

Part I. LEGAL DOCUMENTS

THE MINISTRIES

THE MINISTRY OF INDUSTRY AND TRADE

DECISION No. 25/2008/QĐ-BCT OF AUGUST 4, 2008, APPROVING THE PLANNING ON ZONING OF AREAS FOR EXPLORATION, EXPLOITATION, PROCESSING AND USE OF PRECIOUS STONE, RARE EARTH AND URANIUM ORES IN THE PERIOD FROM NOW TO 2015, WITH A VISION TOWARD 2025 TAKEN INTO CONSIDERATION

THE MINISTER OF INDUSTRY AND TRADE

Pursuant to the March 20, 1996 Law on Minerals and the June 14, 2005 Law Amending and Supplementing a Number of Articles of the Law on Minerals;

Pursuant to the Government's Resolution No. 59/2007/NQ-CP of November 30, 2007, on a number of solutions to problems arising in construction investment activities and reform of some administrative procedures applicable to enterprises;

Pursuant to the Government's Decree No. 160/2005/ND-CP of December 27, 2005, detailing and guiding the implementation of the Law on Minerals and the Law Amending and Supplementing a Number of Articles of the Law on Minerals;

Pursuant to the Government's Decree No. 189/

2007/ND-CP of December 27, 2007, defining the functions, tasks, powers and organizational structure of the Industry and Trade Ministry;

In furtherance of the Government Office's Notice No. 5487/VPCP-CN of November 28, 2007, notifying the Prime Minister's opinions on empowering the Industry Minister (now the Industry and Trade Minister) to approve the planning on zoning of areas for exploration, exploitation, processing and use of precious stone, rare earth and uranium ores in the period from now to 2015, with a vision toward 2025 taken into consideration;

Considering Report No. 221/TT-NCPT of June 9, 2008, of the director of the Research Institute for Industrial Strategies and Policies;

At the proposal of the directors of the Planning Department and the Heavy Industry Department,

DECIDES:

Article 1.- To approve the planning on zoning of areas for exploration, exploitation, processing and use of precious stone, rare earth and uranium ores in the period from now to 2015, with a vision toward 2025 taken into consideration, with the following principal contents:

I. Development viewpoints:

- To develop the industry of exploitation and processing of precious stone, rare earth and uranium ores in line with the planning on development of Vietnam's industry and local socio-economic development plans, ensuring harmony between national and local interests, meeting requirements of defense and security maintenance, and protecting valuable cultural works and the ecological environment in localities

where minerals are available;

- To develop the industry of exploitation and processing of precious stone, rare earth and uranium ores in a stable and sustainable manner, with advanced technologies, thereby ensuring safety and economic efficiency, and on the basis of rationally and economically exploiting natural resources in the country;

- To carry out one step ahead exploring activities in order to create a reliable database about precious stone, rare earth and uranium ores for mineral exploration and exploitation in the planning periods;

- To develop the industry of exploitation and processing of precious stone, rare earth and uranium ores on the basis of natural resource advantages and available domestic market as well as socio economic conditions and infrastructure in each mineral area;

- To develop the industry of exploitation and processing of rare earth ores in cooperation and association with foreign groups and companies in order to take advantage of their technologies and product outlets;

- To exploit, process and use uranium ores for peaceful purposes. The State holds a monopoly in exploiting, processing and using uranium ores as well as radioactive preparations. From now to 2025, to study the exploitation and processing of uranium ores mainly to meet the domestic needs for nuclear electricity development.

II. Development objectives

- To concentrate on exploring mines and mining spots of precious stone, rare earth and uranium ores which have been surveyed and assessed in order to provide reliable reserves for the exploitation and processing needs in the

planning periods;

- To conduct thorough and economical exploitation combined with deep processing of precious stone, rare earth and uranium ores with advanced technologies. To ensure the efficient exploitation and processing and the eco-environmental protection in localities where mineral activities are conducted.

- To strive for the following targets of exploited mineral and deep-processing product outputs:

+ Precious stones: By 2015, to exploit on an industrial scale six mines in Nghe An and Yen Bai provinces. Total exploitation output will be 200,000-300,000 m³ of rare earth per year. The outputs of worked and polished cabochon and facet stones will be around 500,000 cts/year and 150,000-200,000 cts/year, respectively. After 2015, to call for investment in the exploration and exploitation of three new mines in Yen Bai and four new mines in Nghe An. To further invest in developing the processing and fashioning of precious stones to meet domestic needs and for foreign partners;

+ Rare earths: By 2015, to exploit and separately process rare earth oxide (REO) products with a total output of 10,000 tons of REO, and successfully produce some rare earth metals on a small scale. By 2025, to double that output (20,000 tons of REO), and strive for the production of some applied products of rare earths.

