of psycho-social risks during organizational changes

The QVT agreement also launched the drafting of common guidelines for all AREVA group entities to evaluate the human impact of organizational changes, as well as the creation, in France, of a joint national observatory for quality of life at work.

Any organizational changes are made with the participation of staff representative bodies (within varying notice periods enshrined in a collective bargaining agreement) and a presentation is given to the Site Committee (Comité d'Établissement).

Any project that requires significant development and changes to working conditions must be given special attention and examined in terms of its psycho-social impact, using an analysis table comprising around 20 elements (e.g. *clarity of roles, change management, skills development, etc.*).

### ■ Employee benefits

The AREVA Mines collective agreement signed in 2012 governs the relationship between the company and its employees and demonstrates the common willingness of the company and union organizations to maintain a good level of employee benefits at its French sites. The agreement deals with all provisions relating to union law and management-labor dialog, careers and professional development, working hours including leave and absences, health and contingency costs, retirement management, etc.

## Equal opportunities

Promoting diversity is vital to be able to guarantee respect for the cultures and differences of all our employees. This is a multi-faceted commitment that simultaneously covers the development of gender balance in the workplace, support for employees with disabilities, and diversity in terms of age, and social, ethnic and cultural background. As part of this commitment, in 2013 AREVA's mining activities underwent an audit to renew its Diversity Label certification at its French entities.

### ■ Gender balance in the workplace



#### Agreement on gender equality and parental provisions dated July 1, 2013

This agreement aims to make the following provisions within the French entities of AREVA's mining activities:

- equivalent remuneration levels for men and women;
- neutralization of the impact of maternity or adoption leave when assessing the performance of managers for their variable share (bonus) and for individual raises;
- pre- and post-leave reviews for maternity/adoption/parental leave;
- adjustments to working conditions and hours during pregnancy;
- use of the leave entitlement account (CET) to finance full-time parental leave;
- reconsideration of working hours.



### Equality budget

An equality budget of 0.05% allows salary adjustment in the event of a discrepancy for women and older employees.

equa

	Operators	Technicians	Administrative staff	Supervisors	Engineers and Managers
Ratio of female/male basic salary by employee category for 2013 (France)	1.12	0.98	0.9	0.92	0.87

A presentation is given to union organizations as part of the obligatory annual negotiations.

### ■ Provision for people with disabilities

On July 4<sup>th</sup>, 2013, a "disability agreement" was signed for the period 2013-2016. The agreement covers the recruitment, integration and training of employees with disabilities, as well as support for the supported employment sector, awareness-raising actions and employee retention measures.

The main commitments formalized for the duration of the agreement include a **1.5% recruitment target for workers with disabilities** (in relation to total recruitments, proportional to group commitments).



## CHAPTER

# COMMITMENTS

Relationships with stakeholders

Extract from Responsible Development  
report 2013/2014 on Areva's Mining Activities

The complete report is downloadable on :  
[www.csr-mines.aveva.com](http://www.csr-mines.aveva.com)



## ■ COMMITMENTS TO OUR STAKEHOLDERS

In each of the countries in which we operate, dialog and consultation structures are set up and led by the subsidiary teams at AREVA Mines, staff representative bodies, community representatives and civil society, among others.



They form part of an approach that aims to make a long-term commitment to our local and internal stakeholders. They are also based on the need to identify these stakeholders, understand their expectations and concerns, and initiate actions that will establish trust and cooperation for mutual development.

### Identification of stakeholders

Based on the nature of their work and their organization within the group, AREVA's mining activities have identified four major areas of stakeholder relations:

- **Groups of stakeholders with an international scope** and a special relationship with the head office entities of AREVA Mines or the AREVA group (e.g. customers)
- **Groups of local or national stakeholders** directly interfacing with our subsidiaries in the various countries in which the Mining Business Group is present (e.g. communities, authorities)
- **Groups of internal stakeholders** who may be in contact with both the head office and/or our sites in France and abroad (e.g. staff representative bodies)
- **Categories of stakeholders that may have cross-departmental relations** with all our entities (e.g. non-governmental organizations)

## ■ Understand our organization

AREVA Mines has an organizational system that allows it to manage interfaces with the various categories of stakeholder:

Examples of stakeholder categories	Interfaces with AREVA Mines	
	AREVA Mines teams	Entities supporting teams or in direct contact
Communities, elected officials and other local players, partners for community investments, etc.	Members of Mining Social Committees (composed of subsidiary directors, local social leaders and coordination teams from the AREVA Mines head office)	<p>AREVA Mines Safety and Sustainable Development Department</p> <p>AREVA Mines Ethics Officer (Legal Department)</p>
Governments, authorities, JV partners, professional organizations for the sector, administrators, etc.	Members of the Mining Business Group Management Committee	
Customers, business partners, the financial community, etc.	Group sales teams and Strategy and Financial Departments	
Employees, union organizations, students, etc.	Human Resources team	
The media	Communications team	
Subcontractors, suppliers, etc.	Purchasing team	
Observers, the CSR community, voluntary initiative support bodies and professional organizations for the sector, NGOs/associations, etc.	Corporate Social Responsibility team	
R&D partners (universities, schools, research centers, etc.)	Corporate R&D team	

## ■ Frameworks of dialogue and consultation

Several frameworks allow us to identify the type of groups with whom we consult and work:

- **Regulations** in force, whether national or international. These may designate, depending on the type of mining project, the stakeholders to be consulted as part of a clearly established dialog and consultation process: e.g. the Site Monitoring Committee in France for post-mining rehabilitation and monitoring projects. Other groups to be consulted may include stakeholders such as (but not limited to) the authorities, residents' associations or staff representative bodies.
- **Mining agreements**, or even the contractual elements in projects, may lay down a framework for investments for the benefit of communities or other local players with a view to socio-economic development.
- **Frameworks and standards set** by professional organizations in the sector and bodies in charge of voluntary transparency and responsibility initiatives.
- **"Stakeholder mapping" and risk management exercises** (e.g. *the business risk model*) which constitute internal methodological principles. These systems help our teams identify and analyze the commitments to be made with regard to groups impacted by our mining and industrial projects.

## Employee relations

Our employees are able to enter discussions with management, whether on the subject of their personal development, health or safety at work, or to find out about company issues or negotiate collective bargaining agreements.



There are several ways in which they may open up these dialog and communication channels:

- **Members of the Mining Business Group Management Committee (CODIR):** meetings between directors and employees (twice-yearly during the "Major Meetings", in which the company presents its issues, activities, and safety and performance results; during "breakfast meetings" organized for a small group of employees with one CODIR member). AREVA's Executive Board members and top managers can also be contacted via Q&A sessions organized on the company intranet.
- **Staff representative bodies**, including but not restricted to: meetings of staff delegates, the Works Council, the Health, Safety and Working Conditions Committees (CHSCT), which take place regularly and whose minutes may be shared with employees. At these meetings, all issues relating to company life and the implementation of the collective bargaining agreement are discussed, generally in the presence of members of the Human Resources team.
- Elected officials on the **AREVA Mines Board of Directors**.
- **Annual reviews**, which are meetings between managers and their teams to set individual development plans and annual performance levels.
- **Employee Opinion Surveys** (every two years).
- **Internal communications** provision such as the intranet platform, company events, etc.

These provisions are enshrined under the voluntary internal initiatives and local legislative mechanisms in force in all countries.



### AGREEMENTS SIGNED IN 2013

- Agreement on gender equality in the workplace and parental provisions within AREVA Mines SA (July 1, 2013)
- Amendment to quality of life at work agreement (July 4, 2013)
- Cross-generation contract (August 30, 2013)
- AREVA Mines 2013-2016 company agreement to promote the employment of people with disabilities (December 20, 2013)

The AREVA Mines staff representative bodies (IRP - Instances Représentatives du Personnel) of AREVA Mines are made up of a **Central Works Council (CCE - Comité Central d'Entreprise)** and **two Site Committees (Comités d'établissement)** for the Paris and Bessines sites. The latter constitute consultation and information bodies that also make proposals concerning the running of the company. Their members are elected for three years.

The Central Works Council includes representatives from each Site Committee. It is informed about and consulted on major economic and financial projects.

**Other staff representative bodies** include: Staff Representatives, elected for three years, who ensure that employee rights are upheld; Union Representatives and Health, Safety and Working Conditions Committee (CHSCT) representatives.

