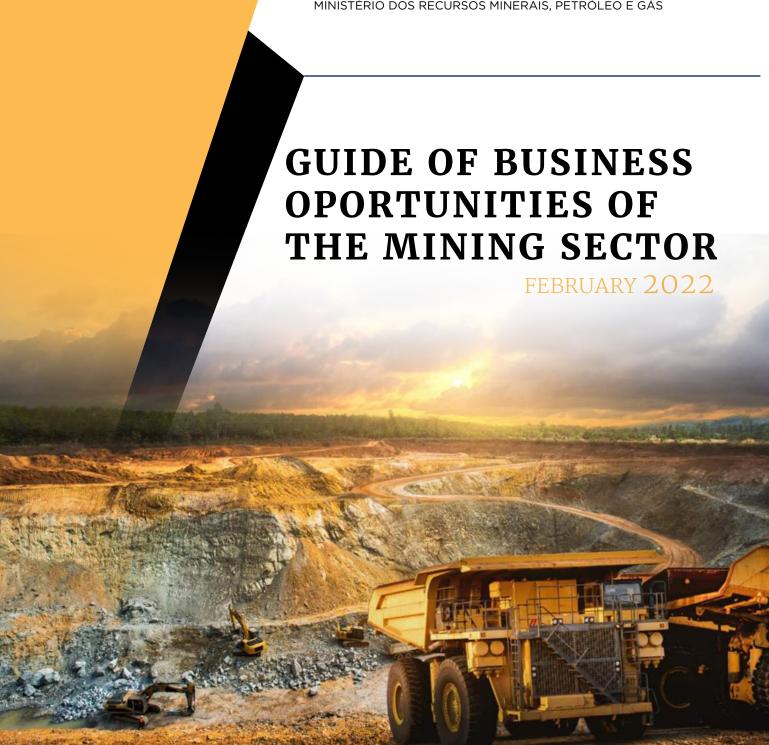
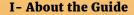


REPÚBLICA DE ANGOLA MINISTÉRIO DOS RECURSOS MINERAIS, PETRÓLEO E GÁS





II - Productive Chain

III - Productive Chain Segment

1. Precious Stones (Diamond) and Semi-Precious Stones

Minerals from the garnet group, zircon, beryl (emerald, aquamarine and other varieties of the same group), variety of quartz, tourmaline, ilmenite, among others.

2. Ferrous Metals

Iron, manganese, titanium, chromium.

3. Non-ferrous Metals

Copper, lead, zinc, tungsten, tin, nickel, cobalt, molybdenum, arsenic.

4. Noble Metals

INVESTMENT OPPOTUNITIES IN THE MINING SECTOR

Gold, silver, platinum, platinoids.

5. Rare Earth Minerals

Lanthanide group and yttrium.

6. Radioactive Minerals

Uranium, thorium, potassium and others.

7. Building Materials

Limestones, dolomites, asphaltite, sands, clays.

8. Ornamental Rocks

Anorthosites, granites, marbles and others.

9. Solid Fossil Fuels other than Oil and Gas

Peat, lignite, coal, anthracite, bituminous coal, tar sands, asphalt, shale and others.

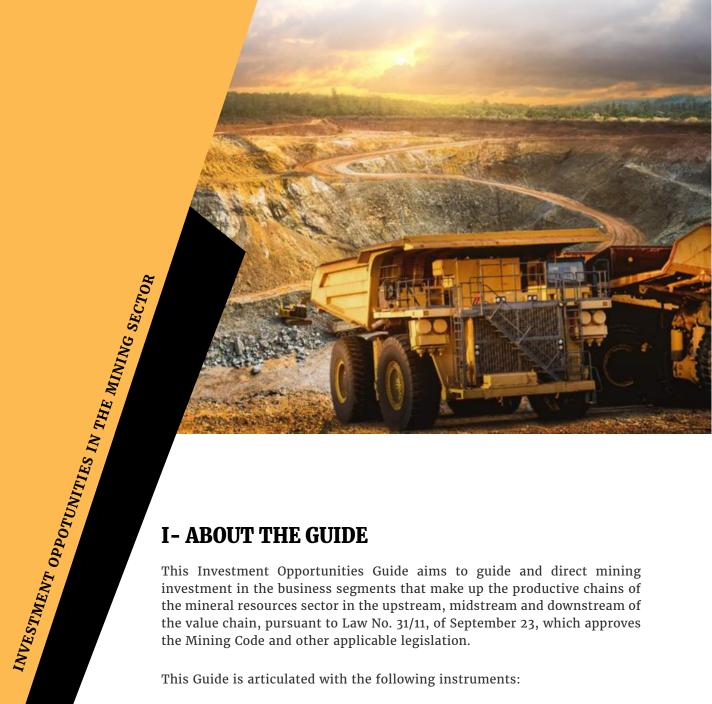
10. Non-Metallic Mineral Resources

Quartz, feldspar, kaolin, gypsum, barite, diatomite, wollastonite, talc, fluorite, sulfur, kyanite, guano, potassium salts, rock salt, micas, talc, graphite, asbestos, phosphorite, sulfur, bentonite.

11. Mineral-Medical Waters

Mineral and thermal waters.

IV - Intervening Entities



I- ABOUT THE GUIDE

This Investment Opportunities Guide aims to guide and direct mining investment in the business segments that make up the productive chains of the mineral resources sector in the upstream, midstream and downstream of the value chain, pursuant to Law No. 31/11, of September 23, which approves the Mining Code and other applicable legislation.

This Guide is articulated with the following instruments:

National Development Plan 2018-2022 Mining Sector Development Plan 2018-2022

II - PRODUCTIVE CHAIN

The productive chains identified in this Guide, with rare exceptions (diamond and ornamental stones, their value chains are underdeveloped. Therefore, great business opportunities open up, both in the upstream and in the midstream and downstream.

Both the diamond and ornamental stone ranges require much more investment in all their stages of the value chain, mainly in the case of diamonds, in cutting and in the jewelry segment. In ornamental stones, the transformation segment is still incipient, considering the existing potential.

Considering the above, it is concluded that the productive chains of Angola's mineral resources have enormous potential to be explored in all its aspects, so national and international actors are invited to invest in the development of its multiple sectors.

III - PRODUCTIVE CHAIN SEGMENT



UPSTREAM (EXPLORATION & PRODUCTION)

This primary stage comprises the exploration and production segments.



MIDSTREAM (PROCESSING)

The intermediate processing stage (midstream), represents the set of of actions related to adding value to the raw mineral resource.



DOWNSTREAM (TRANSFORMATION)

The final stage (downstream), that include the obtaining and trading of goods, involving manufacturing.