+ Uranium: By 2025, to step by step perform some stages of the nuclear fuel cycle, proceeding to producing nuclear fuels from domestically exploited natural uranium. At the initial stage, to produce technical uranium (yellow cake) from sandstone ores in Nong Son area, and subsequently step by step conduct processes of manufacturing ceramic pellets and natural

uranium and enriched uranium fuel bars (under the plan on hire of foreign processors or import of enriched raw materials) for domestic nuclear power plants.

III. Forecast precious stone, rare earth and uranium needs

Precious stone, rare earth and uranium needs are forecast as follows:

| No | Category | Unit of calculation | 2010 | 2015 | 2020 | 2025 |
|----|------------------------------------|----------------------|-------|---------|-------|-------|
| 1 | Precious stones other than diamond | Million USD | 15-16 | 21-23 | 28-34 | 38-50 |
| 2 | Rare earths | Thousand tons of REO | 0.8-1 | 1.5-1.8 | 3-3.5 | 4-5 |
| 3 | Uranium | Tons of U | - | - | 170 | 680 |

IV. Exploration planning

1. Exploration of precious stone ores

- By 2015, to concentrate on exploring in A-level potential areas, including Doi Ty, Bai Trieu, Ban Gie and Ban Khum-Ban Ken and Pom Lau (Nghe An), and mines of Truc Lau, Nuoc Lanh, Vinh Dong and their vicinities in Yen Bai;

- To organize survey and research to discover and find B- and C-level potential areas. If the results are positive, exploration will be conducted after 2015.

2. Exploration of rare earth ores

- In the 2008-2015 period: To explore Dong Pao and Yen Phu mines;

- In the 2016-2020 period: To explore South Nam Xe mine.

3. Exploration of uranium ores

During 2008-2015, to explore Pa Lua mine;

Pa Rong mine; Khe Cao and other assessed areas with expected outputs of 4,000, 4,000 and 6,000 tons of U_3O_8 , respectively.

V. Exploitation and processing planning

1. Exploitation and processing of precious stone ores

- From now to 2015: To exploit on an industrial scale six mines: Doi Ty, Bai Trieu and Ban Gie

(Quy Chau, Nghe An) and Truc Lau (Km 51), Nuoc Lanh and Vinh Dong (Luc Yen, Yen Bai) with an annual output of between 20,000-50,000 m^3 of ores per mine. To intensively invest in existing establishments engaged in fashioning and heat treatment of precious stones. To call for foreign investment in the processing and fashioning of precious and semi-precious stones and jewelry on the basis of Vietnam's advantage of cheap and skilled laborers in Hanoi and Ho Chi Minh cities, combined with tourism;

- From 2016 to 2025: To develop the exploitation of mines of Ban Khum-Ban Ken, Pom Lau and Cha Lim-Dong Xuong (Nghe An) and a jade mine of Co Phuong (Son La) and other areas on the basis of discovery, exploration and assessment results in the previous period. To further invest in upgrading existing fashioning establishments and call for investment in the production of high-class products from

domestically exploited and imported materials.

2. Exploitation and processing of rare earth ores

Vietnam's total rare earth reserve is forecast at around 22 million tons of REO, of which the reserve of B + C1 + C2 ores is 9,783,000 tons. The remaining part will be P1 and P2 ores.

- In the 2008-2015 period: To concentrate on exploiting Dong Pao mine, with an annual output of around 200,000 tons of exploited and preliminarily processed rare earth ores. Post-sorting pure rare earth ores will be of 45% RE_2O_3 accompanied by byproducts of pure barite ore 95% (BaSO_4) and fluorite ore 97% (CaF_2). These pure ores will further be hydrolyzed into separate Ce, La, Pr and Nd oxides and REO_2 of the heavy element group. The total output of these separate rare earth oxides will be around 10,000 tons/year, which will largely be exported. The small volume will be domestically used.

To invest in and commence the exploitation of Yen Phu mine for many heavy elements with an output of 3,000-5,000 tons of REO/year.

To build a small-sized rare earth metal production establishment, which will initially import materials from foreign countries before using separate rare earth oxides produced from Dong Pao ores.

- In the 2016-2025 period: Depending on the market size, to put South Nam Xe mine into exploitation. To call for investment in hi-tech projects to produce rare earth metals and rare earth-applied products, such as accumulators, permanent magnets, high-class abrasive powder, fertilizers and catalysts.

3. Planning on exploitation and processing of uranium ores

Vietnam's total uranium reserve is forecast at around 218,000 tons of U_3O_8 , including around 17,000 tons of ores of classes C1 and C2 and 201,000 tons of ores of class P.

- In the 2008-2015 period: To combine exploration activities with researching and developing semi-industrial technologies. Based on exploration and technology research results, to make a feasible report on the exploitation of Pa Lua or Pa Rong mine.

- After 2015: To exploit on a small scale (with an output of 50,000-100,000 tons of crude ores/year) in Nong Son area.