Staff representatives have access to the AREVA Mines SA Board of Directors in order to facilitate dialog and consultation with regard to all employee concerns.

In addition, joint working groups are regularly set up between union organizations, staff and management to deal with certain specific subjects. Union representatives are regularly given the opportunity to carry out training to acquire skills in employment law, the management of representative bodies and the issues and risks specific to AREVA's mining activities.

### ■ Promoting dialog within the Health, Safety and Working Conditions Committees (CHSCTs)

For AREVA's mining activities, the labor code relating to the setting up of a Health, Safety and Working Conditions Committee (CHSCT - Comité d'Hygiène, de Sécurité et des Conditions de Travail) applies to the French sites in Bessines and Paris, where the head office of AREVA Mines is located.

**This regulated body represents employees** (12% of the total workforce) on issues relating to health, safety and working conditions. It may make recommendations to the employer on all matters it handles and take actions for the purposes of prevention, monitoring, checks and surveys. The Bessines CHSCT has existed since the creation of the site, while the CHSCT for the Paris site held its first meeting in January 2012. In addition to Paris-based employees, this latter committee also represents employees sent on assignments to sites abroad.

The CHSCTs consist of staff representatives of the employer and the labor inspection authority, occupational health doctors, health insurance representatives and other specialists who may be invited to attend if necessary. Ordinary meetings are held on a quarterly basis. They may be supplemented by other meetings in the interim to monitor a particular issue. In the event of a near-accident, an extraordinary meeting may be held within the 24 hours following the occurrence of the event. Since the end of 2012, representatives of the CHSCTs from the two sites have been following training courses to gain a better grasp of the regulations that govern this body and how it operates.

There are bodies equivalent to the CHSCT in France at our sites worldwide, such as in Niger ("Comité Santé Sécurité au Travail"), Canada ("Occupational Health Committee") and Kazakhstan ("Labour Collective"). They are all set up within the framework of collective bargaining agreements and perform the same role as the French body. The number of staff representatives, while meetings are held on a monthly basis in Niger, on a quarterly basis in Canada and as necessary in Kazakhstan.

### Dialog and consultation in the community

In communities where our activities have a significant impact on local players, dialog and consultation bodies are set up. These bodies are multi-party and form part of a regulatory or voluntary framework.



Who attends, the frequency of meetings and the subjects discussed depend on the issues encountered locally: socio-economic development, environmental footprint, health, better understanding of our mining and industrial projects, to name but a few.

Here are some of the different types of dialog and consultation bodies and events in the main areas in which we work (list not exhaustive):

#### ■ CANADA – Athabasca Working Group (AWG)

- Created in 1993, this body is composed of members of the mining companies (AREVA Resources Canada Inc. and Cameco Corporation) and six communities in the north of Saskatchewan province.
- In 2012, these stakeholders have begun to renegotiate the "Impact Management Agreement", an agreement that since 2001 has covered all aspects relating to the impact of mining activities on the region: employment, training, environmental protection and benefits for the communities.
- In 2013, four meetings were held and the Athabasca Working Group's annual report was published.

#### ■ FRANCE – Site Monitoring Committee (CSSs)

- Set up on the initiative of local Préfets (government representatives), Site Monitoring Committees are bodies to promote dialog and consultation between the operator and local stakeholders (residents, employees, elected officials, associations, etc.).
- At least once a month, the operator provides the committee with a summary of site activities, focusing on environmental monitoring and risk prevention.

#### ■ GABON – Health Observatory of Mounana (OSM)

- The Health Observatory of Mounana is a multi-party initiative led by AREVA, the states and civil society.
- Its aim is to provide post-professional monitoring for retired miners who may have been exposed to ionizing radiation.
- An annual report is available for both OSM and OSRA, the Observatory for the Agadez Region in Niger.

#### ■ KAZAKHSTAN – Site visits

- In 2013, AREVA's Katco subsidiary ran a series of site visits, welcoming students, journalists and farming associations to introduce them to site activities and answer questions on sustainable development.

#### ■ MONGOLIA – Local Information Committees

- These committees were run on a voluntary basis for the first time in October 2013 by local AREVA teams together with representatives and elected officials from local communities to present the exploration phase of the mining project and the associated issues.

#### ■ NIGER – Bilateral steering committee (CBO)

- These were created in 2006 to help strengthen the local governance of societal projects for the benefit of populations.
- The committees bring together local elected officials, relevant administrations and civil society alongside AREVA subsidiaries. They define local development policies, identify priority areas for intervention, issue opinions on projects and ensure financing for the latter.
- Currently, the agreement governing Bilateral Steering Committees is being renegotiated.

**INNOV'ACTION 2016**

One performance area in AREVA's "Action 2016" strategy is dedicated to **"Technology and Innovation"**. Within the Mining Business Group performance plan more specifically, innovation is promoted through the Innov'Action 2016 program, which has similar aims throughout all AREVA business areas, including mining:

Innov'Action 2016 aims to:

- strengthen the culture of innovation,
- encourage teams to propose innovative ideas and help them make these ideas a success,
- accelerate the rate at which new solutions are developed and brought to market,
- bring technological breakthroughs and new areas of activity to maturity for AREVA.



These aims are based on three major levels of innovation:

- **incremental innovation** (the improvement of existing solutions),
- **the creation of new products and services** within existing businesses,
- **breakthrough innovation** with the creation of new models of the future.

**OPERATIONAL EFFICIENCY**



**Our definition of performance**

The performance plan for AREVA's mining activities has been drawn up to serve our industrial ambitions in an unfavorable uranium market. Cost control and the improvement of our processes are therefore vital components to:

- ensure our mining activities remain sustainable while upholding the best standards,
- improve our performance in terms of health, safety and the preservation of the environment.

**+** **TO GO FURTHER**

In 2013, more than 500 employees were informed about or trained in performance tools in Kazakhstan, Niger, Canada and France.

In the same vein, four employees received "Green Belt" certification in Kazakhstan and Niger.

On a day-to-day basis, our teams are mobilized in several areas, such as the deployment of lean management tools across all our sites (details are not exhaustive for reasons of confidentiality).

The aim is simple: allow our teams to work efficiently in a secure environment with the aim of **identifying new opportunities to make savings and avoid wastage**.

## Culture "Lean Management"

Since 2013, our teams have systematically deployed the following initiatives on our operating sites:

- lean management tools: e.g. 6 sigma, 5S, visual performance management, value stream mapping (identifying the physical and information flows of a process and checking its capacity to meet customer expectations), cost of non-quality, etc.
- a Lean Six Sigma training program leading to qualification, provided by AREVA University and our sites,
- "Green Belt" projects.



### TO GO FURTHER

#### Focus on our performance: Green Belts within our mining activities

The **Lean Six Sigma** initiative is one of a number of performance improvement tools that can be applied across a range of sectors, although it had its origins in the automobile industry.

"Six Sigma" **projects** are led and coordinated by our employees who are trained in these techniques, taking the title of "Green Belt" or even "Black Belt" (for those with greater management and supervision skills) when certified.

Since 2013, our teams within AREVA's Mining Business Group have counted four Green Belt-certified employees among their number at our Niger and Kazakhstan sites. The target for 2015 is to train and certify 10 Green Belts on each operating site.



### INFORMATION

We do not provide details of the savings made for reasons of confidentiality. However, the first results are promising and have encouraged our teams to continue the effort begun in 2013.

## PREVENTING LONG-TERM RISKS

### R&D for Environment

In the face of regulatory and societal demands, our mining activities must meet the expectations of stakeholders (authorities, associations/NGOs, employees, governments, the scientific community, etc.) in a **transparent** manner through scientifically-demonstrated methods.

More specifically, the environmental issues on which research efforts are focused include:

- issues relating to water management and treatment,
- the understanding, prediction and modelling of contaminant migration over the long term,
- the proactive management of regulatory changes and the requirements of authorities,
- the development of new tools for the sampling, analysis and understanding of environmental impacts.



### INFORMATION

In France between 2009 and 2013, requests for environmental studies and monitoring from the authorities rose by a factor of 3.5, an increase of 140 (excluding studies for the French National Plan for the Management of Radioactive Materials and waste).

