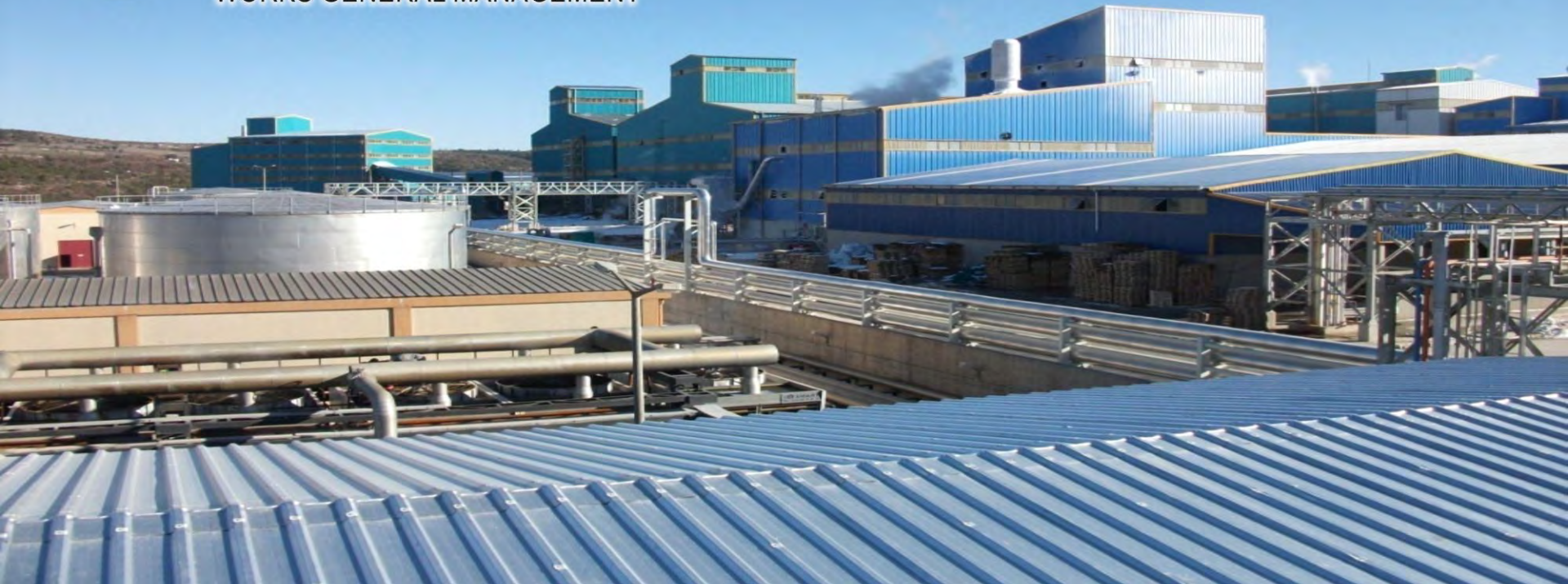


ETİ MINE and POTENTIAL INVESTMENTS in TURKEY



ETİ MINE
WORKS GENERAL MANAGEMENT



March 4, 2013 PDAC 2013, Canada

Recep AKGÜNDÜZ, MSc.,
Deputy General Manager

World Boron Minerals Reserves



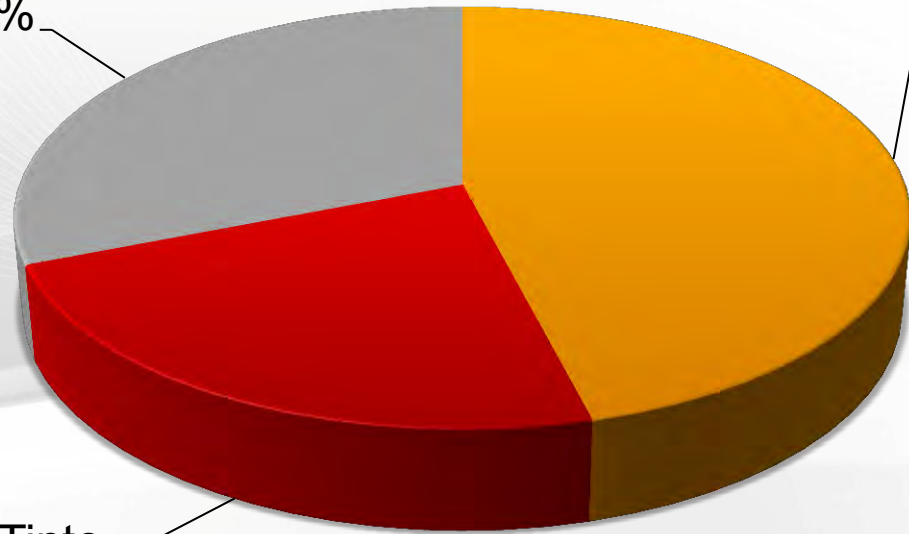
World Boron Market Shares, 2011

- Russia
- China
- South America

Others
31%

Eti Mine
46%

Rio Tinto
23%



Boron Products & Production Sites of Eti Mine



BANDIRMA BORON WORKS

- Borax Decahydrate
- Borax Pentahydrate
- Boric Acid
- Boron Oxide
- Etidot-67 (Agri Boron)
- Sodium Perborate



EMET BORON WORKS

- Boric Acid
- Concentrated Colemanite



KIRKA BORON WORKS

- Etibor-48 (Borax Pentahydrate)
- Etibor-68 (Anhydrous borax)
- Calcined Tincal (Compacted)