At the initial stage, to produce technical uranium (yellow cake) from ores. Subsequently, to step by step perform the stages of manufacturing ceramic pellets and natural uranium and enriched uranium fuel bars (under the plan on hire of foreign processors or import of enriched raw materials).

VI. Investment capital

Investment capital for precious stone, rare earth and uranium ore exploration, exploitation and processing in the planning period is estimated at around VND 3,330-4,060 billion, including VND 1,460-1,660 billion for the 2008-2015 period and VND 1,870-2,400 billion for the 2016-2025 period.

Investment capital includes self-acquired capital of enterprises, the State's development investment loans and commercial loans and foreign direct investment capital. State budget capital for the exploration and technology research of uranium mines will be around VND 245-300 billion.

VII. Major solutions and policies

1. Group of overall solutions and policies

- Encouraging the deep processing of precious stone, rare earth and uranium ores into high-

quality products for domestic consumption and export.

- *Stepping up the decentralization of responsibilities to manage natural resources, perfecting regulations and intensifying the organization of bidding for mineral activities, especially exploitation and processing of precious stone ores; establishing joint-stock companies with the participation of organizations and individuals that invest in all stages from exploration, exploitation to processing. Encouraging the diversification of forms of ownership to attract domestic and foreign resources for developing the exploitation and processing of precious stone and rare earth ores in the direction of prioritizing capable domestic enterprises; entering into joint ventures and associations with foreign parties in processing activities that require high techniques and technologies, for example processing of rare earths.*

- *Raising social responsibilities of enterprises engaged in mining precious stones, rare earths and uranium, such as making contributions to infrastructure construction; attracting, training and employing local laborers; proactively taking measures to protect the ecological environment and improve the social environment.*

2. Group of specific solutions and policies toward each type of mineral

2.1. For precious stones

Permitting the salvage extraction of minerals in already exploited mines on the basis of annually devised extraction measures. Creating favorable conditions for import of precious and semi-precious stones from foreign countries for processing in Vietnam. Encouraging organizations and individuals to participate in the processing and fashioning of export goods from imported materials under the policy of reducing value-added tax for

the processing and fashioning of precious stones and import tax on imported rough precious stones (including diamond) for export processing.

- *Reforming procedures for licensing precious stone exploration and exploitation activities in order to combine the exploration with exploitation and deep processing of minerals; intensifying the bidding for areas with precious stones.*

Intensifying the propagation and advertisement of Vietnamese gem products by actively and regularly participating in international precious stone fairs.

Establishing technical standards as well as criteria and parameters for classifying precious stones in line with international practice.

Stepping up international cooperation and seeking foreign assistance in the domain of precious stones in order to train human resources, receive transferred technologies and experience in the assessment and heat-treatment of precious stones, and updating latest scientific and technological information on precious stones.

Strengthening the operation of the Vietnam Precious Stone Association in the direction of raising its role as an actual coordinator for precious stone enterprises.

2.2. For rare earths

Concentrating on solving market problems so as to develop the industry through undertaking cooperation with leading distributors in the world, especially Japanese ones in the near future, with a view to taking advantage of their technologies and outlets for factoring products.

Creating conditions for granting as soon as possible exploitation permits for enterprises to execute their projects.

Allowing enterprises that apply rare earths in the production of fertilizers, diesel oil additives,

rare earth ferro-chemicals, intermediary alloys and ~~rare earth~~ metals to enjoy the Government's preferential policies like enterprises applying high technologies, with a view to promoting the ~~development~~ of industrial-scale production.

2.3. For uranium

Uranium is a special mineral subject to ~~monopo-lized~~ management by the State. ~~Therefore, in the near future, it is necessary to prioritize the allocation of state budget capital for programs on exploration and survey of this natural resource- technological research; training of high-quality human resources capable of applying foreign technologies in the process of cooperation in uranium research, exploitation and processing under the Prime Minister's Decision No. 114/2007/QĐ-TTg of July 23, 2007, approving the master plan on implemen-tation of the Strategy on peaceful utilization of atomic energy up to 2020.~~

VIII. Organization of implementation

1. The Industry and Trade Ministry shall, in performing the state management of the industry ~~of mineral~~ exploitation and processing, publicize and assume the prime responsibility for the implementation of the planning; periodically ~~update latest~~ information on the implementation and ~~adjustment~~ of the planning, ensuring its conformity with the national socio-economic development plans and the international integration roadmap.

It shall assume the prime responsibility for, and coordinate with concerned ministries and branches in, proposing mechanisms and policies for stable and sustainable development of the ~~industry~~ of precious stone, rare earth and uranium ~~ore~~ exploitation and processing.

2. The Ministries of Natural Resources and Environment; Science and Technology; Planning and Investment; Finance; Transport; Agriculture and Rural Development; Construction; and Information and Communication shall, *within the ambit of their respective functions and tasks*, assume the prime responsibility for, and coordinate with the Industry and Trade Ministry in, implementing and concretizing solutions and policies set forth in this Decision.