Source AREVA

In order to support our operating teams throughout the world, we have developed a high level of expertise thanks to our international teams of researchers and experts and in partnership with external bodies from academia and the professional world (the universities of Poitiers, Paris VI, Paris VII, Granada, Brussels, Manchester, Washington, the Ecole Polytechnique Fédérale de Lausanne, as well as the CEA, CREGU and NAGRA).

## Program Envir@Mines

Our teams of researchers and experts are currently working in the following fields under our

**Envir@Mines** research and development program:

- the long-term future of processing waste in France and Niger,
- the environmental footprint of waste rock in France under the French National Plan for the Management of Radioactive Materials and Radioactive Waste (PNGMDR),
- water treatment, notably in preparation for the regulatory changes regarding the new Water Quality Standard (NQE) in France,;
- the rehabilitation of aquifers used for in situ recovery in Kazakhstan and Mongolia
- the development of technological measuring tools (e.g. prototype for measuring bioavailability in natural waters).



### TO GO FURTHER

"Envir@Mines" R&D in figures

- 11 collaborative partners
- 2 theses defended in 2013 (2 planned for 2014)
- 42 scientific communications since 2010
- 2 feasibility studies for patents

Source AREVA

## OUR TEAMS AT THE HEART OF INNOVATION

### The College of Experts (Collège des Experts)

The excellence of AREVA's mining activities is underpinned by a **College of Experts** that works closely with operating teams.

There are currently **55 experts, including 7 new experts in 2013**, working across all areas of mining, including in the field of medicine, which is a new field for 2013.

The experts are classified by skill level, from 1 to 3 (level 3 represents the highest skill level).

### The Committee of Wise Persons (Comité des Sages)

Since 2010, the mining activity Committee of Wise Persons has united experts from levels 2 and 3. Along with the Mining Business Group Management Committee, this committee works to:

- outline strategic areas for research and development,
- share comments or opinions on Mining BG issues,
- validate innovative ideas.

In 2014, as part of Innov'Action 2016, the AREVA Mining Business Group Committee of Wise Persons launched "Sag'Innov 2014", with the aim of obtaining two patents via an internal contest that would reward innovative ideas with a development budget supported by the Management Committee.



## The AREVA Awards

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The success of our approach to responsibility also depends on the engagement of all our teams, at all levels and in all areas.

In order to stimulate initiatives, promote and support projects in the field and inspire individuals to play an active role in innovation and sustainable development policies, since 2005 AREVA has organized an internal competition that runs every two years: the AREVA Awards.

This competition recognizes innovative projects that improve group performance, respect environmental, social and societal issues and set an example for all AREVA entities worldwide.

Everyone is invited to participate, regardless of role, discipline or entity. The last AREVA Awards session saw the participation of 182 teams from across the group. 22 projects reached the finals, and among the eight eventual winners were two teams from AREVA's mining activities



### TO GO FURTHER

#### **FOCUS ON NIGER – COMINAK: improving sulfuric acid injection during the chemical processing of uranium ore.**

Since 2012, the teams at COMINAK had observed that the chemical processing method used for uranium ore was consuming increasing amounts of acid, while onsite reagent production remained limited. These teams used their multi-disciplinary skills (in areas such as quality, process, manufacturing, maintenance, etc.) to develop an innovative process that helped to significantly reduce acid consumption, optimize production, improve financial profitability and reduce the site's environmental footprint.

The project won an award in the internal AREVA Awards for its "functional and operational performance".



# CHAPTER PERFORMANCE

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Extract from Responsible Development  
report 2013/2014 on Areva's Mining Activities

The complete report is downloadable on :  
[www.csr-mines.areva.com](http://www.csr-mines.areva.com)

## MAIN KEY INDICATORS

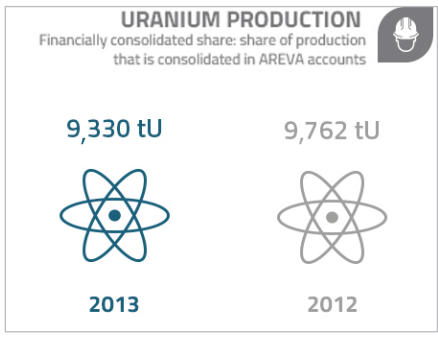
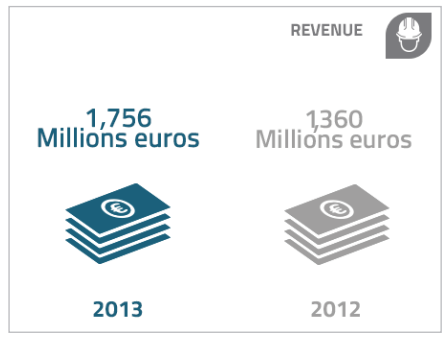
The quantitative data presented is consolidated for all AREVA Mining Business Group operations. The data provided covers the period up to December 31, 2013.

Indicators pertaining to radiation protection and occupational safety cover "our workers", which in this case refers to both employees and sub-contractors.

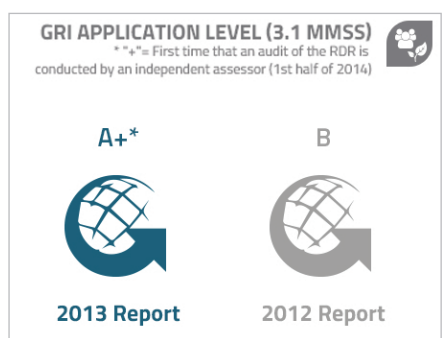
Since RDR 2012 we have developed the list of key indicators to only present results covering the entire scope of the Mining Business Group and to better highlight the importance we assign to current strategic commitments.

This list is likely to change over the next RDRs, depending on materiality results (to 2016), and/or if the indicators can cover the entire scope, and/or if we have been able to deploy new reporting protocols to justify the presentation of other indicators.

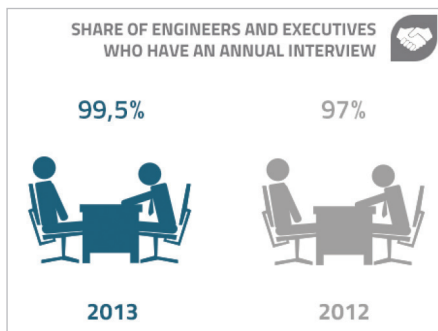
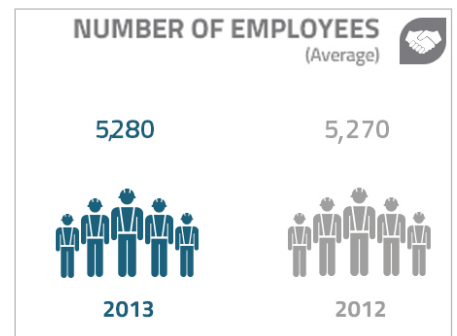
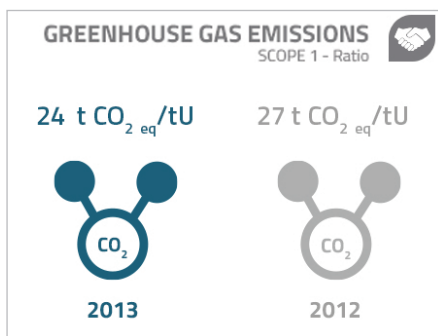
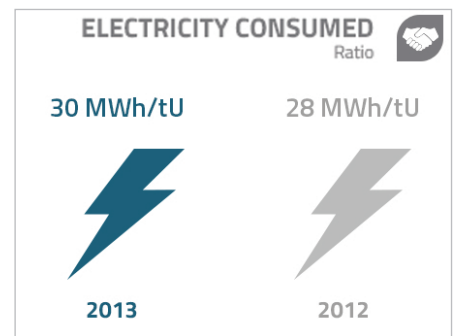
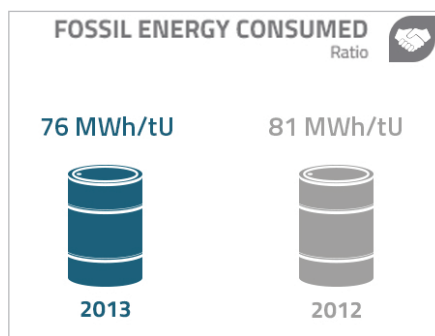
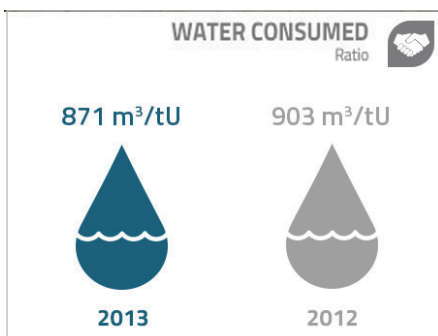
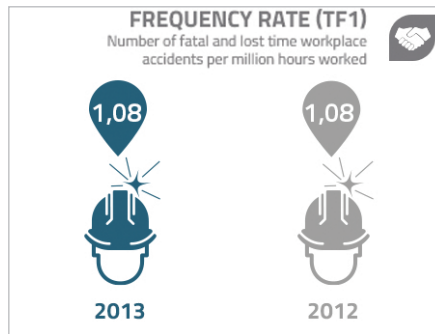
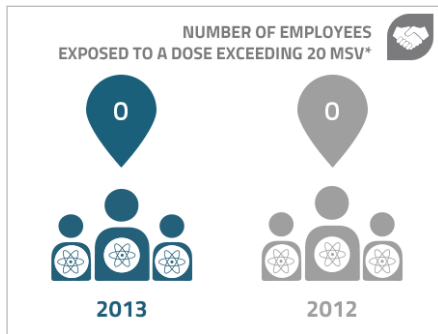
## PROFILE