1°
PRECIOUS
(DIAMOND) AND
SEMI-PRECIOUS
PRODUCTIVE
CHAIN

DIAMONDS, GARNET, ZIRCON, BERYL (EMERALD, AQUAMARINE AND OTHER VARIETIES OF THE VARIETIES OF THE SAME GROUP), VARIETIES OF QUARTZ, TOURMALINE, ILMENITE, AMONG OTHERS

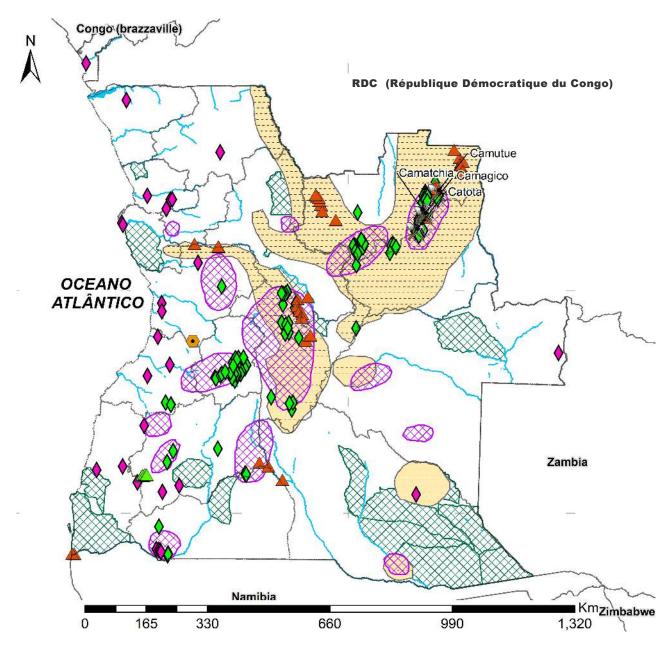
GEOLOGICAL INFORMATION

In Angola, the primary sources of diamonds are kimberlites, whose erosion has formed secondary deposits disposed in kimberlite provinces. The semi-precious stones are fundamentally related to the areas of occurrence of pegmatites, outcropping in the existings faults zones between the coastal strip, constituted by sedimentary basins of the Mesozoic and the interior region of the country, of the PreCambrian basement stratum belonging to the shield of Angola. They also occur in some metamorphic rocks(schists).

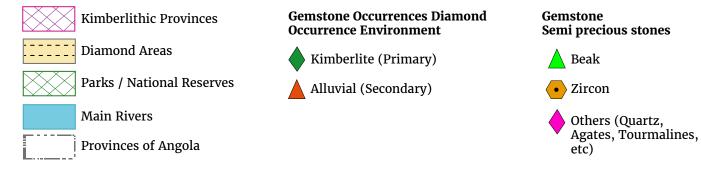
EXISTING PROJECTS

There are several diamond projects under exploration in the primary and secondary deposits, particularly in the provinces of Lunda Sul and Lunda Norte, but also in Malanje and Bié.

- ▶ Areas of high geological and mineral potential for exploration and production of precious and semi-precious stones.
- ▶ Brown field projects for primary and secondary diamond exploration.

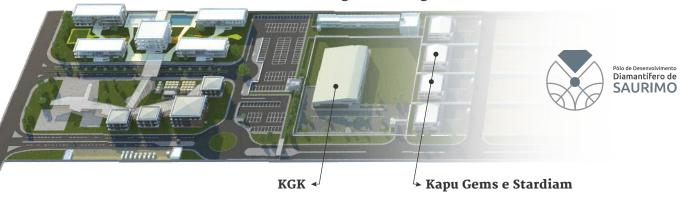


Subtitles



MIDSTREAM

Active Cutting & Polishing Factories in PDDS



▶ Saurimo Diamond Development Hub - aims to promote the expansion of polishing, jewellery and related services to support the mining industry in Angola.

Divided into two Main Areas, namely:

- Commercial Zone restaurants, food court, banks, tax offices, offices, convention centre, technical vocational school, medical post, car park and accommodation building with 90 rooms.
- Industrial zone with 3 Cutting & Polishing (C&P) factories, 1 Diamond Cutting, Polishing and Evaluation Training Center, 20 lots of different dimensions for the implementation of C&P factories and industries supporting the mining sector.

BUSINESS OPPORTUNITIES

• Cutting & Polishing of rough diamonds.

DOWNSTREAM

BUSINESS OPPORTUNITIES

▶ Implementation of logistics centers to support the downstream segment.

| INCENTIVES AND EXEMPTIONS | | | | | | |
|---|--------------|-----------|------------|--|--|--|
| Description | Upstream | Midstream | Downstream | | | |
| Exemption from payment of income tax (article 247 of Law No. 31/11, of 23 September, which approves the Mining | \checkmark | | | | | |
| Exemption from import and export of equipment intended for mining operations (Articles 269, 271, 273 and 274 of Law No. 31/11, of 23 September, which approves the Mining Code) | √ | √ | √ | | | |
| More attractive diamond marketing policy (60% of production is sold by producers to companies indicated or owned by them and 20% of production is preferably sold to national C&P factories) – Presidential Decree no 175/18, of 27 July. | √ | √ | | | | |
| Existing infrastructure (roads, railways, airport, etc) | √ | | | | | |
| Availability of geological information | | | | | | |
| Institutional support for the viability of projects | V | | | | | |
| Other applicable exemptions and incentives | | | | | | |
| Saurimo Diamond Development Pole Tax incentives defined for Zone C – Law no 10/18 of 26 June. Free Zone Status. Hybrid power plant and water treatment and distribution plant. | | √ | | | | |



2° FERROUS METALS PRODUCTIVE CHAIN



2. FERROUS METALS PRODUCTIVE CHAIN

UPSTREAM (EXPLORATION & PRODUCTION)

GEOLOGICAL INFORMATION

In Angola, the main deposits of ferrous and non-ferrous minerals are concentrated in the Center-North and Center-South regions of the country, where outcropping/exposed rocks are found. However, according to aerogeophysical data, there is geological-mining potential in the areas covered by the Kalahari sands, as marked by the Geological Domains.

BUSINESS OPPORTUNITIES

Areas of high geological-mining potential for exploration and production.

MIDSTREAM

EXISTING PROJECTS

• Existence of some processing units.