3. Provincial/municipal People's Committees shall:

- Organize the management and protection of *natural resources* of precious stones, rare earths and uranium in their respective localities; and prevent the illegal exploitation and export of these minerals;

- Organize the elaboration and submission of *plannings* on precious stone, rare earth and uranium ore, exploration, exploitation and processing under their *licensing competence and in line with this planning* to People's Councils of the same level for approval. Zone off and approve areas where precious stone, rare earth and uranium mineral activities are banned, temporarily banned or restricted;

- Coordinate with state management agencies and enterprises in executing projects specified in this Decision.

Article 2.- This Decision takes effect 15 days after its publication in "CONG BAO."

Article 3.- Ministers, heads of ministerial-level agencies, heads of government-attached agencies and presidents of provincial/municipal People's Committees shall implement this Decision.

Minister of Industry and Trade
VU HUY HOANG

Appendices

LISTS OF SCHEMES ON PRECIOUS STONE, RARE EARTH AND URANIUM ORE EXPLORATION, EXPLOITATION, PROCESSING AND USE UP TO 2015, WITH A VISION TOWARD 2025 TAKEN INTO CONSIDERATION

(Attached to the Industry and Trade Minister's Decision No. 25/2008/QĐ-BCT of August 4, 2008)

Appendix 1

LIST OF PRECIOUS STONE MINES AND MINING SPOTS AS OF JUNE 30, 2007, AND THE EXPLORATION AND EXPLOITATION PLANNING

| No | Name of mine or mineral spot | Province | Location - geographical coordinates | Survey level | Forecast reserve and natural resources | Development planning |
|----|---|----------|--|---|---|--|
| 1 | Jade stone in Co Phuong, Song Ma district | Son La | | Surveyed by the Gem and Gold Corporation (in 1993 and 1999) | With potential | Survey and assessment up to 2015; call for exploration and exploitation after 2015 |
| 2 | Precious stones in Truc Lau | Yen Bai | Truc Lau commune, Luc Yen district 22 ⁰ 03'30"; 104 ⁰ 39'45" | Surveyed and assessed by the Yen Bai Gem and Gold Company | Cozindon mineral spot with reserves of C ₁ = 129 kg; C ₂ = 1,328 kg; C ₁ + C ₂ + P = 1,516 kg | Previously exploited and presently deserted. Planning on further exploration and exploitation up to 2015 |
| 3 | Precious stones in Nuoc Lanh | Yen Bai | Lieu Do commune, Luc Yen district 22 ⁰ 04'40"; 104 ⁰ 48'38" | Found and assessed by Gem Enterprise 183 on a 1:25,000 scale in 1989-1992 | Mineral mine with a corindon reserve of 3.6 tons, including 171 kg of commercial-value ores | Planning on exploration and exploitation up to 2015 |

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| 4 | Precious stones in Hin Om | Yen Bai | Minh Tien commune, Luc Yen district 22 ⁰ 03'25"; 104 ⁰ 49'43" | Found and assessed by Gem Enterprise 183 on a 1:25,000 scale | Total corindon resource is 2,770 kg including 118 kg of commercial-value ruby | Previously exploited by MENAGEMS, repeatedly dug by people. Planning on salvage extraction |
| 5 | Precious stones in Phai Chép - Bai Can | Yen Bai | Lieu Do commune, Luc Yen district 22 ⁰ 03'56"; 104 ⁰ 48'13" | Found by Gem Enterprise 183 on a 1:25,000 scale in 1993 | Total corindon resource is 3,382 tons, including 81.2 kg of precious stones | Previously exploited by Viet Thai, dug by people. Planning on salvage extraction |
| 6 | Precious stones in Vang Sao | Yen Bai | An Phu commune, Luc Yen district 22 ⁰ 02'19"; 104 ⁰ 48'34" | Found by Gem Enterprise 183 on a 1:25,000 scale in 1993 | Commercial natural resource of four ore bodies is 62 kg of corindon | Previously exploited by MENAGEMS, repeatedly dug by people. Planning on salvage extraction |
| 7 | Precious stones in Lung Can B | Yen Bai | Lieu Do commune, Luc Yen district 22 ⁰ 04'06"; 104 ⁰ 48'54" | Found by Gem Enterprise 183 on a 1:25,000 scale in 1993 | Corindon resource is 2,245 kg, including 69 kg of commercial-value precious stones | Previously exploited by Viet Thai company, repeatedly dug by people. Planning on salvage extraction |
| 8 | Precious stones in Vinh Dong | Yen Bai | Lieu Do commune, Luc Yen district 22 ⁰ 05'00"; 104 ⁰ 49'17" | Found by Gem Enterprise 183 on a 1:25,000 scale in 1993 | Corindon resource is 187 kg, including 15 kg of commercial-value precious stones | Planning on exploration and exploitation in the 2011-2015 period |

