

Supplementary material of the paper: Applying the United Nations Framework Classification for Resources for a National Raw Materials Inventory in Italy

Contents

Supplementary Information for Figure 6	2
Template for the application of UNFC to projects for the Italian Raw Materials Inventory	2
Example 1: The Gorno Project	3
Example 2: Silius Mine	4
Authorized Projects in Italy.....	6
Production Data	11
Historic data	13
Raw Materials Data Classification.....	14
Supplementary Note on the adopted methodology	17
Sources	18

Supplementary Information for Figure 6

Figure 6 illustrates the built Italian national raw materials inventory based on UNFC. It was developed as a result of gathering raw materials projects information from 3 main datasets, which are those highlighted in the methodology section of the paper (a: Authorized raw materials projects and production data; b: Historical data and legacy records; c: Extrapolated data from geological occurrences). The compilation of these datasets and tables were carried out following the template for the application of UNFC to Italian projects, for the purpose of the proposed national raw materials inventory. The template and a two project examples are appended to the supplementary information.

Template for the application of UNFC to projects for the Italian Raw Materials Inventory

Project Name	
Project Location	
Project Type	
Development Phase	
Commodity(ies)	
Date of Classification	

E axis Classification - Environmental-Socio- Economic Viability	Category and Sub-category:
	Justification: <i>If available: Legal, Economic, Environmental, Social, Governance, etc.</i>
F axis Classification - Technical Feasibility	Category and Sub-category:
	Justification: <i>If available: Project development phase, Activity status, Technology, Infrastructure, etc.</i>
G axis Classification – Degree of Confidence	Category:
	Justification: <i>Indicate the data source, documentation of resource/reserve estimation (if available), and degree of geological investigation</i>
UNFC Classification of the Project	UNFC Code:
	UNFC Class and Sub-class:

	Justification:
Sources and additional information	

Example 1: The Gorno Project

Project Name	Gorno (Appian Natural Rsrc Fund II LP, Altamin Ltd. (Vedra Metals Srl))
Project Location	Oltre il Cole, Lombardy Region, Italy
Project Type	Exploration
Development Phase	Scoping Study
Commodity(ies)	Zn, Pb, Ag
Date of Classification	30/06/2024

E axis Classification - Environmental-Socio-Economic Viability	Category and Sub-category: E2
	Justification: Gorno operates under a permit (valid until July 2025) and is progressing toward a mining license through full regulatory compliance with Italian law. A Scoping Study confirms strong economic potential (\$211M Post-Tax NPV, 50% IRR, 2.5-year payback). The project features an underground design with minimal surface impact, full tailings backfill, and limestone reuse in the circular economy. Active engagement with local communities and job creation. Governance is grounded in responsible mining and sustainable social and environmental practices.
F axis Classification - Technical Feasibility	Category and Sub-category: F2.1
	Justification: At scoping study, progressing with exploration, well-connected by transport and industrial infrastructure. Historical production and recent test-work confirm simple metallurgy and processing, supporting the development of a long-term supply of clean, high-grade zinc and lead concentrates. Plans to implement smart mining and processing technologies to enhance efficiency, reduce environmental impact, and ensure safety. Advanced exploration and remote sensing techniques are being used to optimize resource identification and extraction
G axis Classification – Degree of Confidence	Category: G2 for indicated resources and G3 for inferred
	Justification: This project pertains to the authorized raw materials projects data type. Gorno is underlain by a rich Alpine Mississippi Valley Type (MVT) style geological formation that hosts significant primary mineralisation that includes zinc sulphides such as sphalerite, as well as associated lead and, silver. Extensive exploration drilling and geological studies since 2015 has confirmed a JORC-compliant Mineral Resource estimate, with the corresponding G axis categories: Indicated Resources: 375 kt @ 6.6% Zn, 98kt @ 1.7% Pb, and 33g/t Ag -> G2