## CSR APPROACH



**COMMITMENTS**



## ■ MAIN OBJECTIVES OF RESPONSIBILITY

Our approach aims to improve our practices based on seven major responsibility commitments. For us, "Being a responsible mining company" means indentifying key challenges and opportunities while prioritizing our actions.

**Risk management and prevention** are two of our priority goals, in particular in the fields of occupational health and safety, radiation protection and the environment. We are continuing the work already begun.

The context of the uranium market has led our teams to focus efforts in the field of industrial performance, to continue to **supply our customers by achieving the best production costs** while maintaining our mining activities in the countries in which we have a presence, in compliance with our corporate responsibility commitments.

Around the world, our practices must be strengthened in the fields of **community involvement and post-mining management**. This therefore requires the identification and implementation of a mid-to-long-term strategy, which we are currently defining.

+

INFORMATION

The 2013/2014 Responsible Development Report (RDR) bears witness to a transitional period, during which our strategies, related roadmaps or even reporting protocols are evolving. We have set the goal of reporting on our level of performance in a more fine-tuned manner in the 2015 RDR.

AREVA's mining activities respect fundamental human rights and put this respect into practice by complying with the regulations in force, implementing the AREVA Values Charter, and managing risks. We must pursue this approach by defining training plans and/or operational tools specific to Human Rights.

Finally, the acceptability of our mining activities is essential, requiring constant dialogue and consultation with our local stakeholders over these key areas of responsibility. We are pursuing these relationships and keeping our commitments in terms of transparency and partnership.

## ■ OBJECTIVES INDEX

**Occupational health and Radiation protection**
▼

**ACTION 2016**  
"Safety" strategy

- Integrate into the operational roadmap of the Mining Business Group the goals of the AREVA 2014-2016 Health and Safety policy and improvement plans relating to the "health" diagnostics carried out in 2013/2014 in the countries in which we have a presence.
- No worker exposed to a maximum dose of more than 16 mSv over a twelve-month rolling period.

Occupational safety	
<p><b>ACTION 2016</b> "Safety" strategy and in implementation of the AREVA Safe Together! program</p>	<ul style="list-style-type: none"> <li>■ Pursue the implementation of the Mining Business Group roadmap, based on four pillars: leadership and culture, organization and skills, standards and procedures, and risk analysis.</li> <li>■ Zero fatal accidents.</li> <li>■ Frequency Rate (TF1) of less than 1, equivalent to no more than 27 lost-time accidents.</li> <li>■ Complete the deployment of the OHSAS 18001-certified occupational health and safety management system at our sites in Kazakhstan and Mongolia.</li> </ul>
Environment & Biodiversity	
<p><b>ACTION 2016</b> "Safety" strategy, and the implementation of Pillar "Improve our practices" of the Mining Business Group Responsible Commitments Plan</p>	<ul style="list-style-type: none"> <li>■ Integrate the goals of the AREVA 2013-2016 Environment policy and improvement plans relating to the results of the 2013/2014 3SE (health, safety and environment) mapping into the operational roadmap of the Mining Business Group.</li> </ul>
Community involvement and relations with stakeholders	
<p><b>ACTION 2016</b> "Safety" strategy, and the implementation of Pillar "Improve our practices" of the Mining Business Group Responsible Commitments Plan</p>	<ul style="list-style-type: none"> <li>■ Define the Mining Business Group strategy and roadmap around three pillars relating to governance, risk prevention in the short and medium-term and societal monitoring, taking into account the challenges related to post-mining.</li> </ul>
Commitment to employees	
<p><b>ACTION 2016</b> "People" strategy</p>	<ul style="list-style-type: none"> <li>■ Deploy the Manager cycle and the new Mining College formula.</li> <li>■ Diversity commitments: 26% women on the Management Committee, renew the experts campaign, improve the employment rate of disabled persons, promote mobility for the development of skills between the countries in which we have a presence.</li> </ul>

Innovation	
<b>ACTION 2016</b> "Operations & Customers" and "Technology & Innovation" strategy	<ul style="list-style-type: none"> <li>■ Operational efficiency: train and certify 10 Green Belt employees per operational site and continue training and awareness-raising sessions for performance tools to make savings.</li> <li>■ Innov'Action 2016: through the Sag'Innov initiative, identify the feasibility of two patents.</li> </ul>
Ethics & Transparency	
<b>ACTION 2016</b> "Safety" strategy, and the implementation of Pillars "Improve our practices" and "Report on and provide proof of our responsible performance" of the Mining Business Group Responsible Commitments Plan	<ul style="list-style-type: none"> <li>■ Define the roadmap relating to the improvement of our operational practices in terms of Human Rights.</li> <li>■ For the RDR, meet GRI A+ level of application and prepare the transition to G4 (in particular through materiality).</li> <li>■ Timely align GRI and Grenelle 2 article 225 requirements for reporting.</li> </ul>

## NEW FORMAT!



### « No paper »

This annual report, the Responsible Development Report on AREVA's mining activities (RDR), prepared by the Corporate Social Responsibility Department of AREVA Mines, is the result of the mobilization of all our teams at our mining activities headquarters and our sites.

For the first time, we have created a **website completely dedicated to this annual report**, and have discontinued the production of the paper version. Our readers can generate their own PDF report, targeting the subjects of interest to them in the: « **Download** » section.

Although this report cannot provide an exhaustive response to all our stakeholders, we have endeavored to present the most relevant and high-quality performance data for the period covered.

We would like the various groups of stakeholders associated with our mining activities to become progressively more involved in the preparation of this report. To this end, in the 2013/2014 report we have added a new

« **Participate** » feature, so that people interested in our activities can take part in the materiality exercise of the 2015 report and contribute to a forum of questions in the « **Contact us** » section, which we will answer in the 2014 RDR.

## Changes to the reporting period

The **2013/2014 RDR** is the fourth edition of this annual exercise. The previous reports are available for download in the « **Media Center** », on the homepage of the RDR website. Until now, the report for the year n-1 was made available at the start of the last quarter of year n (*for example the 2012 RDR report was published in September 2013*).