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| 9 | Precious stones in Tan Huong | Yen Bai | Tan Huong commune, Yen Binh district 21 ⁰ 48' 34"; 104 ⁰ 53' 45" | Surveyed and exploited by the Gem and Gold Corporation | No report has been sent to the Geological Archive, a potential area | Exploited and closed down by the Yen Bai precious stone and gold company. Planning on salvage extraction |
| 10 | Precious stone spot in Nam Cuong | Bac Kan | Nam Cuong - Cho Don 105 ⁰ 36' 58" - 22 ⁰ 23' 12" | | Corindon resource of class P ₁ : 9,759 kg, of which class B = 0.33 kg and C=75 kg | Without a basis and with little potential, not to be considered for planning |
| 11 | Precious stone spot in Quang Khe | Bac Kan | Quang Khe - Ba Be 105 ⁰ 40' 52" - 22 ⁰ 20' 45" | | Corindon resource of class P ₁ : 639 kg, of which class B = 1.02 kg and C=75.4 kg | Without a basis and with little potential, not to be considered for planning |
| 12 | Precious stone mine in Xuan Le | Thanh Hoa | Xuan Le - Thuong Xuan 105 ⁰ 10' 20" - 19 ⁰ 49' 55" | | 12,926 kg | Without a basis and with little potential, not to be considered for planning |
| 13 | Precious stones in Ban Khum - Ban Ken | Nghe An | Chau Binh commune, Quy Chau district 19 ⁰ 41' 34"; 105 ⁰ 05' 00" | Found and surveyed by the Mine Survey and Exploration Company in 1997 | Mineral spot. Forecast natural resource of class P ₁ : corindon of categories A+B: 10,600g, categories C+D: 149,300g + spinel of categories A+ B: 2,300 g and C+D: 1,321,800 g | Planning on exploration and exploitation after 2015 |

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| 14 | Precious stones in Bai Trieu | Nghe An | Chau Binh commune, Quy Chau district 19° 30' 08"; 105° 13' 06" | Surveyed by the Nghe An Gem and Gold Company in 2000 | Class C ₂ : 1,088 kg of corindon (148 kg of precious stones) | Planning on exploration and exploitation in the 2008-2010 period |
| 15 | Precious stones in Pom Lau | Nghe An | Chau Binh commune, Quy Chau district 19° 29' 43"; 105° 12' 50" | Surveyed and zoned off as a potential mining area mapped on a 1:10,000 scale by the Mine Survey and Exploration Company in 2000 | Class C ₂ : 90,250 g; forecast natural resource of class P ₂ : 563,410g | Planning on exploration and exploitation after 2015 |
| 16 | Precious stones in Doi Ty | Nghe An | Chau Binh commune, Quy Chau district 19° 29' 16"; 105° 13' 09" | Surveyed by the Nghe An Gem and Gold Company in 2000 | Mineral spot | Planning on exploitation in the 2008-2010 period |
| 17 | Precious stones in Ban Gie | Nghe An | Chau Binh commune, Quy Chau district 19° 29' 06"; 105° 13' 58" | Surveyed by the Nghe An Gem and Gold Company in 2000 | Class C ₂ : 1,358 kg of corindon (455 kg of precious stones) | Planning on exploration and exploitation in the 2011- 2015 |
| 18 | Precious stones in Ban Ngoc | Nghe An | Chau Hong and Chau Tien communes, Quy Hop district Chau Binh commune, Quy Chau district 19° 24' 45"; 105° 06' 39" | Surveyed and zoned off as a potential mining area on a 1:25,000 scale by the Mine Survey and Exploration Company in 1998 | With traits of minerals. Forecast natural resource: corindon of category B: 5,070 g; categories C+D: 57,640 g | With little potential, not to be considered for planning |

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| 19 | Precious stones in Cha Lim - Dong Xuong | Nghe An | Chau Loc and Dong Hop communes, Quy Hop district 19° 23' 55"; 105° 14' 28" | Founded and assessed by the Mine Survey and Exploration Company in 1997 | Mineral spot. Forecast natural resource of class P ₁ : corindon of categories A+B: 7,570g, categories C+D: 1,366,500g | Planning on exploration and exploitation after 2015 |
| 20 | Precious stones in Dak Ton | Dak Nong | Dak Ton stream, Truong Xuan commune, Dak Song district 12° 07' 30"; 107° 42' 00" | Surveyed by Geological Division 6 (1994), and explored and exploited by the Central Highlands Gem and Gold Company (1996) | C ₁ : 119.53 kg; C ₂ : 303.04 kg; P ₁ : 211.42 kg. Total C ₁ + C ₂ : 422.58 kg | Without a basis and with little potential, not to be considered for planning. The Prime Minister has permitted the salvage extraction |
| 21 | Precious stone mine in Tien Ko | Lam Dong | Lien Dam - Di Linh 108° 00' 18"; 11° 32' 47" | | C ₁ : 254 kg; C ₂ : 0 kg; P ₁ : 21.2 kg. Total C ₁ + C ₂ : 367.86 kg | Without a basis and with little potential, not to be considered for planning |
| 22 | Precious stone mine in Da Ban | Binh Thuan | Hong Liem - Ham Thuan Bac 108° 14' 43" 11° 06' 30" | | C ₁ : 41.3 kg; C ₂ : 14.6 kg; P ₁ : 0 kg. Total C ₁ + C ₂ : 55.81 kg | Without a basis and with little potential, not to be considered for planning |