	Inferred Resources: 153 kt @ 7.2% Zn, 39kt @ 1.8% Pb, and 31g/t Ag -> G3
UNFC Classification of the Project	UNFC Code: E2; F2.1; G2+G3
	UNFC Class and Sub-class: Potentially Viable, Development Pending
	Justification: Based on the justifications provided for each category separately, the project is potentially viable.
Sources and additional information	1. https://www.altamin.com.au/gorno 2. https://www.mimit.gov.it/images/stories/documenti/allegati/Presentazione_dott_Marcello_De_Angelis_Energia_Minerals_e_Altamin_10-11-2022.pdf 3. https://www.capitaliq.spglobal.com/web/login?target=dashboard

Example 2: Silius Mine

Project Name	Silius (MINERARIA GERREI SRL (LLC))
Project Location	Silius, about 50 km from Cagliari
Project Type	Extraction
Development Phase	Mining Concession
Commodity(ies)	Fluospar
Date of Classification	06/05/2024
E axis Classification - Environmental-Socio-Economic Viability	Category and Sub-category: E1.1
	Justification: Fully permitted, mining concession and all necessary approvals, including EIA, and is currently in the construction phase with production expected in 2025. Financially, the project is fully funded with €44 million secured. Compliance with local environmental regulations, monitoring air quality, noise, vibrations, soil, water, and energy use. The project is well-accepted by the community, creating up to 100 jobs. Governance is based on full compliance with national and international standards and regulations.
F axis Classification - Technical Feasibility	Category and Sub-category: F1.2
	Justification: The project is in the construction development phase, with mine infrastructure and a beneficiation plant nearing completion. Supported by strong infrastructure. Facilities will be located near the shaft at 630 meters altitude to optimize operations. Energy-efficient buildings will be built on the existing logistics yard, designed for rooftop solar panels. The site layout includes a main flotation facility, a water treatment and

	sludge management unit, and adaptable storage sheds. Excavation is minimal, with no expected groundwater impact, and surplus material will be reused.
G axis Classification – Degree of Confidence	Category: G2
	Justification: This project pertains to producing/near production projects data type. The Project indicates 2.2 million tonnes of certified fluorspar. Mineraria Gerrei projects an estimated annual production of 70 thousand tonnes of 97.5% fluorspar, and an additional 6,800 tonnes of galena from the site. However, these figures are only declared by the operator. They are not supported by well documented resource/reserve estimation, neither compliant with international standards.
UNFC Classification of the Project	UNFC Code: E1.1; F1.2; G2
	UNFC Class and Sub-class: Viable, Approved for Development
	Justification: Based on the justifications provided for each category separately, the project is viable.
Sources and additional information	1. "Mondillo N. et al., Evaluation of the amount of rare earth elements -REE in the Silius fluorite vein system (SE Sardinia, Italy)" 2. https://portal.sardegna.sira.it/-/concessione-mineraria-per-la-riattivazione-della-miniera-genna-tres-montis-comune-di-s-basilio-e-silius-v-3 3. https://www.minerariagerrei.com/it/

Authorized Projects in Italy

Property	Owner(s)	Development Stage	Activity Status	Main Commodity	Commodity (ies)	Reserves (t)	Resource (t)	Grade (%)	Classification Method	Category	Total (t)	Date	UN FC Code	UNFC Class	source				
Gorno	Appian Natural Rsrc Fund II LP, Altamin Ltd.	Scoping Study	Active	Zinc	Zinc		375,000	6.6	JORC	Indicated	528,000	30/06/2024	222	Potentially Viable	1,2,3				
							153,000	7.2	JORC	Inferred			223	Potentially Viable	1,2,3				
					Lead		98,000	1.7	JORC	Indicated	137,000		222	Potentially Viable	1,2,3				
							39,000	1.8	JORC	Inferred			223	Potentially Viable	1,2,3				
					Silver		5940000 (Oz)	33 (g/t)	JORC	Indicated	8,040,000 (Oz)		222	Potentially Viable	1,2,3				
							2100000 (Oz)	31 (g/t)	JORC	Inferred			223	Potentially Viable	1,2,3				
					Cobalt		n/a				324		Non Viable	1,2,3					
					Nickel		n/a				324		Non Viable	1,2,3					
					Copper		n/a				324		Non Viable	1,2,3					
					Lithium		n/a				324		Non Viable	1,2,3					
					7,790,000 (t)													1,2,3	