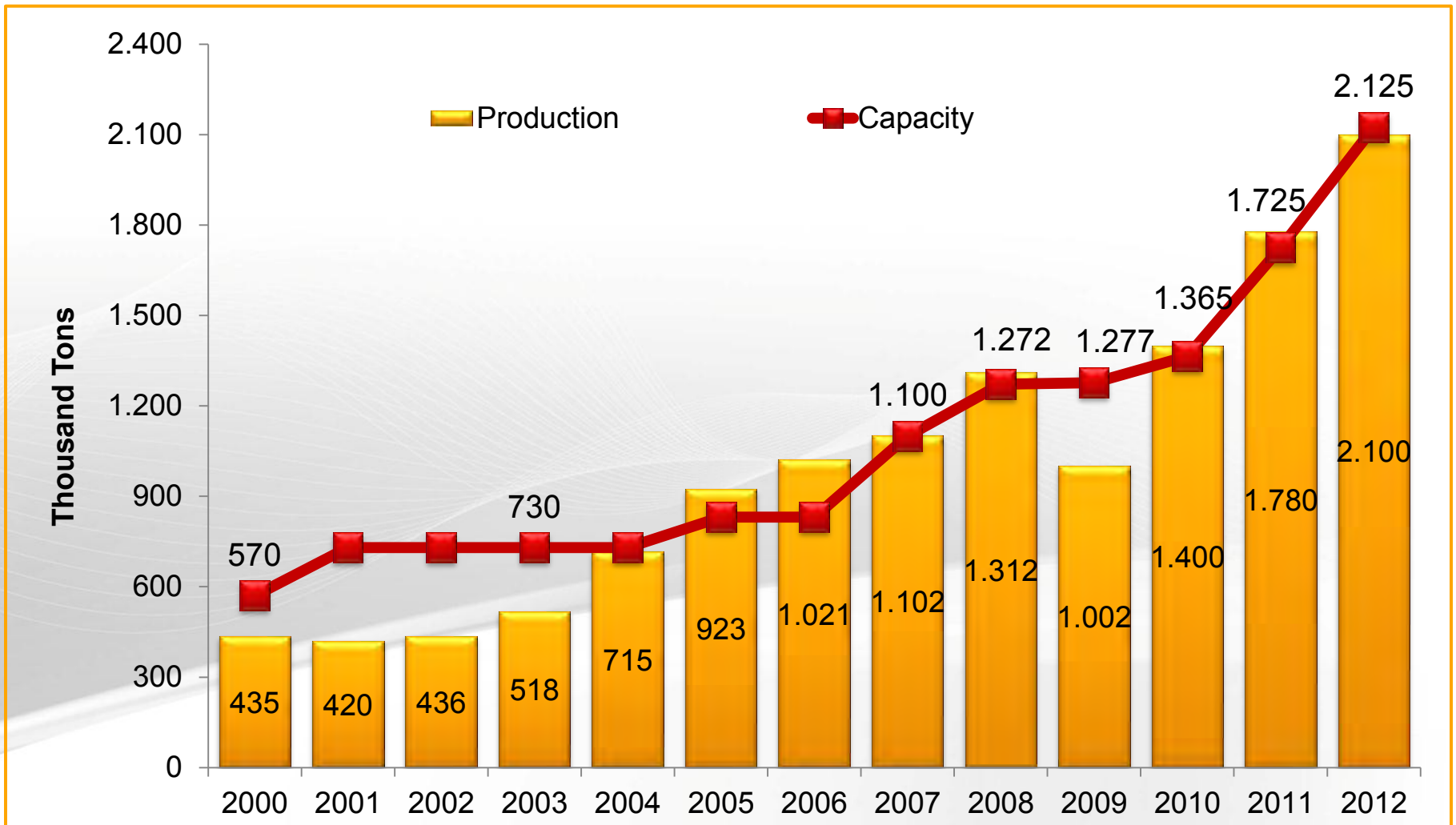


BİGADIÇ BORON WORKS

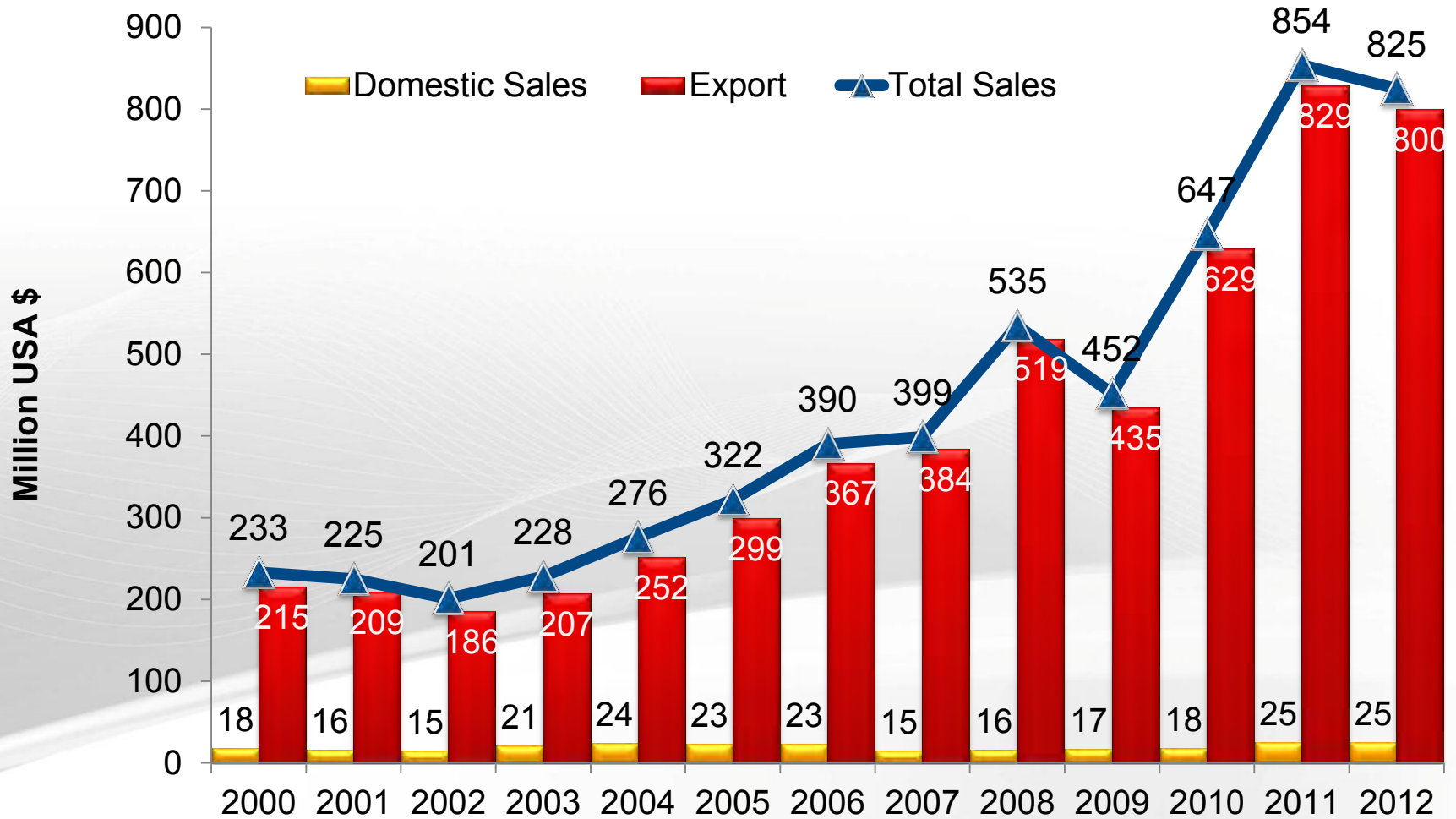
- Ground Colemanite / Ulexite
- Concentrated Colemanite / Tincal / Ulexite
- Natural Zeolite



Eti Mine in Figures; Production & Capacity of Boron Chemicals