Appendix 2

LIST OF RARE EARTH MINES AND MINERAL SPOTS AS OF JUNE 30, 2007, AND THE EXPLORATION AND EXPLOITATION PLANNING

| No | Mine, mineral spot | Identification number on map | Geographical location | Survey level | Size and prospects | Development planning |
|----|---|------------------------------|----------------------------|---|--|--|
| | Lai Chau | | | | | |
| 1 | Rare earths - radioactive ores (barite - fluorite) North Nam Xe, Nam Xe commune, Phong Tho district | 19 | 22° 31' 09" - 103° 27' 50" | From 1968 - 1979 Team 151 (Geological Division 10) preliminarily explored rare earth and radioactive ores. In 1993 Intergeo Division surveyed Pb-Zn in detail | A big mineral mine with a total reserve: ΣTR ₂ O ₃ : 7 million tons Pb: 400,000 tons Zn: 51,000 tons CaF ₂ : 1 million tons BaSO ₄ : 1.6 million tons | Not yet considered in the planning period |
| 2 | Rare earths in south Nam Xe, Nam Xe commune, Phong Tho district | 21 | 22° 30' 10" - 103° 28' 19" | Geological Division 10 searched and explored in the 1968-1979 period | A big mine with a reserve of TR ₂ O ₃ of classes B + C = 199,100 tons; P ₁ = 3 million tons | Exploration planning in the 2016-2020 period; industrial exploitation after 2020 |
| 3 | Rare earths in Dong Pao, Ban Hon commune, Phong Tho district | 49 | 22° 16' 54" - 103° 34' 58" | Team 35 explored. Geological Division 10 searched and assessed rare earth barite in Ban Hon; NUTSUTOMO Survey and Exploration Corporation additionally | A mineral mine with an ore reserve: TR ₂ O ₃ of classes C ₁ + C ₂ + P ₁ = 694,800 tons; P ₂ = 9,682,000 tons | Exploration planning in the 2008-2015 period; industrial exploitation from 2010 |

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| | Lao Cai | | | | | |
| 4 | Rare earths in Muong Hum | 47 | 22° 31' 00" - 103° 42' 39" Muong Hum commune, Bat Xat district | The Radioactive and Rare Mineral Geological Division surveyed and assessed in 1983 | A mineral mine with a reserve of class C ₂ : TR ₂ O ₃ = 44,075 tons; ThO ₂ = 3,300 tons and U ₃ O ₈ = 225 tons | Planning on reserve areas |
| | Yen Bai | | | | | |
| 5 | Rare earths in Yen Phu | 49 | Yen Phu commune, Van Yen district 21° 49' 30" - 104° 40' 05" | Team 150 of Division 10 searched and assessed in the 1986-1990 period | A mineral mine with a reserve of classes C ₁ + C ₂ + P ₁ = 17,847 tons of TR ₂ O ₃ , of which class C ₁ : 6,409; C ₂ : 10,438 and P ₁ : 524 tons | Exploration planning in the 2008-2015 period; industrial exploitation in the 2010-2015 period |
| 6 | Rare earth spot in Lang Nheo | | Chau Que Ha - Van Yen 104° 28' 00" 22° 02' 40" | | 747.6 tons | With insufficient conditions for consideration and planning |

Appendix 3

LIST OF URANIUM MINES AND MINERAL SPOTS AS OF JUNE 30, 2007, AND THE EXPLORATION AND EXPLOITATION PLANNING

| No | Mine, mineral spot | Name of province | Geographical location | Survey level | Size and prospects | Development planning |
|----|--|------------------|---|--|---|--|
| 1 | Uranium - thorium in Hang A stream | Son La | 21° 16' 55" - 104° 30' 22" Ta Sua commune, Bac Yen district | Searched in detail by the Radioactive and Rare Mineral Geological Division, Team 153 | An ore and natural resource spot P ₁ : 1,332 tons | Investment and assessment are not suggested at present |
| 2 | Uranium and thorium mine in Muong Hum (intermingled ores in Muong Hum rare earth mine) | Lao Cai | Muong Hum - Bat Xat 103° 42' 10" - 22° 30' 35" | VL.144: search on 1:25,000 and 1:2,000 scales, Le Van To - 1983 | Reserve of U ₃ O ₈ + ThO ₂ : ThO ₂ : C ₂ : 3,569.99 tons P ₁ : 5,996.17 tons U ₃ O ₈ : C ₂ : 204.943 tons P ₁ : 612.44 tons | Not yet considered for planning |
| 3 | Uranium in Suoi Vui | Ha Giang | 23° 03' 41" - 105° 55' 11" Tong Vai commune, Quan Ba district | Preliminarily searched by the Radioactive and Rare Mineral Geological Division | A mineral spot | Investment and assessment are not suggested at present |