Sardinia Tailings	Private Interest , Unnamed Owner, People's Gvt. of Gansu Province	Reserves Development	Temporarily on Hold	Zinc	Zinc		1,846,000	2.07	Non-compliant	Resource		31/03/2010	334	Non Viable	3	
					Lead		499	0.56	Non-compliant	Resource			334	Non Viable	3	
					89,167,000 (t)									3		
Furtei	Sardinia Gold Mining S.P.A	Production - Limited Production	Unknown	Gold	Gold		426,000 (OZ)	2.312 (g/t)	NI 43-101	Measured & Indicated	448,700 (OZ)	9/3/2008	221	Potentially Viable	3	
							22,700 (OZ)	2.030 (g/t)	NI 43-101	Inferred			223	Potentially Viable	3	
					Copper		14,000	0.243	NI 43-101	Measured & Indicated	14,316		221	Potentially Viable	3	
							316	0.09	NI 43-101	Inferred			223	Potentially Viable	3	
					Arsenic		3,200	0.056	NI 43-101	Measured & Indicated	3,332		221	Potentially Viable	3	
							132	0.038	NI 43-101	Inferred			223	Potentially Viable	3	
					Silver		563,000	3.058	NI 43-101	Measured & Indicated	597,000		221	Potentially Viable	3	

							34,000	2.952	NI 43-101	Inferred			223	Potentially Viable	3
					6,079,100 (t)									3	
Osilo	Sardinia Gold Mining S.P.A	Reserves Development	Inactive	Gold	Gold		167,000 (OZ)	6.5 (g/t)	NI 43-101	Measured & Indicated	374,000 (OZ)	8/1/2007	222	Potentially Viable	3
							207,000 (OZ)	7.5 (g/t)	NI 43-101	Inferred			223	Potentially Viable	3
					Silver		983,000 (OZ)	38.2 (g/t)	NI 43-101	Measured & Indicated	1,586,000 (OZ)		222	Potentially Viable	3
							603,000 (OZ)	21.8 (g/t)	NI 43-101	Inferred			223	Potentially Viable	3
					1,660,000 (t)										3
Novazza	Altamin Ltd.	Reserves Development	Inactive	Uranium	U308		2,877,000 (lbs)	0.15	JORC	Inferred	2,877,000 (lbs)	9/18/2006	223	Potentially Viable	1,3
					870,000 (t)										1,3
Lazio	Energia Minerals Srl	Reserves Development	Active	Lithium	Lithium		39,000	190 mg/l	JORC	Indicated	391,000	30/06/2024	222	Potentially Viable	1
							352,000	90 mg/l	JORC	Inferred			223	Potentially Viable	1
					Boron		1,500,000	7,500 mg/l	JORC	Indicated	38,300,000		222	Potentially Viable	1
							36,800,000	9,700 mg/l	JORC	Inferred			223	Potentially Viable	1

					Potassium		17,500,000	84,000 mg/l	JORC	Indicated	101,500,000		222	Potentially Viable	1
							84,000,000	22,000 mg/l	JORC	Inferred			223	Potentially Viable	1
					158,701,000,000 (m3)										1
Piampaludo	C.E.T	Exploration	Inactive	Titanium	Titanium		9,000,000	6	UNFC	Resource	9,000,000	2021	323	Non Viable	4
Silius	Mineraria Gerrei	Mining Concession	Active	Fluospar	Fluospar		2,200,000	3.18	UNFC	Resource	2,200,000	2024	112	Viable	5,6,7
Punta Corna	Altamin Ltd.	Exploration License	Active	Cobalt	Cobalt		1,020,000	1.5	Indirect estimation*	Resource	1,020,000	2024	224	Potentially Viable	1,8,9
					Silver		984,000,000 (Oz)	450 g/t	Indirect estimation*	Resource	984,000,000 (Oz)		224	Potentially Viable	1,8,9
					Nickel		680,000	1	Indirect estimation*	Resource	680,000		224	Potentially Viable	1,8,9
					Copper		2,040,000	3	Indirect estimation*	Resource	2,040,000		224	Potentially Viable	1,8,9
Corchia	Energia Minerals Srl	Exploration License	Active	Copper	Copper		5,465	2.53	Indirect estimation*	Resource	5,465	2023	224	Potentially Viable	1,9,10,11
					Lead		32	0.015	Indirect estimation*	Resource	32		224	Potentially Viable	1,9,10,11
					Zinc		2,506	1.16	Indirect estimation*	Resource	2,506		224	Potentially Viable	1,9,10,11
					Nickel		162	0.075	Indirect estimation*	Resource	162		224	Potentially Viable	1,9,10,11
					Cobalt		497	0.23	Indirect estimation*	Resource	497		224	Potentially Viable	1,9,10,11