BUSINESS OPPORTUNITIES

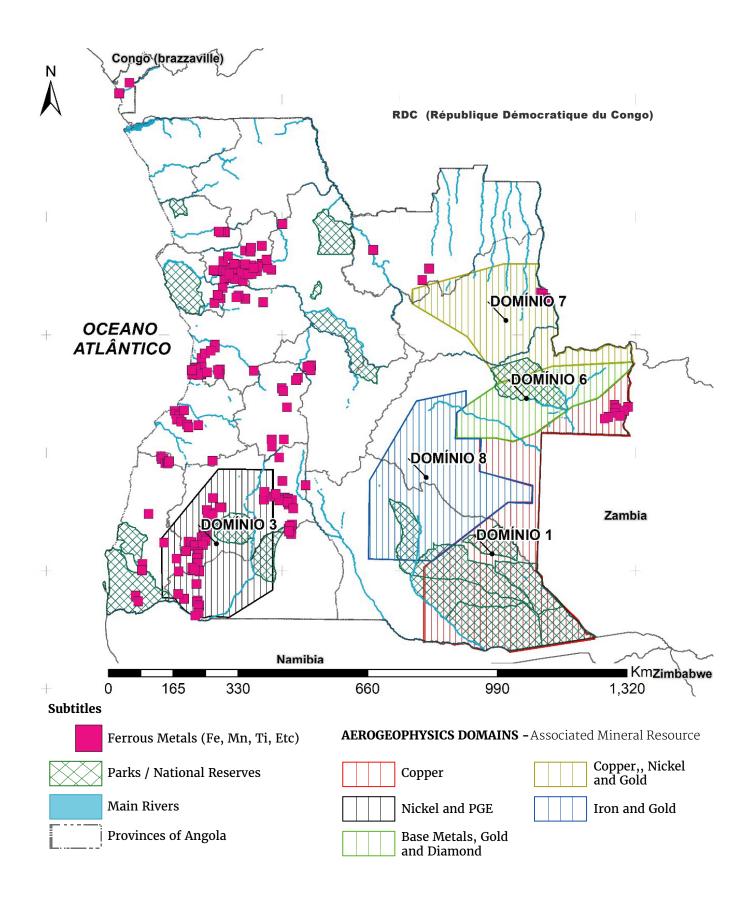
- Processing units (construction of steel mills).
- ▶ Implementation of logistics centers to support the midstream segment.

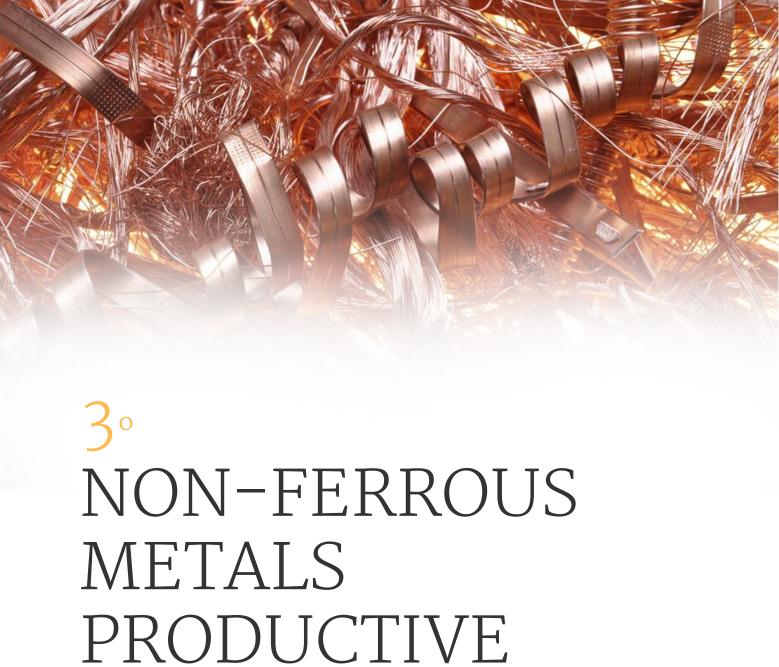
DOWNSTREAM

EXISTING PROJECTS

• Existence of some processing units.

- ▶ Processing units.
- ▶ Implementation of logistics centers to support the downstream segment.





CHAIN



3. NON-FERROUS METALS PRODUCTIVE CHAIN

UPSTREAM (EXPLORATION & PRODUCTION)

GEOLOGICAL INFORMATION

The main deposits of base metals are located along the provinces close to the coast and in the interior of the country, with special emphasis on the Cunene basic complex where ultrabasic rocks, potential carriers of minerals containing Cr, Ni, Pt, Ti, occur around this huge massif. The Cunene Complex, which extends into northern Namibia, is almost the same age as the similar large Great Dyke (Zimbabwe) and Bushveldt (South Africa) complexes, the latter known for the huge Ni and Cr.

BUSINESS OPPORTUNITIES

- ▶ Areas of high geological-mining potential for exploration & production.
- ▶ Extension of the copperbelt in Angola, in the province of Cuando Cubango (1/3 of the total deposit).

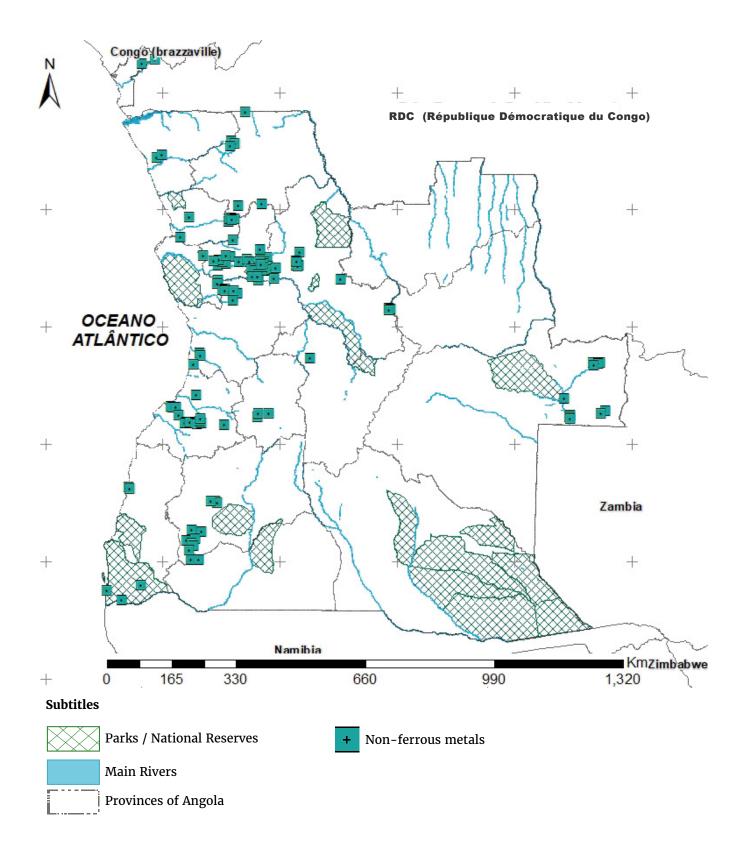
MIDSTREAM

BUSINESS OPPORTUNITIES

▶ Treatment and processing units.