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| 4 | Uranium in Binh Duong | Cao Bang | Phan Thanh commune, Binh Nguyen district 22 ⁰ 37' 40" - 106 ⁰ 49' 00" | Preliminarily explored | A mineral spot with a reserve of classes C ₁ + C ₂ + P ₁ = 21 tons of U ₃ O ₈ | Investment and assessment are not suggested at present |
| 5 | Pa Lua uranium mine in Tabhinh commune, Nam Giang district | Quang Nam | 15 ⁰ 40' 35"; 107 ⁰ 40' 58" | Assessed by the Radioactive and Rare Mineral, Geological Division in 1999 | A medium mine with a reserve of classes C ₂ + P ₁ = 5,420 tons of an average concentration of between 0.0194% and 0.1702%. Class C ₂ = 1,160 tons of U ₃ O ₈ , including 886 tons of U ₃ O ₈ with a concentration > 0.6% (grade-I ores) and 272 tons of U ₃ O ₈ with a concentration > 0.04% (grade-II ores). Class P ₁ = 4,260 tons of U ₃ O ₈ | Planning on exploration in the 2008-2015 period and exploitation in the 2016-2020 period |
| 6 | An Diem uranium mine in Ka Dang commune of Dong Giang district; Dai Lanh and Dai Son communes of Dai Loc district | Quang Nam | 15 ⁰ 51' 43"; 107 ⁰ 53' 20" | Found and assessed by the Radioactive and Rare Mineral Geological Division in 2001 | A small mine. Already determined class C ₂ = 418.12 tons for layer 6, 6/3 in Suon Giua area. Classes C ₂ + P ₁ = 2,266.38 tons of U ₃ O ₈ | Uranium ores are scattered with thin ore layers. Investment in further research is not suggested |

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| 7 | Uranium mine in the southeast of Ben Giang, Ca Dy commune of Nam Giang district and Que Phuoc commune of Que Son district | Quang Nam | 15° 40' 00"; 107° 51' 10" | Assessed by the Radioactive and Rare Mineral Geological Division in 2004 | A small mine. Classes C ₂ + P = 1,834.8 tons of U ₃ O ₈ , of which class C ₂ = 397.5 tons and P ₁ = 1,437.3 tons (including 733.1 tons of grade-I ores and 1,101.7 tons of grade-II ores). Class P ₂ = 4,631 tons | Of a poor concentration and small size, not to be considered for planning |
| 8 | Pa Rong uranium mine, Tabhinh commune of Nam Giang district | Quang Nam | 15° 39' 03"; 107° 43' 48" | Assessed by the Radioactive and Rare Mineral Geological Division in 2004 | A small mine. Classes C ₂ + P ₁ = 4,560.8 tons, of which U ₃ O ₈ of class C ₂ = 1,415.4 tons (including 1,398.8 tons of grade-I ores and 16.6 tons of grade-II ores). Class P ₁ = 3,145.4 tons of U ₃ O ₈ (including 2,892.4 tons of grade-I ores and 253 tons of grade-II ores) | Exploration planning in the 2008-2015 period |
| 9 | Khe Cao uranium mine, Dai Hong commune of Dai Loc district | Quang Nam | 15° 47' 30"; 107° 55' 11" | Searched on a 1:10,000 scale by Geological Division 10 in 1995 | A small mine. C ₂ + P ₁ = 6,845 tons of U ₃ O ₈ , of which C ₂ = 1,328 tons; P ₁ = 67,000-70,000 tons of U ₃ O ₈ . | Exploration planning in the 2008-2015 period |