**We would like to make changes to the availability schedule of the RDR in order to:**

- provide the report to our stakeholders earlier in the year, to allow them to better assess the performance of year n-1,
- align the publication of the RDR with that of financial documents, generally published at the end of the first quarter of each year (March / April), to anticipate the requirements of the Grenelle II law, which AREVA Mines SA may be subject to from 2015/2016, and to align the audit period of the Mining Business Group RDR with that of the AREVA Statutory Auditors exercise.
- start to prepare ourselves for the move to version 4 of the GRI, better integrating the materiality exercise upstream from the RDR process, as well as updating our reporting protocols,

**Within this context, the 2013/2014 RDR is a necessarily transitional report, with the following characteristics:**

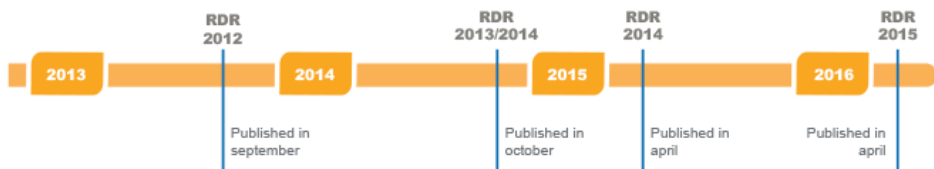
- it covers the performance of our responsible commitments for 2013, which means the reporting ran up to December 31, 2013,
- it can cover part of the qualitative data specific to each of our commitments until the end of the first half of 2014,
- it has been prepared according to the initial orientations of the materiality exercise underway within our activities (**Deliverable A**), which is why we have identified seven responsible commitment families,
- we meet the GRI "A+" level of application in 2014 instead of 2015 (the goal of "B+" had been set for 2014),
- we provide our stakeholders with a new « **Participate** » feature to allow them to take part in the 2015 RDR production process.

The 2013/2014 RDR already provides the framework for the content of the 2014 RDR, which will be available from April 2015. A simple update of the quantitative data up to December 31, 2014, as well as an update of qualitative data covering the second half of 2014 will therefore be offered in the 2014 RDR.

**The 2015 RDR will be the outcome of this new reporting approach, with:**

- a presentation of the consolidated results of our materiality exercise, integrating the feedback of our stakeholders through the « **Participate** » feature,
- a more fine-tuned analysis of performance with regards to our commitments,
- improved coverage of international data (for example the "commitment to employees" chapter mainly covers France),
- in parallel, the ramp-up of the sustainable development reports of our sites.





## Scope of information

In application of AREVA's strategy and policies and the initial indications provided by **Deliverable A** of our 2013-2014 materiality matrix, this report aims to present the performance linked to the main responsibility challenges of the mining activities presented this year under seven main commitment families: occupational safety, health and radiation protection, environment and biodiversity, community involvement, commitment to employees, relationship with stakeholders, innovation.

Ethics and risk management are covered in the fundamentals of our approach because we believe that they are cross-cutting issues, making up the foundations of these commitments.

The data given cover the assets for which AREVA acts as operator in uranium mining activities: exploration, project development, production and rehabilitation. The consolidated data target activities in France, Canada, Niger, Kazakhstan, Mongolia, Gabon and Namibia. When the scope only covers one given country, this is mentioned (in particular in the commitment to employees chapter).

## GRI and verification by an independent third party

Within the scope of mining activities, our teams currently apply the guidelines set out in version G3.1 of the Global Reporting Initiative (GRI), Mining and Metals Sector Supplement (MMSS). By 2016 we plan to move towards version G4. This report has been submitted to the GRI for assessment at application level A+. A copy of the acknowledgement received from the GRI secretariat is supplied in the "**Acknowledgements**" **FOCUS**.

We therefore meet the commitments made as part of our involvement in the International Council on Mining and Metals (ICMM), and the related schedule of targets which we announced in RDR 2012. This approach is carried out in compliance with the Grenelle II law, which provides regulatory guidance on the extra-financial reporting of companies.

In 2014, for the first time, we conducted an independent check of the content of this report in compliance with the ICMM Audit procedure and the AA1000 ethical auditing principles. The acknowledgement received from the auditing firm is available for **download**.

Each year the group conducts an audit on a sample of environmental indicators as part of the independent check of the extra-financial chapter of the AREVA Reference Document. As such, a number of our mining sites may be selected for the review of these indicators. The SOMAÏR (Niger) and McClean (Canada) sites were audited in 2013, and the Katco (Kazakhstan) and Bessines (France) sites were audited in 2014.

## Reporting protocol

For environmental, social, economic and ethical topics, internal technical protocols have been developed for several years. Although they enable us to meet most of the indicators set out in the GRI guidelines, they do not systematically correspond to the unit of calculation formula set out in the GRI reporting protocols.

French regulatory constraints do not allow us to report on categories of indicators relating to diversity covered by other national regulations.

Finally, as far as possible, for all topics on which we do not have or are updating technical protocols, we strive to take the GRI approach into account when relevant and applicable to the scope of our activities.

**Note: regarding the "Product Responsibility" indicators. Most of this data is managed by AREVA corporate entities or downstream of AREVA's mining activities in the nuclear fuel cycle, and are not applicable to the scope of the Mining Business Group.**



# CHAPTER ANNEXES

Extract from Responsible Development  
report 2013/2014 on Areva's Mining Activities

The complete report is downloadable on :  
[www.csr-mines.aveva.com](http://www.csr-mines.aveva.com)

## ■ ETHICS

### Fighting against corruption - Creation of an internal control team



Kazakhstan

**Goals: strengthen the fight against corruption, set an example by making commitments at the very highest level of management, raise awareness on ethics among operational teams.**

From 2013/2014, the members of the Mining Business Group Management Committees, expanded to include the directors of subsidiaries outside France, underwent AREVA training on ethics, rules and principles related to the Values Charter. To this end, this code of conduct was distributed to them in several languages (French, English and Russian).

Within this context, the general manager of the KATCO subsidiary in Kazakhstan presented the members of the Management Committee of the Mining Business Group with an initiative aiming to strengthen the fight against corruption within the subsidiary; the creation of an internal control department which will report directly to him.

This internal control team was officially implemented at the end of the first half of 2014, from the publication of the new KATCO organizational chart. It is made up of two people: one already working at KATCO in the finance department as a controller, and another currently being recruited to work under the supervision of the former.

The creation of this new department has also provided the General Director of KATCO with the opportunity to raise awareness among the management at the site on the rules of conduct regarding ethics and the fight against corruption. An annual roadmap is currently being defined to set priorities for the work of the internal control team. Several procedures have been drafted to guide the approach.

The response to this initiative has been very positive, with strong support from the legal department. An awareness-raising plan was required to explain the approach and strengthen the commitment of middle management.

## ■ MINING SITE CLOSURE AND REHABILITATION.

### Rehabilitation of one of the largest uranium mining projects in North America



USA

**Goals: rehabilitate the mine, industrial facilities, and piles of tailings from one of the largest uranium mining projects in North America**

#### USA – "Lucky Mc" Project, also known under the name of "Gas Hills North"

The rehabilitation of the mine began from the first uranium production phases, and continued until the 1990s. The largest rehabilitation phase began at the start of the 2000s and finished in 2004. From then on, the project has been put on hold. The responsibility with regards to tailings and industrial facilities was transferred to the U.S. Department of Energy (DOE) in 2009 (with this permit ending in 2014).

This rehabilitation required a large number of studies (e.g.: mine and tailings rehabilitation plans), mobilizing several stakeholders; the U.S. Department of Energy, the State of Wyoming, the U.S. Nuclear Regulatory Commission (NRC) and AREVA. The Group, via Pathfinder Mines Corporation, spent nearly 57.1 million dollars on the project between 1991 and 2013.

During this rehabilitation, it was necessary to face up to the damage caused by the storm of 2003 (redesign and rebuild the erosion control system) and implement innovative programs such as the creation of a layer of arable land, in short supply in the local area and a requisite for the rehabilitation project.

## ■ COMMUNITY INVOLVEMENT

### Improve food security in the country by developing irrigation systems in desert areas



Nigeria

**Goals: train local producers in agricultural techniques and provide them with support during a test over 100 hectares of irrigated crops on two pilot sites.**

Lasting two years, this pilot project financed by AREVA concerns the sites of Agharous and Tiguirwit in the Irhazer valley, where one agropastoral and one crop farm will be set up. This pilot scheme is placed under the supervision of the Secretary-General of the Nigerian Ministry of Agriculture, and managed by a steering committee which held their second session from June 12 to 14, 2014.

Training for all involved has enabled the foundations of the project to be laid. Preparation and rehabilitation work has begun with the implementation of irrigation networks, the installation of new pumps at the Agharous and Tiguirwit boreholes, the construction of shelters and fencing around the perimeter of the sites, as well as the installation of power generators.

The entire pilot project makes up the preliminary phase of a major development program for the Irhazer valley and the Tamesna plain over 5,000 hectares, from which more than 2,000 households structured into producer organizations will benefit. AREVA has committed to providing funding of 17 million euros.