DOWNSTREAM

- ▶ Processing units.
- ▶ Implementation of logistics centers to support the downstream segment.





4° NOBLE METALS PRODUCTIVE CHAIN

GEOLOGICAL INFORMATION

Angola presents an enormous potential of native gold deposits (greenstone belts) and platinoids, distributed in its oldest outcropping formations that are part of the ancient Pre-Cambrian cratons, today subdivided into several shields.

The ultrabasic rocks (dunites), occurring north of Huíla, in the Nhonhoca locality, 55 km from Huíla and close to the Tchivira Carbonatite, present high values of Cr and Ni. After detailed studies, they may eventually develop into important deposits of Cr, Ni and PGMs.

PROJECTS IN THE EXPLORATION PHASE - PRODUCTION

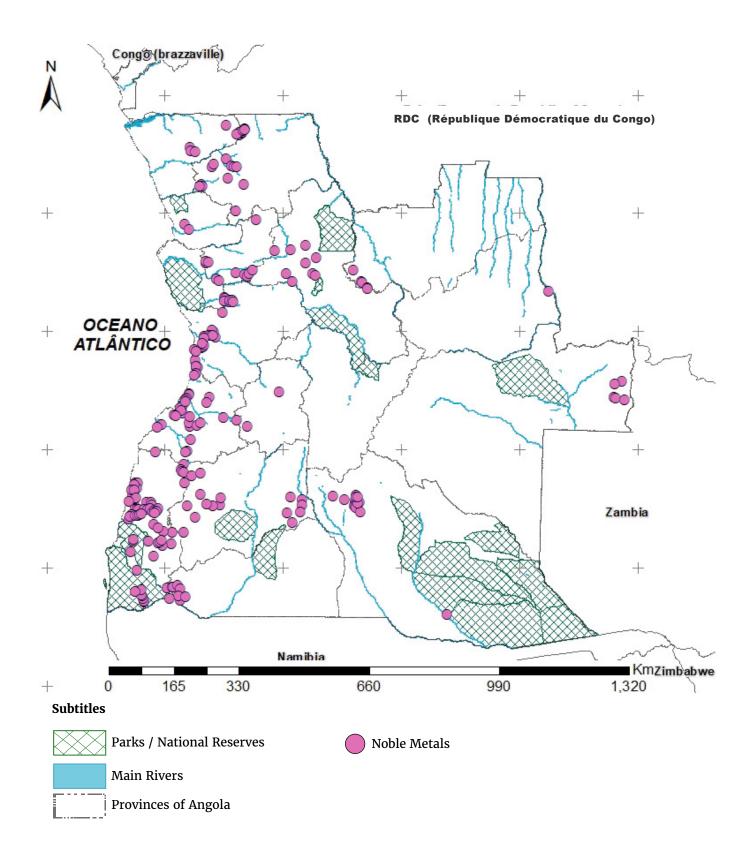
▶ Native gold exploration and production projects in the provinces of Cabinda, Huíla, Huambo, Bengo, Uíge, Cuanza Norte and Bié.

BUSINESS OPPORTUNITIES

- Gold projects in exploration and production, looking for investment.
- ▶ Areas of enormous geological-mining potential for exploration and production for gold, silver and platinoids.

MID/DOWNSTREAM

- Processing units.
- ▶ Implementation of logistics centers to support the downstream segment.







5. RARE EARTH MINERALS PRODUCTIVE CHAIN

UPSTREAM (EXPLORATION & PRODUCTION)

GEOLOGICAL INFORMATION

Angola has an enormous REM potential for mineralized or potentially mineralized carbonate rocks, concentrated essentially in the Center-South of the country, at the intersection of deep Pre-Cambrian tectonic alignments, reactivated in the Mesozoic, with NE-SO and OE directions, reactivated in the Mesozoic Era during the opening of the Atlantic Ocean.

Angola has the potential to establish itself as one of the largest producers and suppliers of rare earth element minerals and their derivatives. It is in this region where Evaluation Projects are located, such as Longonjo, NioBonga Quilengues, all in carbonatites.

BUSINESS OPPORTUNITIES

• Areas of high geological-mining potential for exploration and production.

MIDSTREAM

BUSINESS OPPORTUNITIES

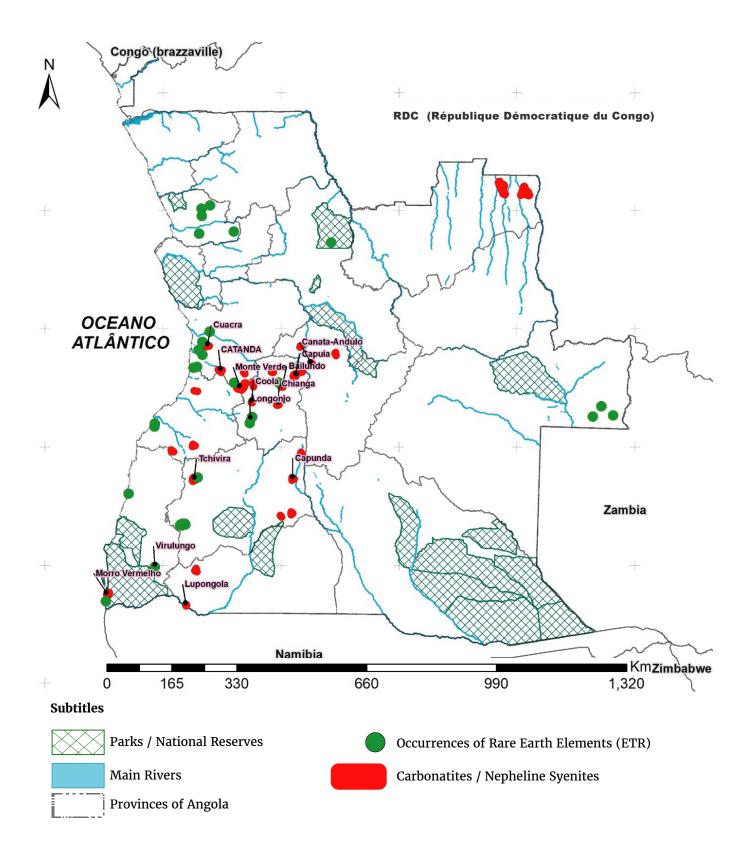
Processing units.