Eti Mine in Figures; Sales



Consumption of Boron Products in the World & Change in Eti Mine's Market Share

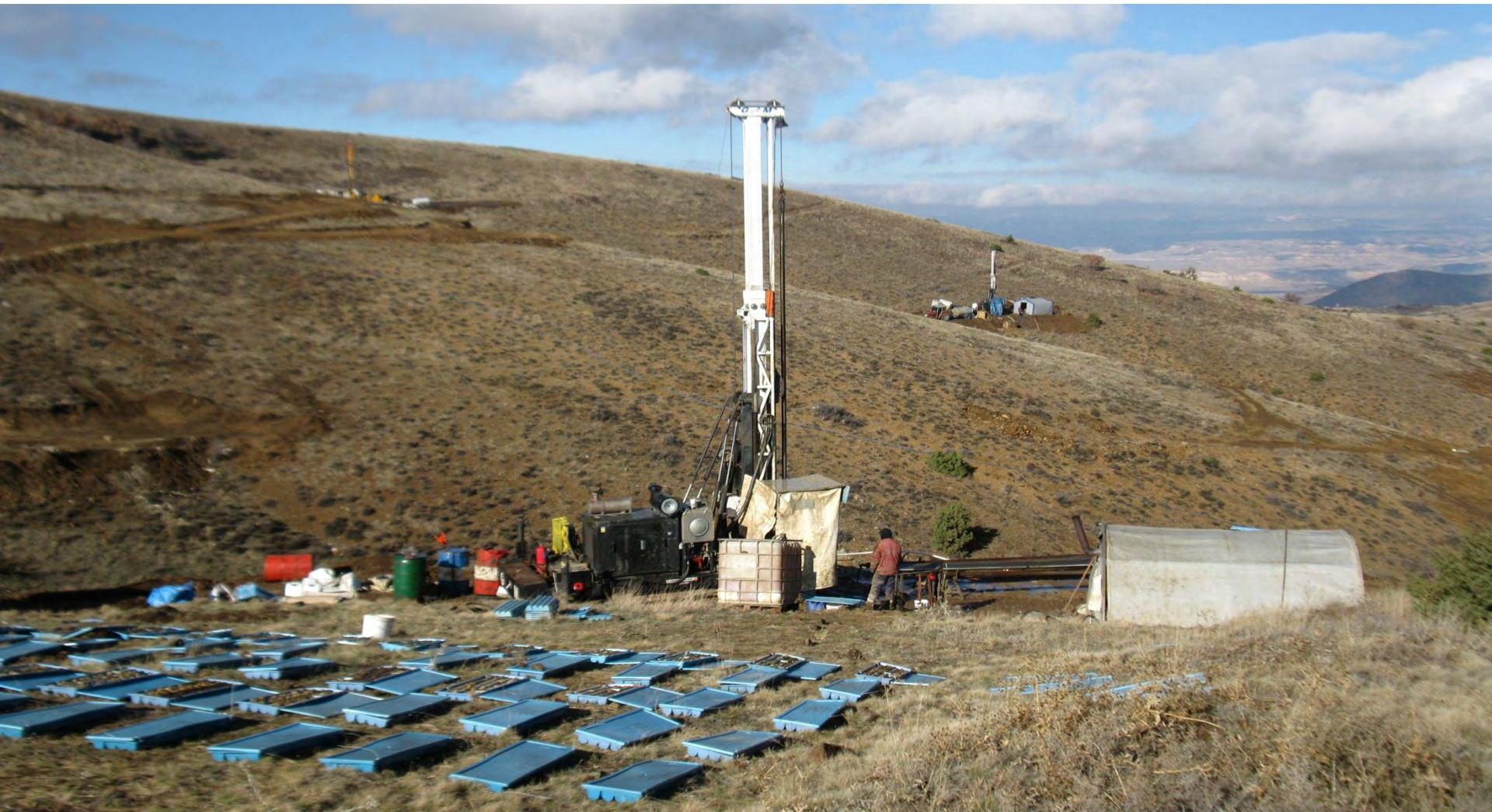
Consumption of Boron Products in the World (Million Tonnes)