According to Mr. Illa Djimrao, Secretary-General of the Ministry of Agriculture, this project fits in perfectly with the goals of initiative 3N ("Nigeriens feeding Nigeriens") and will contribute to the overhaul of the regional economy.

## ■ OCCUPATIONAL SAFETY

### Raise awareness on the safety culture among employees and sub-contractors

#### ■ Location: all our sites around the world

Goals: organize a day dedicated to safety every June to raise awareness and mobilize our workers on preventive measures and AREVA goals.

##### ■ AREVA Mines Niger - June 27, 2014:



Nigeria

the safety days of the SONARA and AMAR TALEB buildings in Niamey began with the screening of an interview with Olivier Wantz on safety, followed by presentations on the safety results of the Mining Business Group in 2013, 2014 safety standards, accidentology and additions analysis. A safety day was also organized at Arlit by the geologists of AREVA Mines Niger. On the program was a workshop seminar providing information and raising awareness on safety standards for AREVA employees and sub-contractors.

##### ■ Imouraren (Niger) - June 26, 2014:



Nigeria

the Imouraren Safety day was organized around safety presentations followed by a hunt for anomalies in the defined areas of activity: Imouraren living compound, workshops, worksites, warehouses, open-pit mine...

##### ■ COMINAK (Niger) - June 24, 2014:



Nigeria

COMINAK organized a safety day at AKOUTA. This event brought together all COMINAK workers and sub-contractors and the administrative authorities of Arlit. The aim of this day was to strengthen the safety culture and compliance with standards through the adoption of exemplary behavior and good safety habits.

##### ■ SOMAIR (Niger) - June 19, 2014:



Nigeria

the SOMAIR safety day brought together employees and sub-contractors to focus on safety standards. They were all on hand at Arlit to attend a demonstration of emergency response by the firefighters of SOMAIR. Awards were handed out to safety award winners and SOMAIR "Employees of the month". The event was brought to a close with a guided tour of the stands for employees and the general public.

##### ■ KATCO (Kazakhstan) - June 11, 2014:



Kazakhstan

following the example of other sites, on June 11 Katco organized its 2nd edition of the Safety day. This provided the teams of each department, both on-site and at Almaty, with the opportunity to organize practical workshops (emergency response, acid risks, work at heights, first aid and resuscitation, etc.), and discussions on safety topics. The day was brought to close with an awards ceremony rewarding the hard work and commitment of employees and sub-contractors to the safety cause.

##### ■ Mongolia - June 9, 2014:



Mongolia

two safety days were organized in Mongolia. The safety day at the Dulaan Uul site included a safety presentation and the "Life free from danger" game, which the teams of AREVA and sub-contractors took part in. The safety day at the Ulan Bator offices provided an opportunity to remind everyone of the importance of safety in all locations, both in offices and on-site.

■ **AREVA Resources Canada - June 9, 2014:**



Canada

more than 130 employees, sub-contractors and suppliers of ARC in Saskatoon were invited to place safety at the top of their agenda. The director of AREVA Resources Canada shared his personal commitment to safety and invited employees to make a similar commitment. A series of workshops on safety in the home and personal safety followed the managerial presentations. These workshops covered topics such as distractions while driving, the safety of car seats for children, the new urban emergency mass identification system, drugs screening and testing techniques as well as common chemical hazards in households.

■ **Bessines (France) - June 5, 2014:**



France

in Bessines, a giant snakes and ladders game set the pace for the various activities offered at the site. Based around six themes (road safety, chemical hazards, work at heights, stakeholder relations, radiation protection, machines and tools), the safety topics were covered in the form of mini-games.

■ **Trekopje (Namibia) - June 3:**



Namibia

57 AREVA employees and sub-contractors, making up 89% of the teams working for AREVA Namibia, took part in the safety day. The day was organized with a combination of slide shows, videos, role-playing games and discussions, covering a wide range of topics such as safety standards and their implementation, training, and questions of health and well-being. Given that driving on the gravel roads of Namibia is the main hazard, one team focused their feedback on careful driving training. Finally, the safety team took the opportunity to remind everyone of the right way to hold discussions on the subject of safety ("Safety eye to eye interaction").

■ **Australia - May 31, 2014:**



Australia

the training of drivers was at the heart of the activities for the Australian safety day, and all personnel were trained in how to drive to save lives, time and money, despite surrounding conditions and the actions of others.

## ■ INNOVATION – OPERATIONAL EFFICIENCY

### Optimizing the injection of sulfuric acid during chemical processing



Nigeria

**Goals: optimize and ensure better control over the volumes of acid injected while maintaining the amount of uranium recovered**

Since 2012, Cominak teams had observed that the chemical processing method used for uranium ore was consuming increasing amounts of acid, while on-site reagent production remained limited. These teams used their multi-disciplinary skills (in areas such as quality, process, manufacturing, maintenance, etc.) to develop an innovative process that helped to significantly reduce acid consumption, optimize production, improve financial profitability and reduce the site's environmental footprint. This project won an award in the internal AREVA Awards for its "functional and operational performance".

Sulfuric acid is used to transform the uranium contained in the ore from a solid to a liquid in order to undergo chemical treatment. The quantity of acid to be used in the process has not only to be optimized to dissolve as much uranium as possible whilst keeping costs at an optimum, but also has to be sufficient to prevent clogging and deposits which would be harmful to the proper operation of the installations. Sulfuric acid is the leading chemical reagent, in terms of cost and volume, used at AREVA mines in Niger. At COMINAK, it accounts for 10% of production costs and requires more than 20,000 tonnes of sulfur to be transported to the site each year in order to produce the quantity of sulfuric acid necessary.

This process which has been in place since 2012 has made it possible to achieve the following results: decrease in sulfuric acid consumption by nearly 10% of annual volume whilst maintaining the uranium recovery yield at the same levels as before; decrease in production and maintenance costs; reduction in carbon footprint (190 tonnes per year, equivalent to 40 trucks transporting 1,800 tonnes of sulfur), and decrease in SO<sub>2</sub> emissions (80 tonnes per year); better management of risk of road accidents involved in the transportation of sulfur or sulfuric acid by truck.

## RISK PREVENTION – CRISIS EXERCISE

### Preventing the risks related to climatic events



**Goals: develop and implement a scenario simulating various incidents caused by a climate event, in order to test the response of teams and identify areas for improvement**

Kazakhstan

On January 10, 2013, a large-scale crisis exercise was conducted in Kazakhstan involving teams from KATCO JV LLP, AREVA Mines and AREVA Corporate. The scenario of this exercise was to manage incidents that may occur in relation to a climatic event: traffic accidents, pollution due to an ammonia cloud, interruption of communications, etc.

The incidents involved teams from KATCO (local and expatriate staff), sub-contractors and suppliers. The scenario was devised in order to test how teams would respond in such a context and whether the necessary means of communication were used. The exercise required the intervention of a number of entities on an international scale: the site at local level (advance command post), the emergency crisis control center (local command and management post), the crisis control center at Almaty (regional command and management post) and the AREVA crisis management center (AREVA command and management post), with the support of the AREVA Mines crisis technical team.

## COMMITMENT TO EMPLOYEES

### Creating new opportunities locally for developing skills and recruiting skilled employees



**Goals: hire and secure employment at the McClean Lake site for over 90 % of the young people who we train through the « *Unearthing Potential by Providing Opportunity Project* ».**

Canada

Residents of the remote communities in Northern Saskatchewan, for the most part Indian, have very limited opportunities for employment or skill development. In this context, we decided to offer them training programs, thereby also allowing AREVA Resources Canada to have qualified staff ready for the restart of the McClean Lake mill. This project has won an award in the internal AREVA Awards program.

Through this project, our teams are working to develop a long-term solution for the recruitment of new skilled workers who will be able to access more technical positions such as laboratory technicians or supervisors, etc. Our teams and stakeholders had a number of difficulties to overcome in implementing this project in Northern Saskatchewan: Managing the transportation of residents in a region where distances can quickly reach several hundred kilometers and where resources are limited; the rotation system adopted for the teams involved in the training program having an impact on the communication required between the different stakeholders; the choices to be made between the young candidates from the Northern Saskatchewan communities.