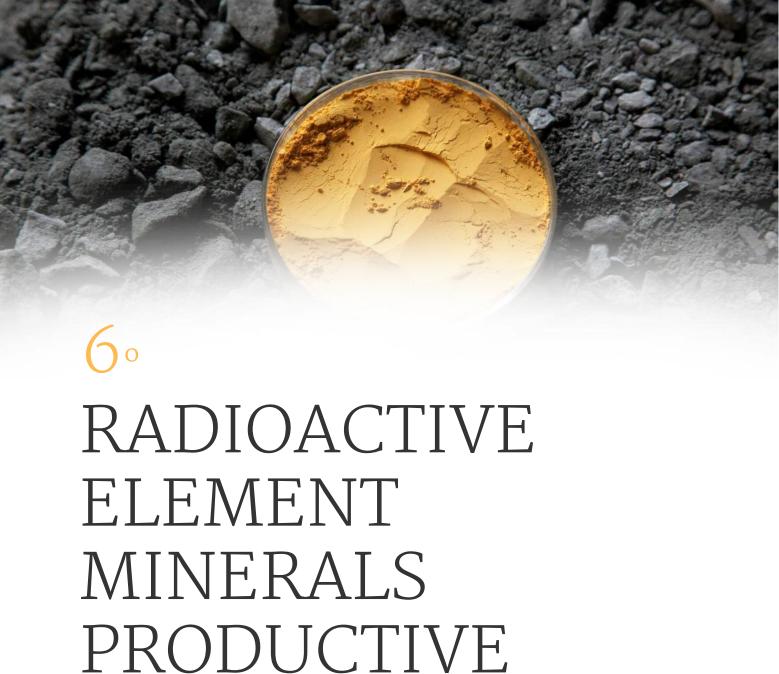
DOWNSTREAM

BUSINESS OPPORTUNITIES

▶ Processing units.

Implementation of logistics centers to support the downstream segment.





CHAIN

GEOLOGICAL INFORMATION

Radioactive element minerals are associated with granitic rocks, nepheline syenites, claystones and carbonatites.

BUSINESS OPPORTUNITIES

• Areas of high geological-mining potential for exploration and production.

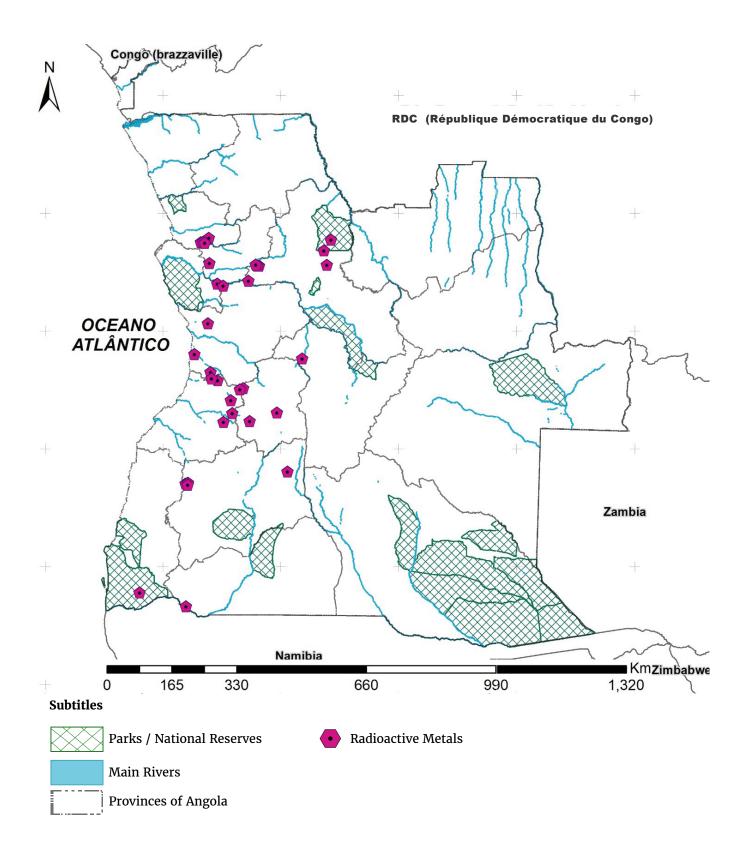
MIDSTREAM

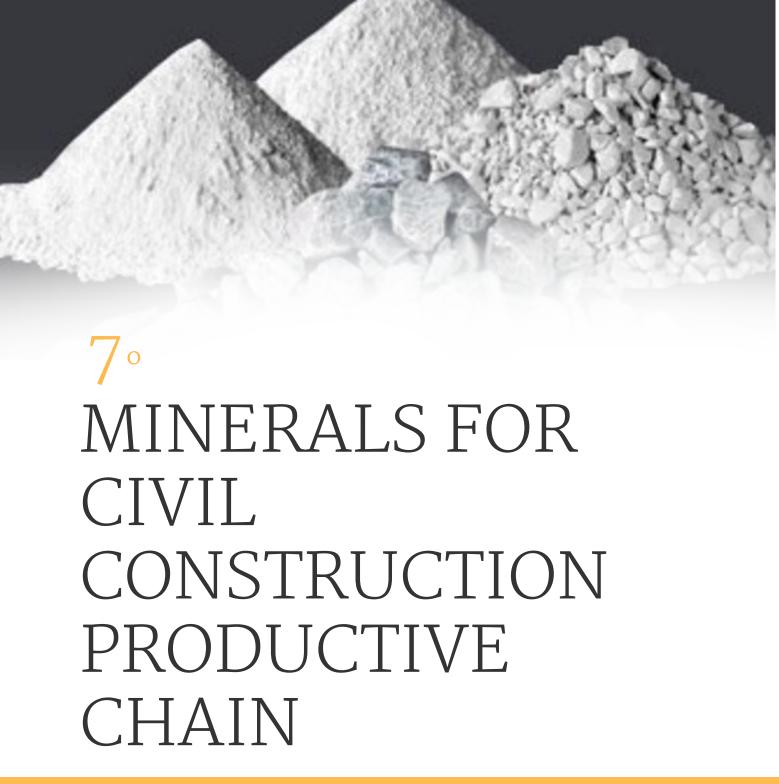
BUSINESS OPPORTUNITIES

▶ Areas of high geological-mining potential for exploration and production.

DOWNSTREAM

- ▶ Processing units.
- ▶ Implementation of logistics centers to support the downstream segment.





GEOLOGICAL INFORMATION

Minerals applied to civil construction are found throughout the Angolan territory.

PROJECTS IN THE EXPLORATION PHASE - PRODUCTION

▶ Several projects in operation in various provinces of the country.

BUSINESS OPPORTUNITIES

▶ Areas of high geological-mining potential for exploration and production.

MIDSTREAM

EXISTING PROJECTS

▶ Existence of treatment and processing units.