Change in Eti Mine's Market Share



RARE EARTH OXIDES IN TURKEY

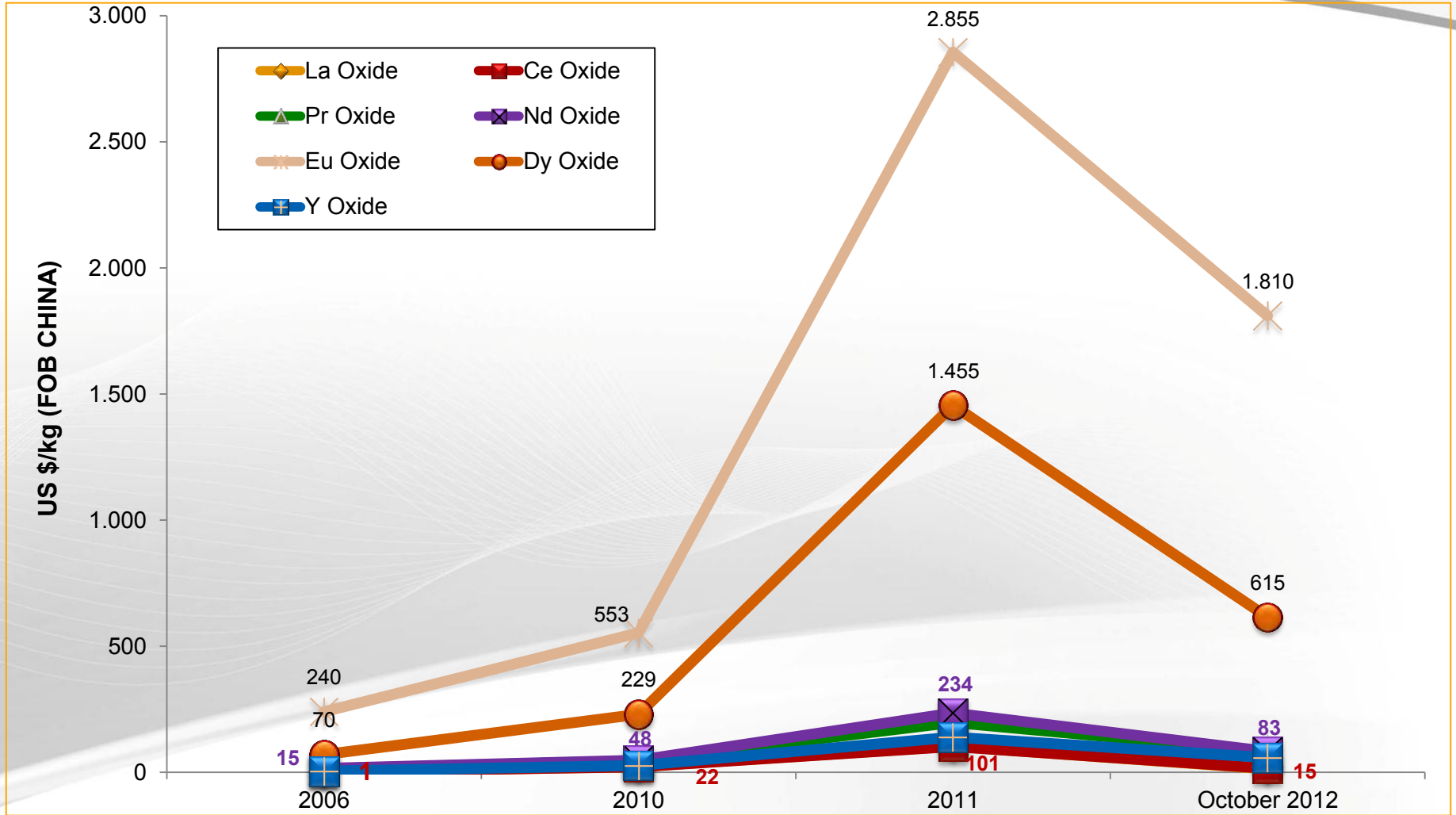


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Historical and Current Prices of Rare Earth Oxides



Source: Greenfields Research Ltd



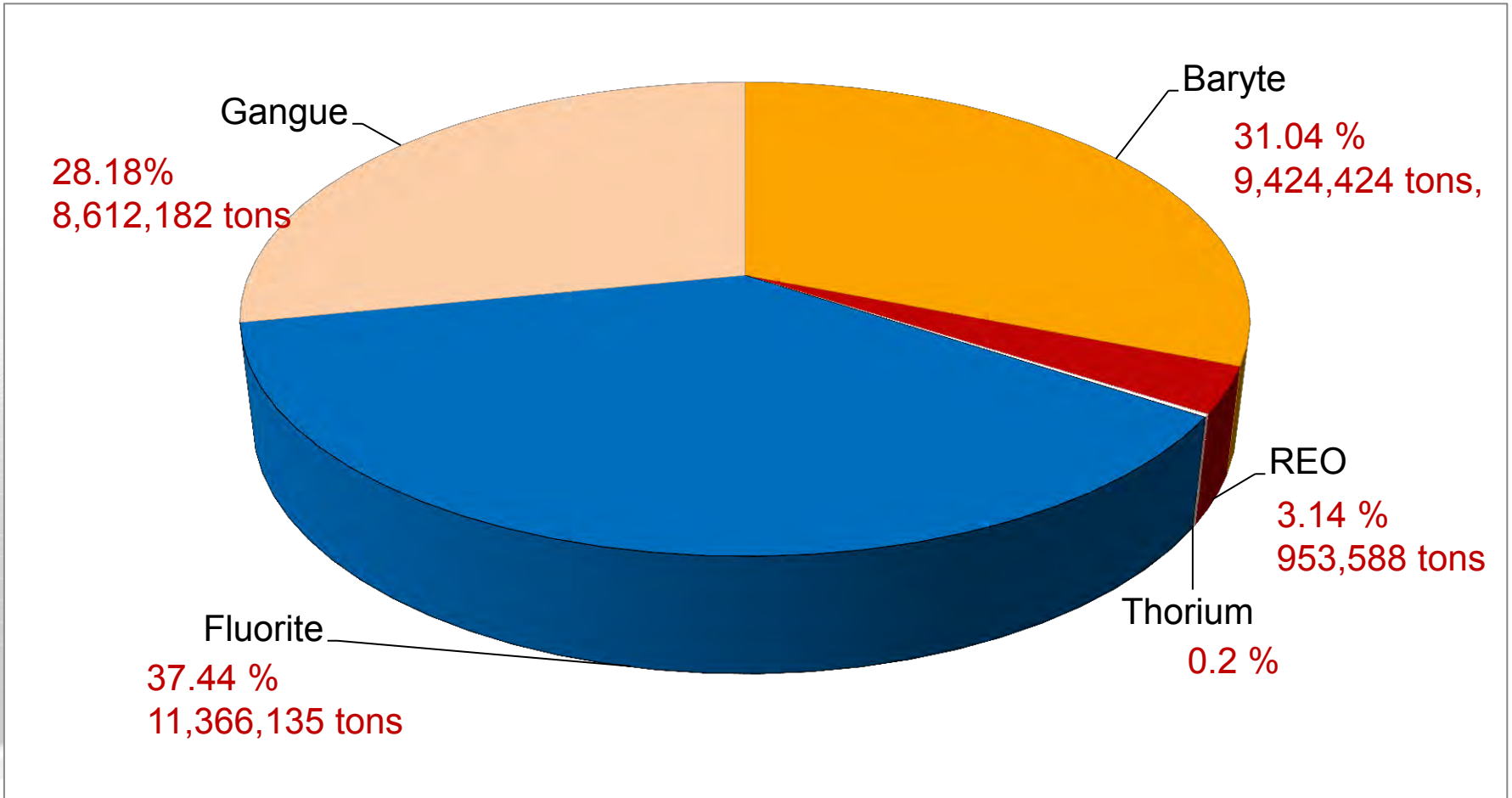
Rare Earth Oxides in Turkey

	Reserve (tons)	Grade (%)	Ore type
Kızılcaören, Eskişehir ¹	30,568,268 (proved and probable)	3.14	Bastnazite, Fluorite, Baryte, Thorium
Çanaklı, Burdur ³	49,000,000 (proved) 238 - 340,000,000 (potential)		Allanite (29% REO), Chevkinite (41 % REO, 20 %TiO ₂ , 2.5% ThO ₂) Sphene (19% REO, 34% TiO ₂)

Source: 1. Eti Mine 2.AMR MINERAL METAL INC.