Appendix 4

LIST OF INVESTMENT PROJECTS IN THE 2008 - 2015 PERIOD

| No | Name of project | Scale | Investment capital (VND billion) | Notes |
|----|--|--|----------------------------------|---|
| I | Precious stone projects | | 235 - 320 | |
| 1 | Precious stone exploration and exploitation in Truc Lau | With an annual output of 20 - 50 m ³ of ore earth | 10 - 15 | Exploration has been completed and procedures for exploitation permission are carried out |
| 2 | Precious stone exploration and exploitation in Nuoc Lanh | With an annual output of 20 - 50 m ³ of ore earth | 10 - 15 | |
| 3 | Precious stone exploration and exploitation in Vinh Dong | With an annual output of 20 - 50 m ³ of ore earth | 15 - 20 | |
| 4 | Precious stone exploration and exploitation in Bai Trieu | With an annual output of 20 - 50 m ³ of ore earth | 10 - 15 | |
| 5 | Precious stone exploration and exploitation in Doi Ty | With an annual output of 20 - 50 m ³ of ore earth | 10 - 15 | Exploration has been completed and procedures for exploitation permission are carried out |
| 6 | Precious stone exploration and exploitation in Ban Gie | With an annual output of 20 - 50 m ³ of ore earth | 15 - 20 | |
| 7 | Upgrading of existing processing establishments | Including cutting, abrasion and heat treatment | 15 - 20 | |
| 8 | Investment in two new fashioning establishments (with domestic and foreign investment) | Abrasion of cabochon with an annual output of around 500,000 cts, facet items with an annual output of 150,000 - 200,000 cts | 150 - 200 | |

| | | | | |
|-----|---|---|-------------|--|
| II | Rare earth projects | | 980 - 1,100 | |
| 1 | Exploration of Dong Pao rare earth mine | | 10 | 2008 - 2010 |
| 2 | Rare earth exploitation and processing in Dong Pao (a joint venture with foreign parties) | With an annual output of 200,000 tons of ore earth; 10,000 tons of separate REO | 480 - 500 | |
| 3 | Exploration of Yen Phu rare earth mine | | 10 | 2008 - 2012 |
| 4 | Rare earth exploitation and processing in Yen Phu | To be executed with an output of 3,000-5,000 tons of REO per year as soon as product outlets are found | 400 - 500 | 2008 - 2015 |
| 5 | Processing of materials and purification of rare earths in Viet Hung industrial park, Quang Ninh province | Invested by Integral Materials Investment Co., Ltd., with an output of 1,200 tons of materials per year | 80 | Under construction, expected to commence production in August 2008 |
| III | Uranium projects | | 245 | |
| 1 | Exploration of Pa Lua uranium mine | Reserve of classes 122 and 121 is determined at 4,000 tons of U_3O_8 | 70 | |
| 2 | Exploration of Pa Rong uranium mine | Reserve of classes 122 and 121 is determined at 4,000 tons of U_3O_8 | 75 | |
| 3 | Exploration of Khe Cao uranium mine and its vicinity | Reserve of classes 122 and 121 is determined at 6,000 tons of U_3O_8 | 100 | |

Appendix 5

LIST OF INVESTMENT PROJECTS IN THE 2016 - 2025 PERIOD

| No | Name of project | Scale | Investment capital (VND billion) | Notes |
|----|--|---|----------------------------------|-------|
| I | Precious stone projects | | 305 - 435 | |
| 1 | Precious stone exploration and exploitation in Ban Khum - Ban Ken | With an annual output of 50 - 70 m ³ of ore earth | 25 - 30 | |
| 2 | Precious stone exploration and exploitation in Pom Lau | With an annual output of 30 - 50 m ³ of ore earth | 20 - 25 | |
| 3 | Precious stone exploration and exploitation in Cha Lim - Dong Xuong | With an annual output of 100 - 150 m ³ of ore earth | 30 - 40 | |
| 4 | Precious stone and jade exploration and exploitation in Co Phuong (Son La) | With an annual output of 100 - 150 m ³ of ore earth | 30 - 40 | |
| 5 | Investment in increasing capacity of existing fashioning and processing establishments | Abrasion of cabochon with an annual output of 1 - 1.5 million cts, faset items with an annual output of 400,000 - 500,000 cts | 200 - 300 | |
| II | Rare earth projects | | 1,465 - 1,865 | |
| 1 | Exploration of South Nam Xe rare earth mine | | 15 | |

| | | | | |
|-----|--|---|-----------|--------------------------------------|
| 2 | Expansion and raising of rare earth exploitation and processing capacity of Dong Pao mine (a joint venture with foreign parties) | With an annual output of 400,000 tons of ore earth 12,000 - 14,000 tons of separate REO | 350 - 400 | A joint venture with foreign parties |
| 3 | Expansion and raising of rare earth exploitation and processing capacity of Yen Phu mine | To increase its annual output to 6,000 - 10,000 tons of REO as soon as product outlets are found | 200 - 250 | A joint venture with foreign parties |
| 4 | Rare earth exploitation and processing in Nam Xe | To be executed with an output of 5,000-10,000 tons of REO per year as soon as product outlets are found | 400 - 500 | A joint venture with foreign parties |
| 5 | Plants producing rare earth metals and rare earth-applied products, such as permanent magnets, abrasive powder, active ingredients, rare earth ferro-chemicals | If investors and product outlets are found | 500 - 700 | Call for investment |
| III | Uranium projects | | 100 | |
| 1 | Exploitation and preliminary processing in Pa Lua or Pa Rong uranium mine | With an annual output of 50,000 - 100,000 tons of crude ores | | 2015 - 2020 |
| 2 | Exploration of some other mines with prospects after survey and search in the previous period | | 100 | |