BUSINESS OPPORTUNITIES

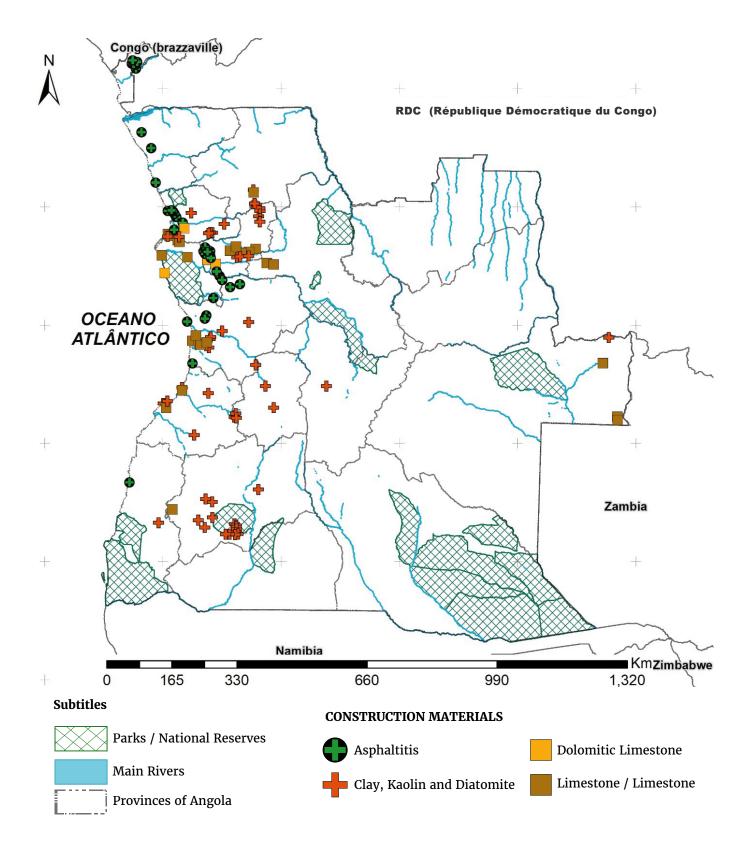
▶ Treatment and beneficiation units.

DOWNSTREAM

EXISTING PROJECTS

▶ Existence of some processing units.

- ▶ Implementation of construction material factories for civil construction.
- ▶ Use of asphaltite in road construction.
- ▶ Implementation of logistics centers to support the downstream segment.







8. ORNAMENTAL STONES PRODUCTIVE CHAIN

UPSTREAM (EXPLORATION & PRODUCTION)

GEOLOGICAL INFORMATION

The ornamental stone outcrops are distributed throughout almost the entire territorial extension, with the exception of the Southeast region of Angola.

Anorthosites of special interest here is the largest massif of basic rocks on the planet (45,000 km²), the Cunene Complex, source of the most varied species of rocks typical of the region, such as Anorthosite (commercially called Granito Negro Angola), Sodalite (commercially called Blue & Night) and further on, Marbles in Namibe Province.

BUSINESS OPPORTUNITIES

• Areas of high geological and mineral potential for exploration and production.

Exceptional business opportunities in the entire sector due to the enormous potential of the region, where a regional secular industry of ornamental stones and segments of peripheral industries supporting the ornamental stones industries will develop.

MIDSTREAM

EXISTING PROJECTS

▶ Existence of some treatment and processing.

BUSINESS OPPORTUNITIES

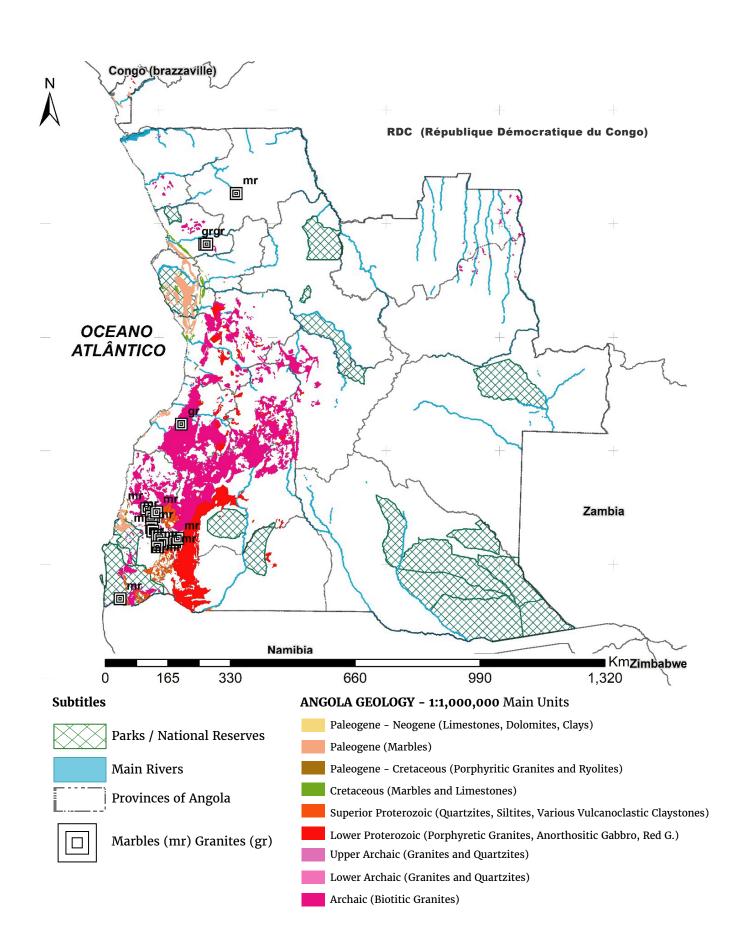
▶ Treatment and processing units.

DOWNSTREAM

EXISTING PROJECTS

▶ Existence of some processing units.

- ▶ Implementation of new transformation units.
- ▶ Implementation of logistics centers to support.





9°
SOLID FOSSIL
FUELS EXCEPT
OIL AND GAS
PRODUCTIVE
CHAIN

GEOLOGICAL INFORMATION

The occurrence of solid fossil fuels and in a state of transition from solid to liquid, is mostly associated with sedimentary basins of terrigenous and marine development, where organic material, especially of vegetal origin, was decomposed. Material such as asphalt and sands/bituminous rocks are found on the coast, with prevalence in the provinces of Bengo and Cabinda, while charcoal occurs in inland basins, such as in the Malanje and Moxico regions.

BUSINESS OPPORTUNITIES

• Areas of high geological-mining potential for prospecting and exploration.