Mineral Distribution of the Resource, Sivrihisar (by Percentage)

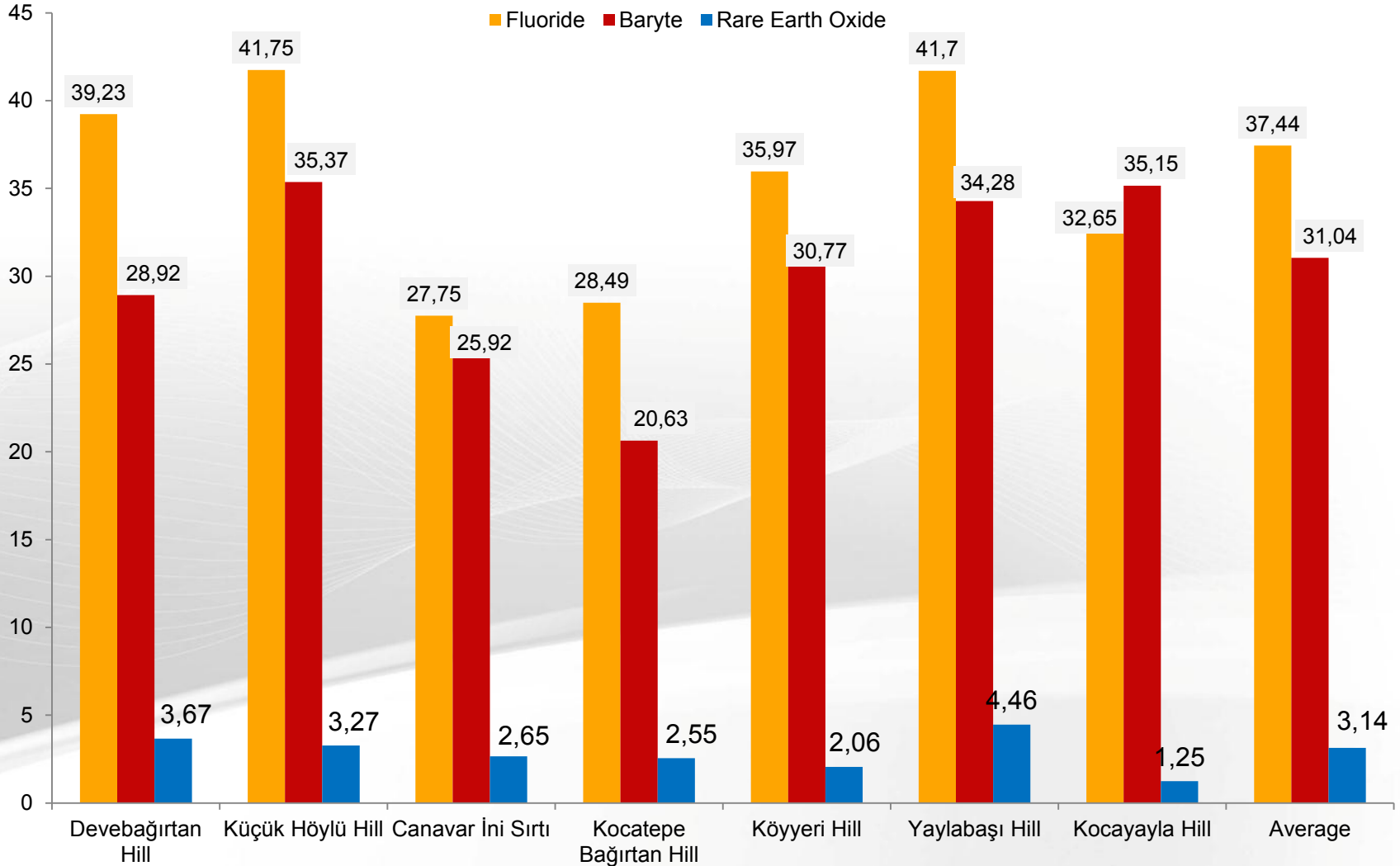


Source: Report, Hüseyin Kaplan, MTA, 1977 & Report, İsrail Kayabalı, MTA, 1986.



Sivrihisar Tenor Distribution

Average Tenor, %



ETI MINE'S OPERATION PLAN OF RARE EARTH OXIDES

TENDER

- Performed in December 5, 2012.

Planned Production According to Feasibility Study

- 10,000 tons/year Rare earth oxides
- 72,000 tons/year Baryte
- 70,000 tons Fluoride
- 250 tons/year Thorium

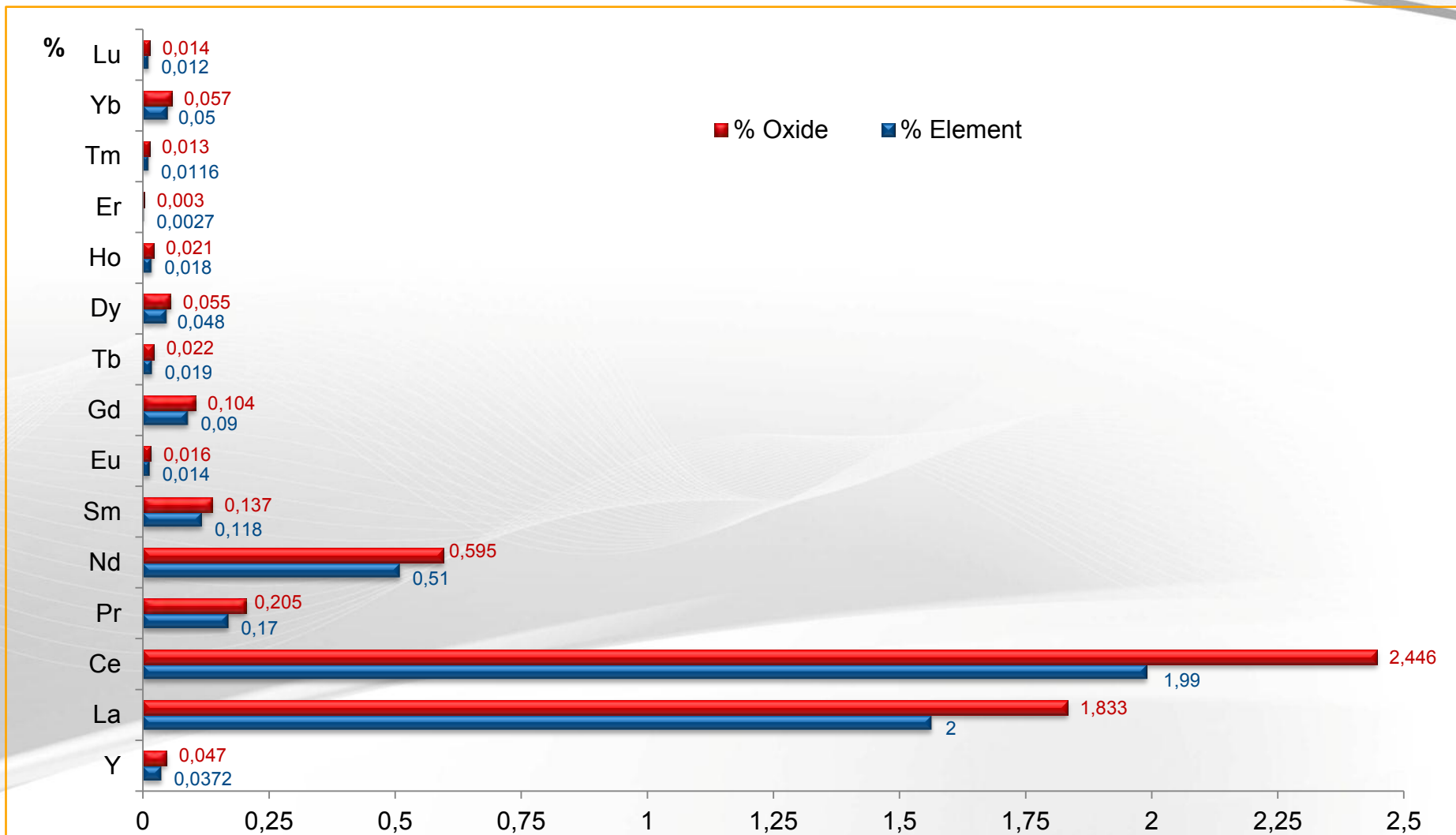
FINAL SITUATION

- Competent companies given 9 months to prepare technical specification.