## INNOVATION - ENVIRONMENTAL R&D

### The Envir@Mines project to meet the challenges related to the rehabilitation and monitoring of former mining sites



**Goals: improve our knowledge of the environmental footprint of mining sites and offer new technologies to optimize the management and treatment of water.**

France

The Envir@Mines project involves all group mining sites. Here we will focus on our actions in France, i.e. on mines that have already been rehabilitated. Three themes are addressed: the management of waste rock and tailings and aqueous discharges.

<sup>\*</sup> PNGMDR: National plan for the management of radioactive materials and radioactive waste

#### ■ Management of tailings:

under the PNGMDR<sup>\*</sup>, AREVA is required to continue the study of the evolution of ore tailings stored in France. This action must ultimately be accompanied by the development of models to predict the long-term impact of the tailings, taking into account a normal scenario and degraded scenarios.

#### ■ Management of waste rock:

also under the PNGMDR<sup>\*</sup>, AREVA has conducted sampling campaigns on several rehabilitated sites to characterize the evolution of waste rock storage and its potential risk for the natural environment. A multi-year study is ongoing to develop predictive models of the migration of uranium from the rock piles to the environment.

#### ■ Aqueous discharge and bioavailability:

AREVA is preparing for future legislative developments in France on the environmental quality of aquatic environments. The definition of these new standards will take into account the concept of bioavailability of contaminants. To be able to meet these new requirements, AREVA is building its knowledge on the bioavailability of several metals of interest (Uranium, Radium, Barium, Aluminum, Manganese and Iron) and their potential risks for ecosystems. A tool for directly measuring the bioavailability of dissolved elements in the aquatic environment is being developed and new methods of water treatment are being studied.

## MAJOR CHALLENGES OF TODAY AND TOMORROW

### Management of post-mining for AREVA mining activities

Following the mining of uranium ore, mining sites are rehabilitated to limit the residual impact of activities and ensure public health and safety.

The rehabilitation and monitoring of these sites comes under the scope of a demanding regulatory framework, evolving over the long term. While these activities comprise risks, we also see them as an opportunity to draw on and highlight the areas of expertise of our teams, covering the major phases of the rehabilitation and post-mining cycle.

This phase must be prepared as far upstream as possible, from the exploration phase. It requires the mobilization of specific scientific expertise as well as technical, economic or even societal and labor relations expertise.



We would therefore like to offer you the opportunity to learn about the major challenges related to these businesses, and to come with us around the world to better understand the main environments in which we work. The main challenges we encounter on this scope we work in are:

- Management of waste rock and tailings
- Water management
- Stability of the mine and dikes
- Social acceptability
- Sustainable monitoring and long-term prospects
- Radiological impact
- Economic optimum

## PREPARING FOR REHABILITATION FROM THE EXPLORATION PHASE

### Example in Mongolia

Challenges	Identity card of the mining project
<ul style="list-style-type: none"> <li>■ Social and societal acceptability of uranium projects.</li> <li>■ Implementation of ISR technology.</li> </ul>	<ul style="list-style-type: none"> <li>■ 25 mining licenses in the Sainshand basin (Dulaan Uul and Zoovch Ovoo) and the Dariganga basin.</li> <li>■ ISR (In Situ Recovery) process pilot project in 2011 at the Dulan Uul site.</li> <li>■ Launch of the feasibility study in February 2014.</li> </ul>

### Rehabilitation Plan – Starting Point



- Periodic monitoring through a network of piezometers
- Rehabilitation of drilling platforms
- R&D Program: demonstration of the natural demineralization of aquifers
- Hydrogeological studies

## ■ PLANNING FOR THE REHABILITATION OF A MINING SITE IN OPERATION FOR 15 YEARS

### Example in Kazakhstan

Challenges	Identity card of Katco site
<ul style="list-style-type: none"> <li>■ Start rehabilitation during an activity in operation.</li> <li>■ Model the overall behavior of the rehabilitation of aquifers.</li> </ul>	<ul style="list-style-type: none"> <li>■ Operated by Katco since 1996</li> <li>■ Mining of uranium deposits by In-Situ Recovery (ISR) using acid</li> <li>■ Uranium concentration, purification and attachment plants</li> <li>■ Uranium reserves: sized for a production of 4,000 tU/year</li> </ul>

#### ■ Mine in operation and in-depth rehabilitation plan



- Closure of production wells at the end of their lifecycle
- More in-depth rehabilitation plan
- Feasibility study to restore the site to its primary use (forestry)
- R&D program to confirm and speed up the rehabilitation of the aquifers tested on-site

## ■ PLANNING THE REHABILITATION OF A MINING SITE IN OPERATION FOR MORE THAN 30 YEARS

### Example in Niger

Challenges	Identity card for the SOMAÏR ssite in Niger
<ul style="list-style-type: none"> <li>■ Rehabilitate a site with a history of several decades in a desert area.</li> <li>■ Social and societal impact of the closure, in particular for the town of Arlit.</li> </ul>	<ul style="list-style-type: none"> <li>■ Site mined since 1971</li> <li>■ Mining of uranium deposit in Open-Pit Mines then dynamic and static processing plant</li> <li>■ Production of Yellow Cake: nearly 60,000 tonnes with a target of 2,100 tU/year.</li> </ul>

#### ■ Mine in operation and in-depth rehabilitation plan



- Site subject to environmental monitoring.
- Overall rehabilitation plan developed, comprising nine areas to rehabilitate and additional studies underway.
- Modeling of the flooding of the open-pit mine.
- Re-estimate of the volumes to implement.
- Stripping test to estimate the volume of radiologically contaminated materials.
- Test area for the implementation of the covering over tailings.



## ■ PREPARING THE TRANSFER OF A REHABILITATED SITE TO A SUPERVISORY AUTHORITY

### Example in the USA

#### Challenges

- Transfer of a rehabilitated site to the U.S. Department of Energy (U.S DOE).

#### Identity card of the American mines

- 2 main sites: Lucky Mc & Shirley Basin, mined from 1953 to 1993.
- Open-pit mine, underground mining works with processing plant and In Situ Recovery – by alkaline leaching (first industrial application in the USA).
- More than 27,000 tonnes produced and 20 million tonnes of tailings.

### ■ Monitoring of the rehabilitated site



- Full rehabilitation and transfer of site to the U.S. Department of Energy (DOE).
- Supervisory authority: US Nuclear Regulatory Commission (NRC), supervising monitoring of the site through the issuing of a license.
- Monitoring of the storage of tailings: Lucky Mc (5 boreholes), Shirley Basin (14 boreholes), all analyzed 4 times/year; parameters analyzed: level of water, pH, temperature, heavy metals, uranium, radium and thorium.
- Monitoring of two mining sites in their entirety: 26 boreholes, 5 surface water areas, 2 times/year.

## ■ ENSURING THE MONITORING AND INSPECTION OF THE REHABILITATED SITES

### Example in Gabon

#### Challenges

- Reconstruction of 200 dwellings for populations following the detection of a radiologically contaminated dwelling (cumulative dose comprised between 1 and 5 mSv/year).

#### Identity card of the COMUF rehabilitated mine

- 5 deposits in the Haut-Ogoué in Mounana mined from 1958 to 1999.
- Open-pit mine and underground mining works with a processing plant.
- 7,600,000 tonnes of ore extracted at 3.73 %.
- Production of Yellow Cake: 26,600 tonnes.

### ■ Monitoring of the rehabilitated site



- Rehabilitation of the site from 1999 to 2004, validated by the IAEA upon request by the Gabonese authorities: official report - August 2006.
- Parameters used:
  - Water: 100 samples per year
  - Air: 14 measurement stations
  - Food chain: manioc
  - Stability of the dike (topographical measurements)
- Independent inspections of the environment performed by the National center for prevention and protection against ionizing radiation and by the IAEA.
- Follow-up of former workers through the Mounana Health Observatory.

## ■ PROVIDING A SECOND LIFE FOR A REHABILITATED SITE

### Example in France

#### Challenges

- Acceptance of the project by stakeholders.
- Ensure the restructuring of this pilot site.

#### Identity card of the rehabilitated mine of Bosc-Soumont

- Site in Hérault mined from 1959 to 1997 and rehabilitation from 2001 to 2005.
- Open-pit mine and underground mining works, processing plant.
- 4 million tonnes of tailings.
- Production of Yellow Cake: 14,630 tonnes.
- Site undergoing restructuring.