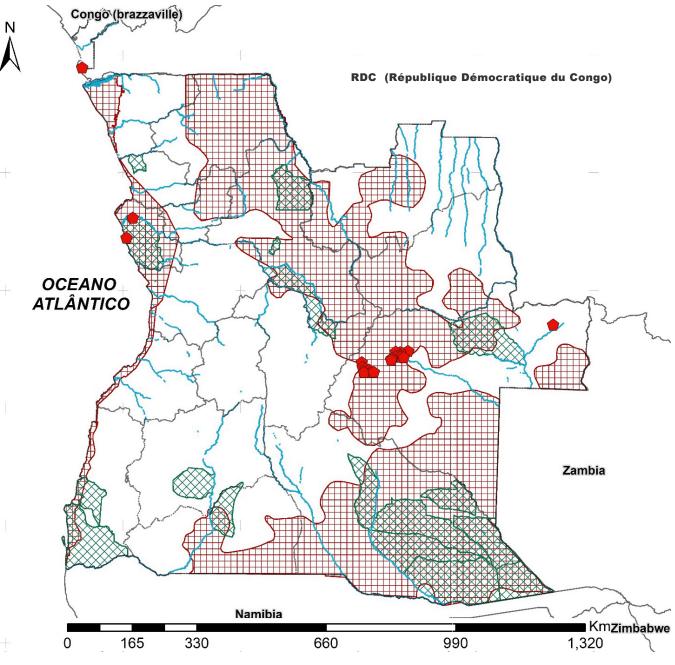
MIDSTREAM

BUSINESS OPPORTUNITIES

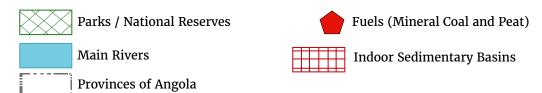
- Processing units.
- ▶ Implementation of logistics centers to support the downstream segment.

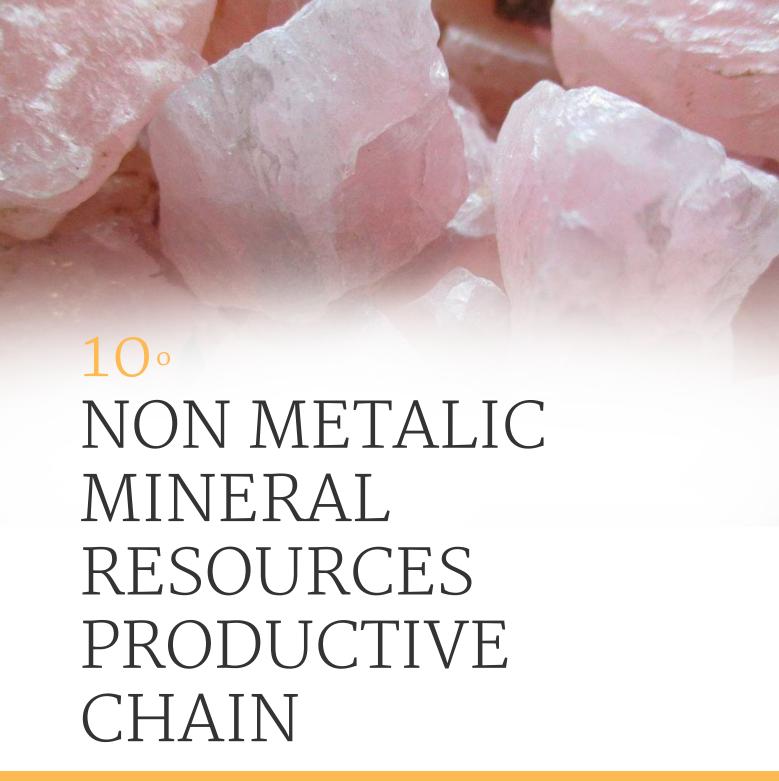
DOWNSTREAM

- ▶ Processing units.
- ▶ Implementation of logistics centers to support the downstream segment.



Subtitles





QUARTZ, FELDSPAR, KAOLIN, GYPSUM, BARITE, DIATOMITE, WOLASTONITE, TALC, FLUORITE, SULPHUR, CYANITE, GUANO, POTASSIUM SALTS, ROCK SALT, MICAS, TALC, GRAPHITE, ASBESTOS, PHOSPHORITE, SULPHUR, BENTONITE

GEOLOGICAL INFORMATION

The occurrences of non-metallic mineral resources are associated with sedimentary units along the coastal zones, as well as in plateau areas with occurrences of intermediate rocks (carbonatites or ancient sedimentary rocks) that suffer weathering resulting in the neoformation and accumulation of these minerals.

The three (3) main Angolan sedimentary basins (Congo Basin, Kwanza Basin, Namibe Basin) concentrate all kinds of evaporitic minerals resulting from the development of these basins since the opening of the Atlantic to the present day. There are natural deposits of phosphates in the provinces of Cabinda and Zaire, as well as of guano along the extensive coastal strip of Angola, especially in Sumbe. Gypsum and graphite occur mainly in the provinces of Benguela and Namibe.

PROJECTS IN THE EXPLORATION PHASE - PRODUCTION

- Granting of mining rights for civil construction multinational Lobito Litoral.
- ▶ Limestone and dolomite exploration & production along Angola's coastal strip and in inland sedimentary.

- ▶ Areas of high geological-mining potential for exploration and production for bentonite to support the oil and rock salt industry in Namibe province.
- ▶ Areas of high geological-mining potential for exploration and production for phosphates, graphite and industrial quartz varieties, among others.

MIDSTREAM

EXISTING PROJECTS

▶ Existence of treatment and processing units for some minerals industrial.

BUSINESS OPPORTUNITIES

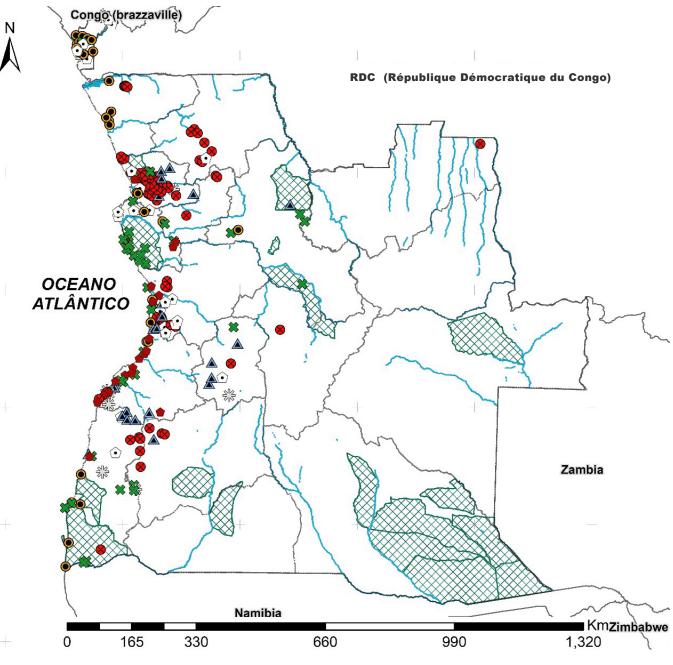
▶ Treatment and processing units (dolomitic limestone).