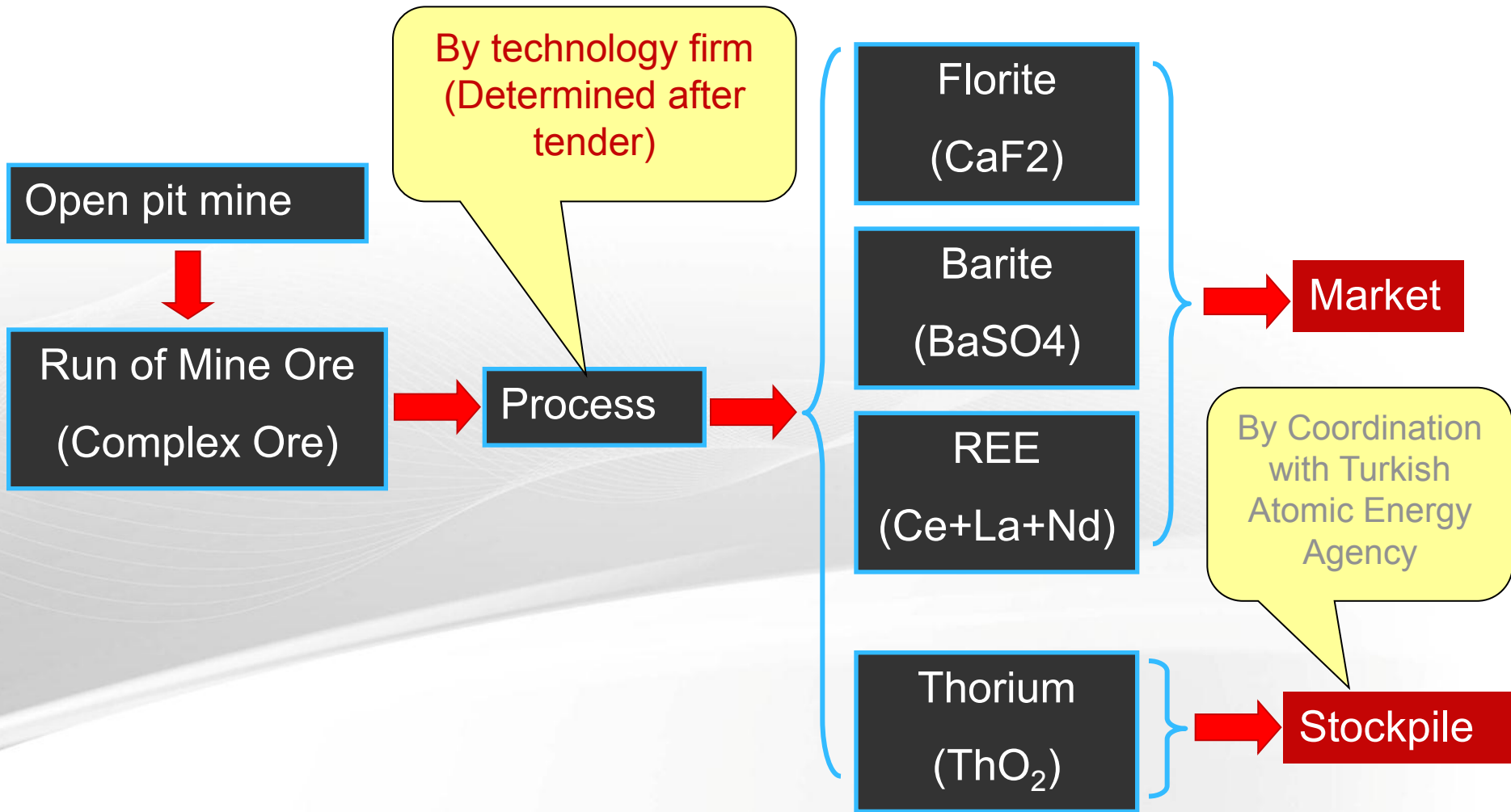
Source: Greenfields Research Ltd



Rare Earth Oxide Composition of Samples



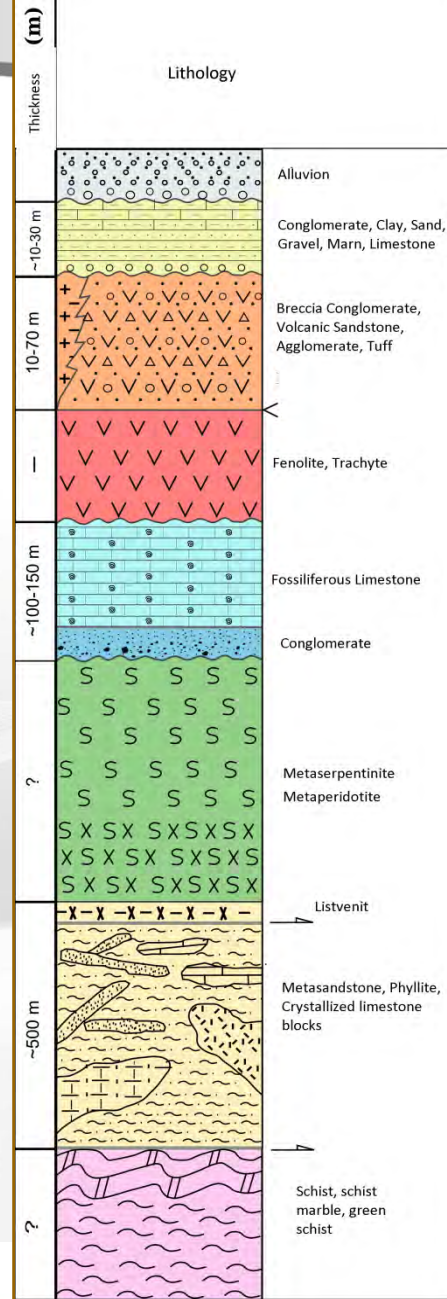
Operating Model of the Mine



Location of REE Site

Eskişehir,
Sivrihisar

Vertical Section of Complex Ore
Zone of Kızılcaören



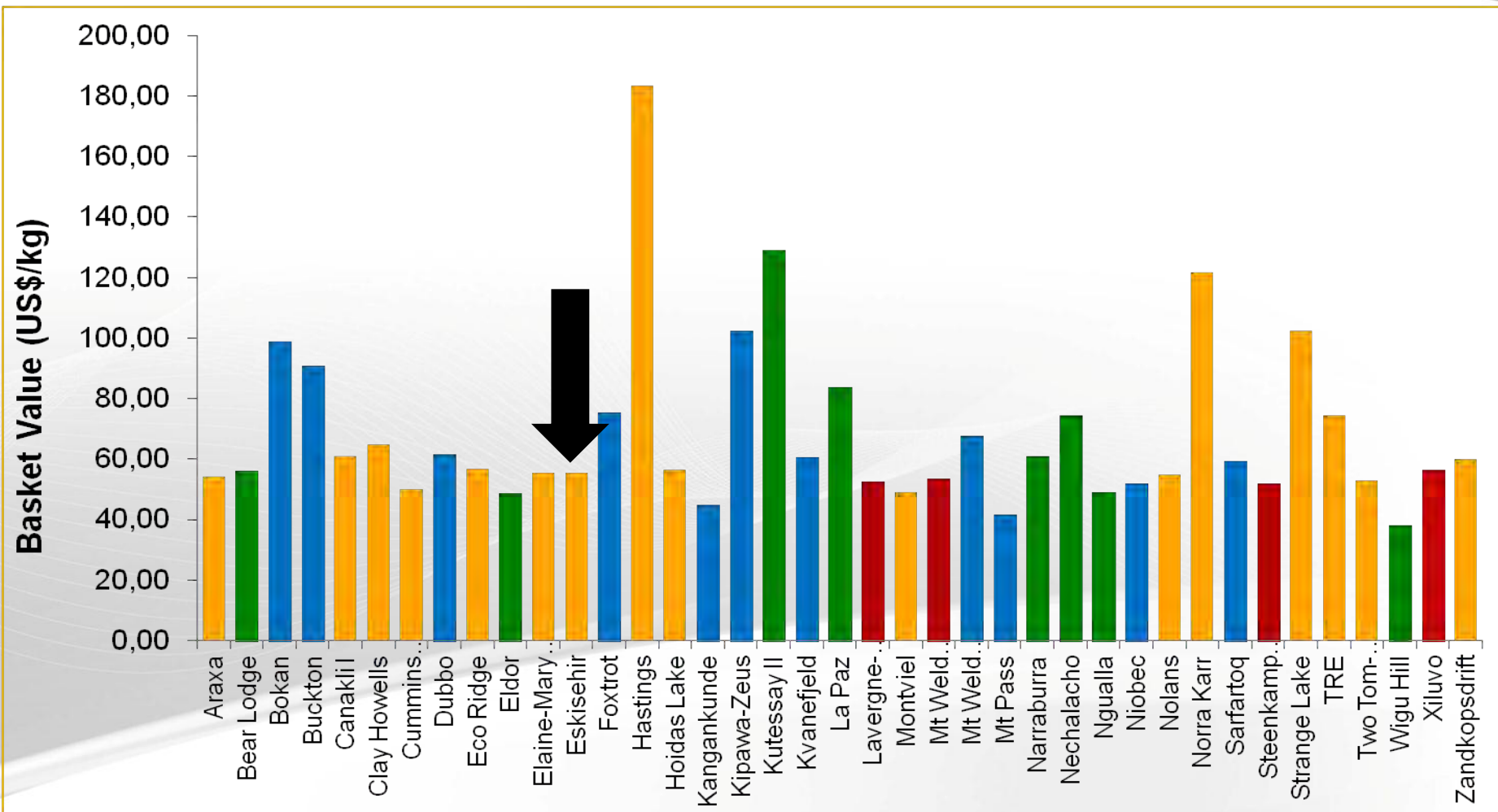
Resource Development Project Sivrihisar-Turkey



- In 2011 resource exploration studies have been restarted.
- Up to date explorations were made down to 200 m. depth.
- Two 500 m. deep drills showed that at deeper levels also might be resources both in terms of REE and Th.
- A master resource development project has been programmed for 2014-2017.