- Review of monitoring (lightening) or new related project to give the site a second life



- December 2005: urban part of the site (around 115 hectares) sold by AREVA to the Communauté des Communes du Lodévois [association of Lodevois municipalities].
- Launch of the project to install 35,354 solar panels over 16 hectares:
  - 13,397,000 kw = annual electrical consumption of around 7,400 people living near the solar power plant.
- Inauguration of the solar power plant in November 2013.

## ■ IMPROVE THE EXISTING REHABILITATION

### Example in France

#### Challenges

- Acceptance of the rehabilitation changes by the stakeholders.

#### Identity card of the SITE of Bois Noirs in Limouzat, France

- Site located in the Forez, mined from 1955 to 1980.
- Open-pit mine and underground mining works with a processing plant.
- Production of Yellow Cake: 6,800 tonnes (average content of 2.6 %)

- Drafting of the administrative file and validation by supervisory authorities (consultation with stakeholders impact assessment, etc. )



- Initial rehabilitation of the site from 1980 to 1987 then dismantling of the plant in 2006.
- Storage of 1.3 million tonnes of tailings under a layer of water and behind a dike (large dam of 42 m in height and 500 m in length).
- Request from the authorities to offer a sustainable rehabilitation of the storage of tailings to limit the maintenance of facilities (large dam and connected works):
  - replacement of the layer of water with a mineral covering (1 million m3 of materials)
  - creation of a new river bed ensuring ecological continuity.

**GLOBAL REPORTING INITIATIVE (GRI)**

Within the scope of mining activities, our teams currently apply the guidelines set out in version G3.1 of the Global Reporting Initiative (GRI), Mining and Metals Sector Supplement (MMSS).

This report has been submitted to GRI Report Services for assessment at Application Level "A+".

The statement received from GRI is available for [downloading](#).



**VERIFICATION BY AN INDEPENDENT THIRD PARTY**

In 2014, for the first time, we conducted an independent check of the content of this report in compliance with the International Council on Mining and Metals (ICMM) Audit procedure and AA1000 ethical auditing principles.

The assurance statement issued by the auditing firm is available for [download](#).





## Statement GRI Application Level Check

GRI hereby states that **AREVA Mines SA** has presented its report "Report 2013/2014 Responsible Development of AREVA's Mining Activities" to GRI's Report Services which have concluded that the report fulfills the requirement of Application Level A+.

GRI Application Levels communicate the extent to which the content of the G3.1 Guidelines has been used in the submitted sustainability reporting. The Check confirms that the required set and number of disclosures for that Application Level have been addressed in the reporting and that the GRI Content Index demonstrates a valid representation of the required disclosures, as described in the GRI G3.1 Guidelines. For methodology, see [www.globalreporting.org/SiteCollectionDocuments/ALC-Methodology.pdf](http://www.globalreporting.org/SiteCollectionDocuments/ALC-Methodology.pdf)

Application Levels do not provide an opinion on the sustainability performance of the reporter nor the quality of the information in the report.

Amsterdam, 02 September 2014

A handwritten signature in black ink, appearing to read "Ásthildur Hjaltadóttir".

Ásthildur Hjaltadóttir  
Director Services  
Global Reporting Initiative



The "+" has been added to this Application Level because AREVA Mines SA has submitted (part of) this report for external assurance. GRI accepts the reporter's own criteria for choosing the relevant assurance provider.

*The Global Reporting Initiative (GRI) is a network-based organization that has pioneered the development of the world's most widely used sustainability reporting framework and is committed to its continuous improvement and application worldwide. The GRI Guidelines set out the principles and indicators that organizations can use to measure and report their economic, environmental, and social performance. [www.globalreporting.org](http://www.globalreporting.org)*

**Disclaimer:** Where the relevant sustainability reporting includes external links, including to audio visual material, this statement only concerns material submitted to GRI at the time of the Check on 08 August 2014. GRI explicitly excludes the statement being applied to any later changes to such material.

## AREVA - BG Mines

Year ended December 31, 2013

## AREVA - BG Mines

Year ended December 31, 2013

### **Report of the independent verifier on the alignment of the information published in the responsible development report on AREVA's Mining Activities with the standards of the International Council on Mining and Metal (ICMM)**

### **Report of the independent verifier on the alignment of the information published in the responsible development report on AREVA's Mining Activities with the standards of the International Council on Mining and Metal (ICMM)**

*This is a free translation into English of the original report issued in the French language. It is provided solely for the convenience of English speaking users.*

To the Directorate general,

In our capacity as independent verifier and in response to your request, we present our report on the information disclosed by AREVA Mining Business Group (hereafter referred to as the "Mining BG") in the 2013 responsible development of AREVA's Mining Activities Report (hereafter referred to as "the Report") established for the year ended December 31, 2013 based on the standards set out by the International Council on Mining and Metals (ICMM).

Our work is based on the five subject matters set out by the ICMM Sustainable Development Assurance Framework Procedure, which are:

- The alignment of the practices with the 10 Sustainable Development principles set out by the ICMM and the statutory conditions defined in the position statement;
- The description of process for identifying material issues (as reported); and the principles of completeness and materiality ;
- The existence and the degree of implementation of a managing system of the identified material issues related to sustainability;
- The performance level of Mining BG for a selection of material subjects for the given period;
- The alignment of the auto-declaration of Mining BG with the guidelines of the Global Reporting Initiative (GRI 3);

### **Responsibility of Mining BG**

It is the responsibility of the Mining BG Directorate to prepare and present the Report and the information it contains in accordance with the 5 subject matters abovementioned.

This responsibility includes: the creation, implementation and maintaining of an appropriate management system of the performance with the objective of saving, controlling and increasing the precision, completeness and reliability of data related to sustainability issues; and to ensure that the reported data is compliant with the level of relevance, reliability, competitiveness and neutrality requested; to ensure that the reported data is understandable and that all information that might impact the conclusions is reported; to ensure that the report does not contain significant anomaly due to frauds or resulting from errors.

## Independency and Quality control

Our independence is defined by regulatory requirements, the Code of Ethics of our profession as well as the article L. 822-11 of the French Commercial Code (*Code de commerce*). In addition, we have implemented a quality control system, including documented policies and procedures to ensure compliance with ethical standards, professional standards and applicable laws and regulations.

## Responsibility of statutory auditors

It is our role to express a limited assurance conclusion that the information presented in the report is in line with the five subject matters of the ICMM.

## Work performed

Set out below is a summary of the procedures performed:

- We evaluated the means used by the Mining BG to meet the expectations set out by the five subject matters abovementioned.
- We collected internal documentation (politics, charters, declarations, communication supports, etc.) to measure their consistence with the ten principles of sustainable development of the ICMM. We performed interviews with management representatives in charge of implementing those politics within the Mining BG.
- We evaluated the relevance of the process of identification and characterization of sustainability risks and opportunities in accordance with the principles of inclusion, materiality and reactivity.
- We verified the existence and evaluated the relevance of the management system of the sustainability issues considered as material for the Mining BG.
- Concerning the entity we selected<sup>1</sup> based upon its activity, its contribution to Mining BG in terms of sustainable development, its location and a risk analysis we performed, we conducted interviews to verify the local implementation of Mining BG procedures and performed tests of details.
- We carried out a review of the GRI auto-declaration included in the report.

We consider that the sampling methods we used by exercising our professional judgment allow us to express a limited assurance conclusion. An assurance of a higher level would have required more extensive verification work. Due to the necessary use of sampling techniques and other limitations inherent to the functioning of any information and internal control system, the risk of non-detection of a significant anomaly in the disclosed information can nevertheless not be entirely eliminated.

## Observations

Without qualifying our conclusion, we draw your attention to the following points:

A dedicated section of the online Report allows stakeholders to express their opinion on the materiality of various sustainable development topics with regards to the Mining BG activities. This participatory approach initiated in 2014 will bring value to the materiality analysis already presented, as required by the criteria number 2 of the ICMM.

### **Conclusion (limited assurance)**

Based on the work performed, nothing has come to our attention that causes us to believe that Mining BG's assertions presented in the Report are not in line with the ICMM's five subject matters.

Paris-La-Défense, October 31, 2014

The independent verifier  
Ernst & Young et Associés

Christophe Schmeitzky