DOWNSTREAM

EXISTING PROJECTS

▶ Existence of processing units.

- ▶ Development of chemical and food products (rock salt) factories.
- ▶ Development of the optical (quartz) and chip (silica sands) industry.
- ▶ Development of the microelectronics industry (graphene).
- Development of the construction material industry (gypsum, asbestos, limestone).
- Development of the fertilizer industry (guano, phosphates, limestone).
- ▶ Development of the ceramic and chemical industry (kaolin).
- ▶ Implementation of logistics centers to support the downstream segment (inputs for domestic agricultural activity).









MINERAL AND MEDICINAL WATERS PRODUCTIVE CHAIN

MINERAL-MEDICINAL WATERS PRODUCTIVE CHAIN (MINERAL AND THERMAL WATERS)

UPSTREAM (EXPLORATION & PRODUCTION)

GEOLOGICAL INFORMATION

Mineral-medicinal and thermal waters appear during the last phase of magmatism, as hydrotherms, often with diluted minerals (eg sulfates), with temperatures above room temperature. Known occurrences are identified in Conda (Cwanza Sul Province) and Alto Hama (Huambo Province).

BUSINESS OPPORTUNITIES

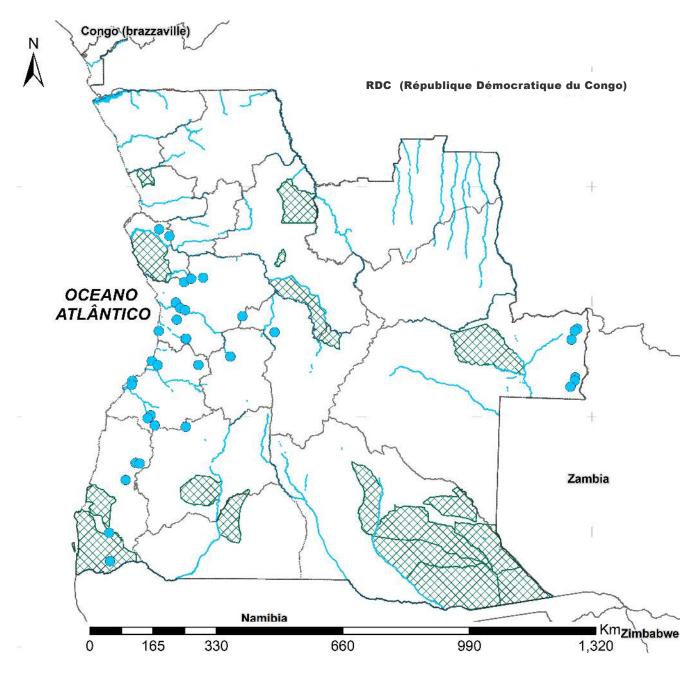
▶ Areas of high geological-mining potential for the exploration of mineral-medicinal and thermal waters.

DOWNSTREAM

PROJECTOS EXISTENTES

▶ Instances of thermal waters in the central south region of the country.

- ▶ Implementation and development of the mineral-medicinal water industry.
- ▶ Implementation of thermal instances.
- ▶ Promotion of eco-tourism and health.



Subtitles



INCENTIVES AND EXEMPTIONS

SEMI-PRECIOUS STONES PRODUCTIVE CHAIN

FERROUS METALS PRODUCTIVE CHAIN

NON FERROUS METALS PRODUCTIVE CHAIN

NOBLE METALS PRODUCTIVE CHAIN

RARE-EARTH MINERALS PRODUCTIVE CHAIN

RADIOACTIVE ELEMENTS MINERALS PRODUCTIVE CHAIN

MINERALS FOR CIVIL CONSTRUCTION PRODUCTIVE CHAIN

ORNAMENTAL STONES PRODUCTIVE CHAIN

SOLID FOSSIL FUELS OTHER THAN OIL AND GAS PRODUCTIVE CHAIN

NON-METALLIC MINERALS PRODUCTIVE CHAIN

MINERAL-MEDICINAL WATERS PRODUCTIVE CHAIN

| Descripãion | Upstream | Midstream | Downstream | |
|---|--------------|--------------|--------------|--|
| IExemption from payment of income tax (article 247 of Law No. 31/11, of 23 September, which approves the Mining | √ | | | |
| Exemption from import and export of equipment intended for mining operations (Articles 269, 271, 273 and 274 of Law No. 31/11, of 23 September, which approves the Mining Code) | | √ | √ | |
| Existing infrastructure (roads, railways, airport, etc) | | V | \checkmark | |
| Availability of geological information | \checkmark | \checkmark | \checkmark | |
| Institutional support for the viability of projects | \checkmark | \checkmark | \checkmark | |
| Other applicable exemptions and incentives | V | \checkmark | V | |

INTERVENING ENTITIES

MINISTRY OF MINERAL RESOURCES, OIL AND GAS (MIREMPET)

Address: Avenida 4 de Fevereiro n.º 105,

C.P.: 1279-C, Luanda - Angola **Telephone:** (+244) 226 421 396 **Email:** geral@mirempet.gov.ao

Website: www.mirempet.gov.ao

ANGOLA GEOLOGICAL SURVEY (IGEO)

Address: Rua nº 311, Cidade do Kilamba

Luanda - Angola

Telephone: (+244) 923 555 036 **Email:** contactos@igeo.gov.ao

Website: www. igeo.co.ao

NATIONAL MINERAL RESOURCES AGENCY (ANRM)

Address: Rua C Sector B Q6 No 72, Talatona

Luanda - Angola

Telephone: (+244) 222 016 085

(+244) 922 727 279

Email: geral@anrm.gov.ao

Website: www.anrm.gov.ao

NATIONAL DIAMOND COMPANY (ENDIAMA EP)

Address: Rua Major Canhangulo, Nº 100

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Telephone: (+244) 222 334 585 / 222 396 597

Email: endiama.invest@endiama.co.ao

Website: www.endiama.co.ao

ANGOLA DIAMOND SALES COMPANY (SODIAM EP)

Address: Rua Rainha Ginga, Nº 87, 7º A

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Telephone: (+244) 924 156 986

Email: geral@sodiam.co.ao

Website: www.sodiam.co.ao