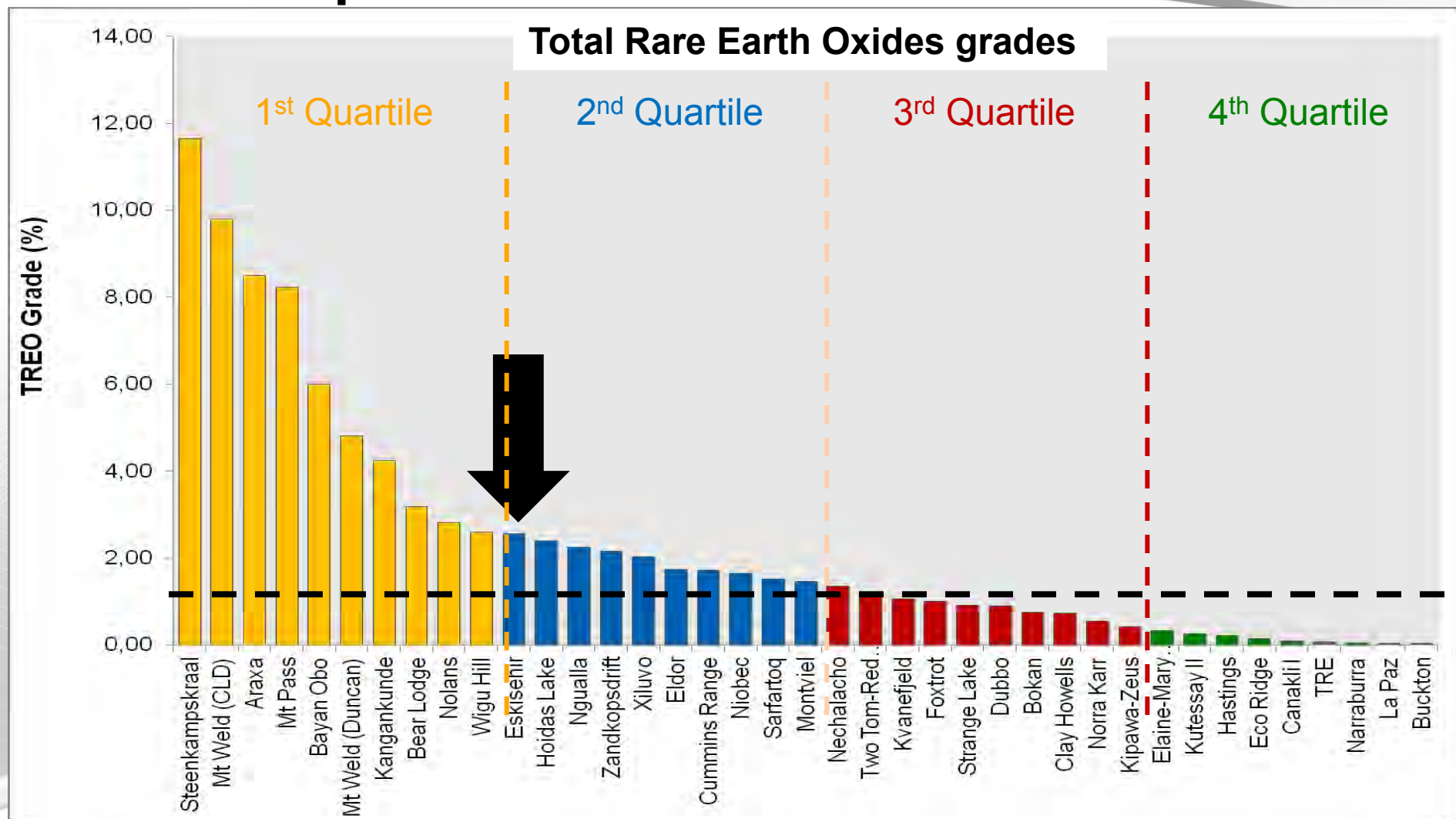
Typical “Basket Values” of REO Mines



Source: Greenfields Research Ltd



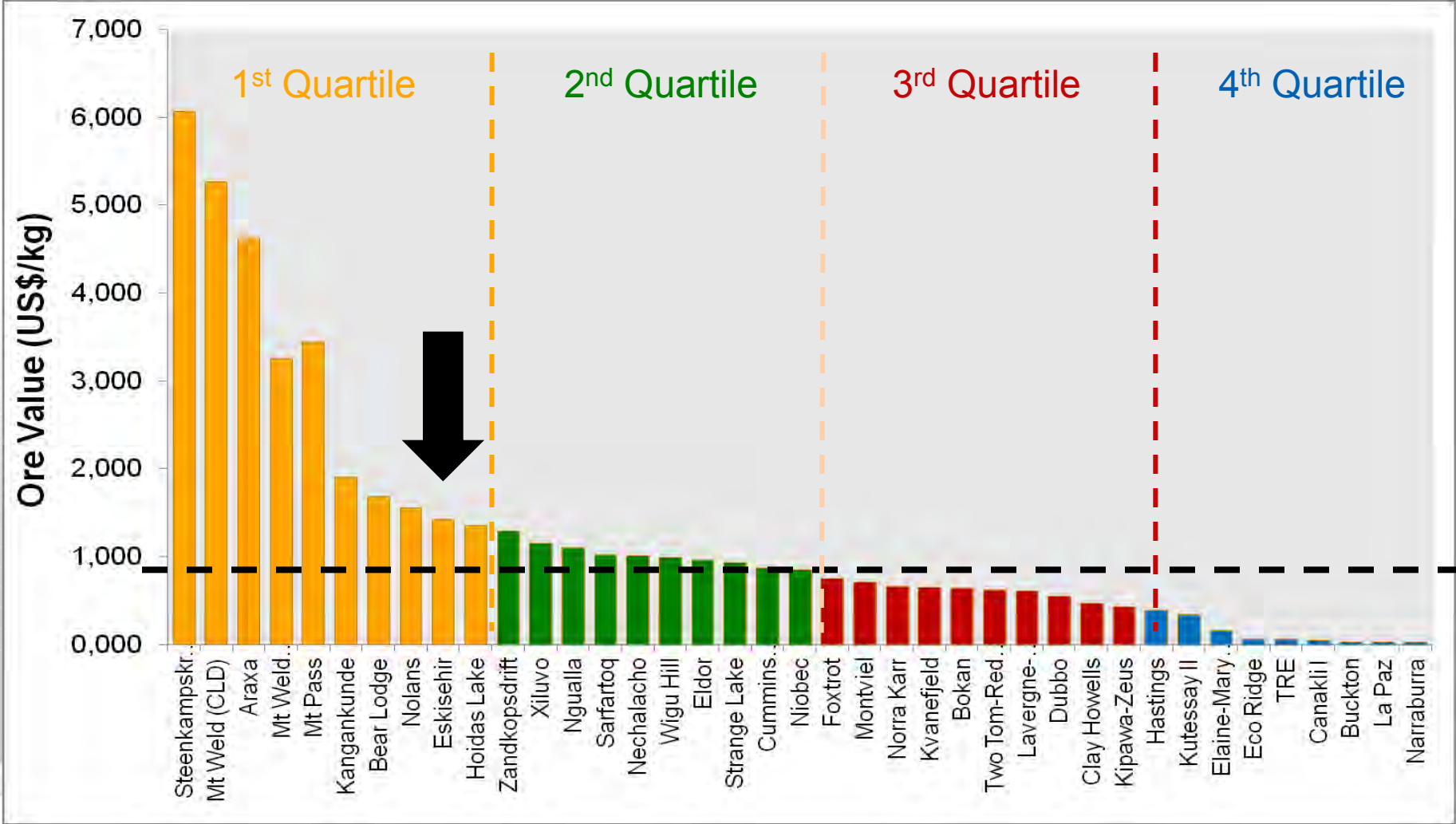
Global Comparison of Grades



Source: Greenfields Research Ltd



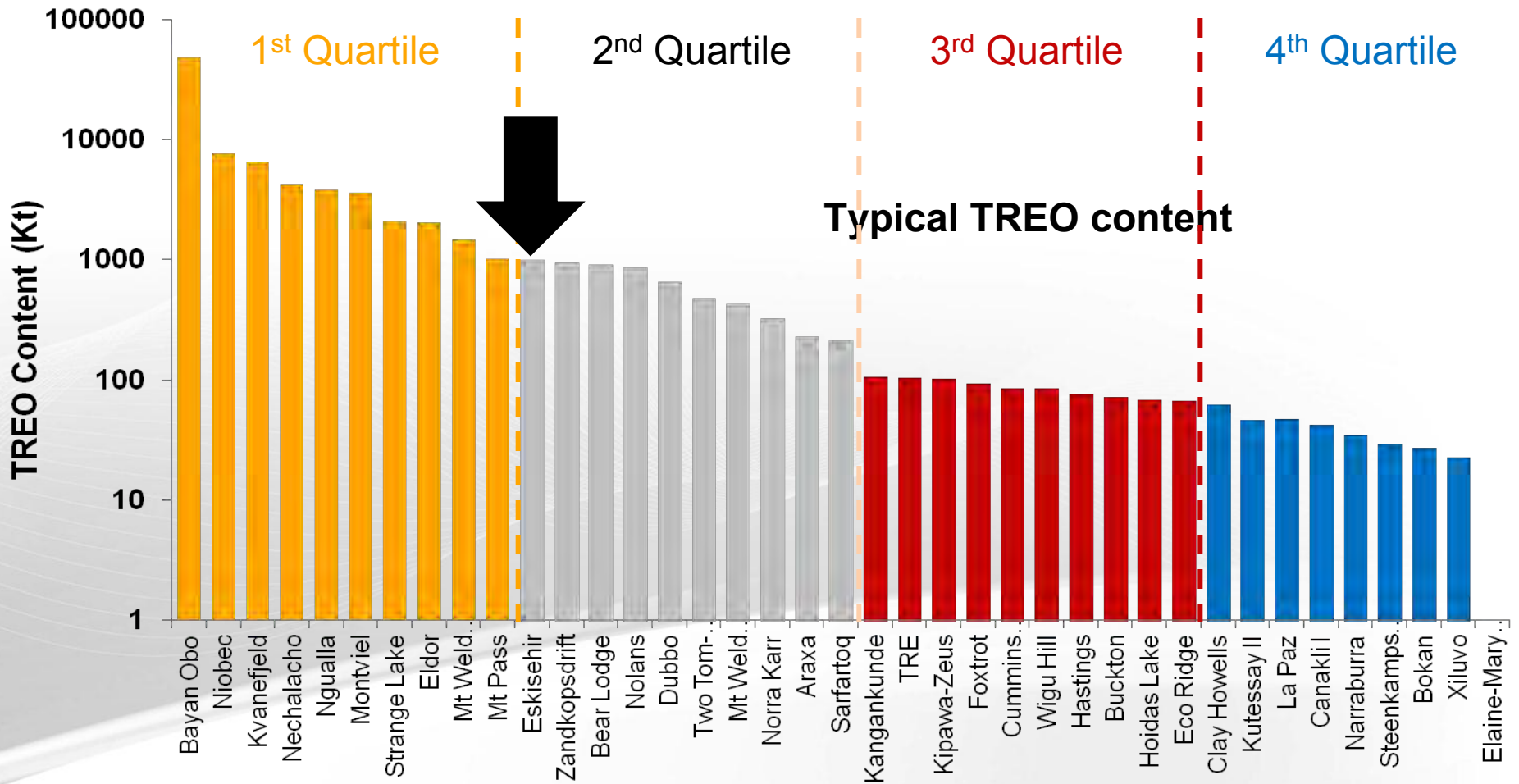
Global comparison of ore values, TREO ore values



Source: Greenfields Research Ltd; Data: Company websites



Global Comparison of Resource Size



Source: Greenfields Research Ltd; Data: Company websites



ETİ MINE'S URANIUM SITES AND ACTIVITIES



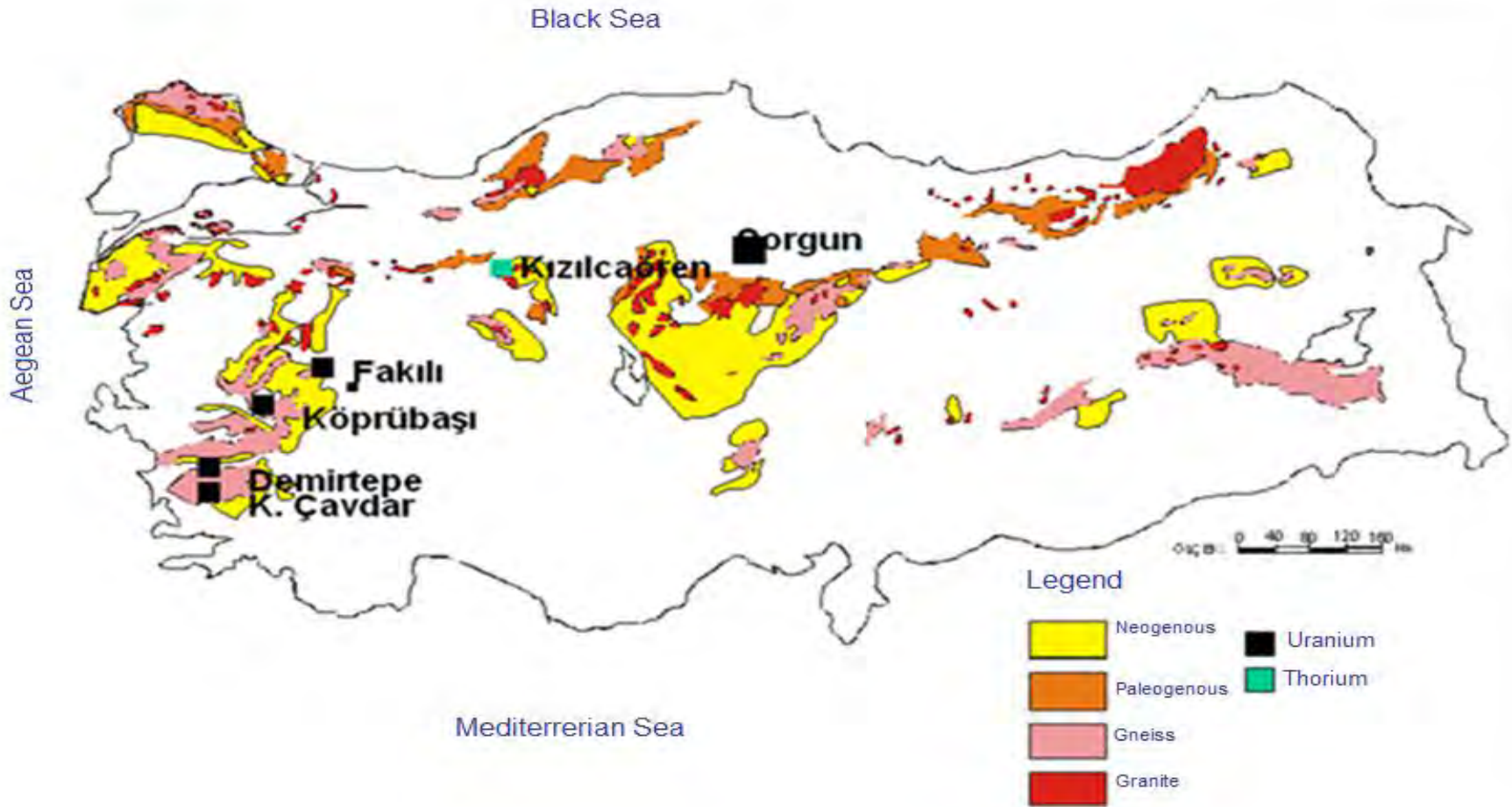
Köprübaşı/MANİSA

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Uranium Areas in Turkey



Data on Uranium Reserves Licensed to Eti Mine

Province			Area	Reserve	Grade
City	Town	Village	(hectares)	(Ton U ₃ O ₈)	(U ₃ O ₈ %)
AYDIN	SÖKE	Çavdar	2.164,18	1.935	0,123
AYDIN	KOÇARLI	-	1.129,00	500	0,050
MANİSA	GÖRDES	Köprübaşı	3.113,86	1970	0,236
MANİSA	GÖRDES	Tomaşa	1.489,32	885	0,089
UŞAK	EŞME	Fakılı	1.778,76	489	0,044
TOTAL			9.675,12	5.780	

Gold Field Information of Eti Mine



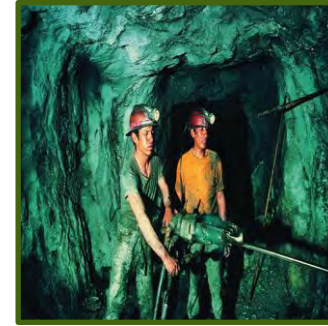
AMOUNT OF RESERVE

Proved (Ton):519,285

Probable (Ton):1,280,595

Possible (Ton):1,753,714

TOTAL:3,553,594 ton



AVERAGE TENOR

Proved (ppb):1,641

Probable (ppb):1,562

Possible (ppb):1,526

TOTAL:1,556 ppb



KEPSUT, BEYKÖY, BALIKESİR



Kepsut-Beyköy Area Information

Total Reserve

- 3,553,594 tons (proved, probable and possible) containing 1.556 gr/ton Au
- → **5.5 ton Metallic Gold**

Operational Efficiency

- For open plants:90-95% For closed plants:75-85%
- Average drilling depth: 270 m

Operating Life

- 5 Years

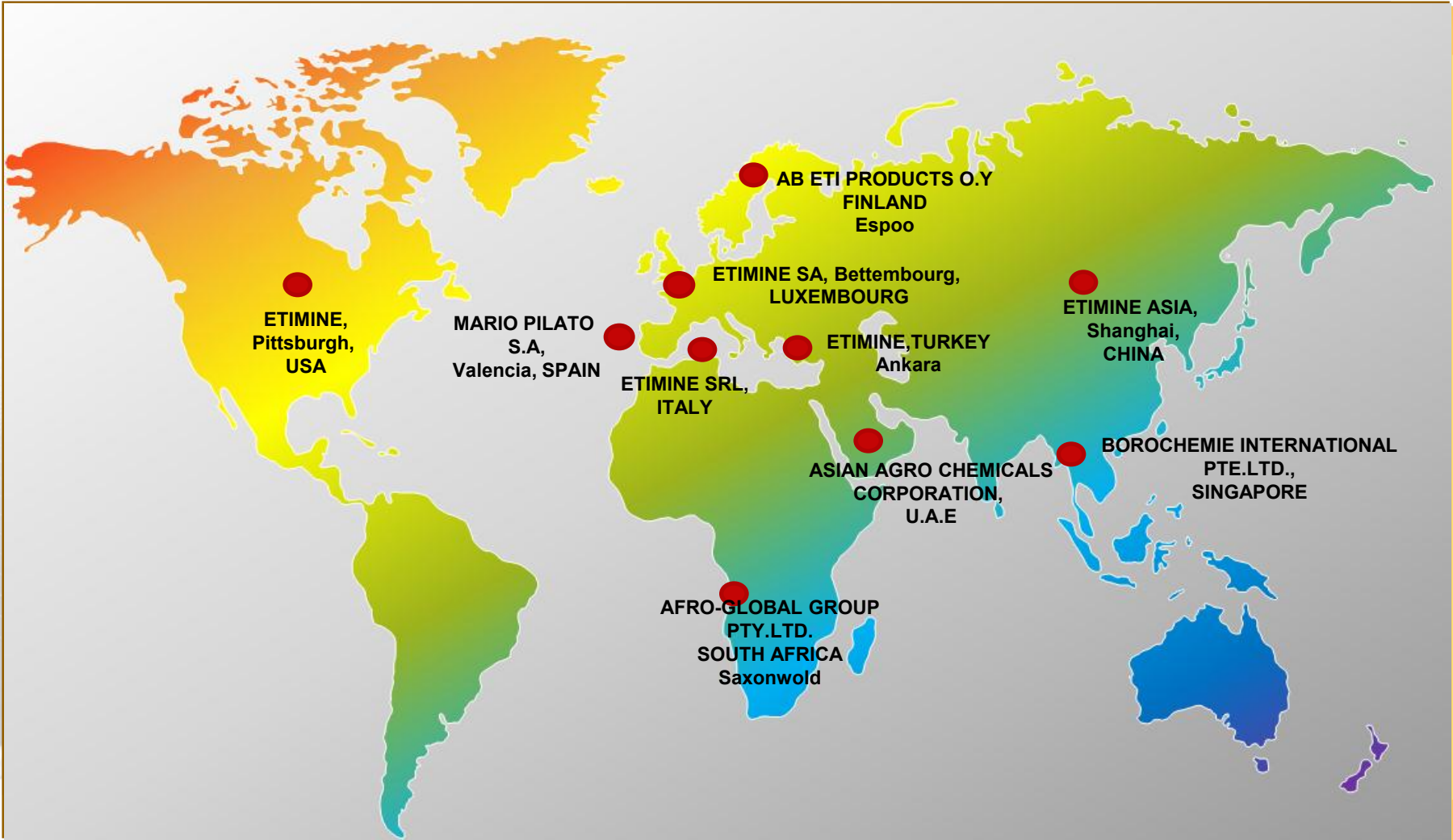


OTHER INVESTMENT OPPORTUNITIES IN TURKEY

- the production of the high value added boron specialties,
 - ceramic,
 - insulating glass + textile fiberglass,
 - TFT-LCD Substrate Glasswhich promise an important growth potential.



Contact



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Sivrihisar Reserve

	Density (gr/cm ³)	Volume of Ore Zone (m ³)	Reserve (tons)	Fluoride		Baryte		Rare Earth Oxides	
				Average Tenor, %	Reserve (tons)	Average Tenor, %	Reserve (tons)	Average Tenor, %	Reserve (tons)
Devebağırta Hill	3.64	1,799,833	6,554,351	39.23	2,571,352	28.92	1,895,990	3.67	240,464
Küçük Höylü Hill	3.68	3,797,185	13,973,640	41.75	5,835,210	35.37	4,942,598	3.27	457,036
Canavar İni Sırtı	3.72	1,325,146	4,929,543	27.75	1,368,243	25.92	1,277,997	2.65	130,619
Kocatepe Bağırta Hill	3.16	799,880	2,527,620	28.49	720,228	20.63	521,497	2.55	64,437
Köyveri Hill	4.00	236,624	946,496	35.97	340,496	30.77	291,282	2.06	19,520
Yaylabaşı Hill	3.47	212,374	736,937	41.70	307,334	34.28	252,637	4.46	32,895
Kocayayla Hill	3.86	178,674	689,681	32.65	225,212	35.15	242,423	1.25	8,617
Total	3.64	8,349,716	30,358,268	37.44	11,368,075	31.04	9,424,424	3.14	953,588