Pianciano Nuovo	So.Ri.Com.	On Production	Active	Fluospar	Fluospar		18,000,000	30	Company Report	Resource	5,000,000	2024	112	Viable	12
Lemina	Marcello Bruera	Exploration Permit	Active	Graphite	Graphite							2024	234	Potentially Viable	13
Piedmont	Alligator Energy Ltd., Chris Reindler & Partners	Target outline	Active	Nickel	Nickel			2.48	Non-compliant	Resource		2022	234	Potentially Viable	3, 14, 15
					Cobalt			0.19	Non-compliant	Resource					
					Copper			6.38	Non-compliant	Resource					
					PGMs										
					Zinc										
Castello di Guala	KEC Exploration	Re-Application	Active	Nickel	Nickel							2022	334	Non Viable	3, 16
					Copper										
					PGM										
Monte Bianco	Altamin Ltd.	Application for Permit	Active	Copper	Copper							2022	334	Prospective	1, 2, 3
					Lead										
					Manganese										
					Zinc										
Zanca	Western Metallica	Exploration Permit	Active	Silver	Silver							2023	224	Potentially Viable	17
					Gold										
					Bismuth										
					Copper										
					Magnesium										
					Lead										

Villar	Altamin Ltd.	Exploration License	Active	Graphite	Graphite							2022	224	Potentially Viable	1, 2, 3
epCRM	Minerali Industriali	Prefeasibility	Active	REEs	REEs							2024	224	Potentially Viable	18, 19
Giacurru	Sabbie di Parma srl	Prefeasibility	Active	Magnetite	Magnetite	6,500,000			Company Report	Probable	6,500,000	2008	222	Potentially Viable	20, 21
					Magnetite	3,100,000			Company Report	Proved	3,100,000		222	Potentially Viable	20, 21
					9,600,000										20, 21
Rio Cannero	Società Alpine Gold Lodes s.n.c	Research Permit	Active	Gold	Gold							2024	224	Potentially Viable	22, 23
					Silver										
					Tungsten										
Alpe Laghetto	Alligator Energy Ltd.	Exploration	Active	Cobalt	Cobalt			0.07	JORC			2018	223	Potentially Viable	24, 25
					Nickel			1.36	JORC						
					Copper			0.1	JORC						
					PGE										
					Gold										
Morghe n		Research	Active	Gold	Gold							2022	344	Prospective	9
					Silver										
					Nickel										
					Copper										
					PGE										

* Estimates are deduced and roughly calculated from preliminary studies/research, public data, and news articles, rendering the estimates unreliable as they are not reported by the company. They only serve for the purpose of this inventory.

Production Data

Commodity ²	2022	Activity	Source	UNFC
------------------------	------	----------	--------	------

METALS							
Aluminum, metal, secondary		769,500		Processing	26, 27		111
Copper, refinery, secondary		15,400		Processing	26, 27		111
Iron and steel:							
Pig iron	thousand metric tons	3,925			26, 27		111
Steel, raw	do.	24,400		Processing	26, 27		111
Lead, refinery:							
Primary		36,400	^e	Processing	26, 27		112
Secondary		116,000	^e	Processing	26, 27		112
Zinc, smelter:							
Primary		76,000	^e	Processing	28		111
Secondary		105,000	^e	Processing	28		111
INDUSTRIAL MINERALS							
Cement, hydraulic	thousand metric tons	23,500	^e	Extraction	26, 27		111
Clay:							
Ball clay	do.	560	^e	Extraction	26, 27		111
Bentonite	do.	32		Extraction	26, 27		111
Common clay	do.	2,000	^e	Extraction	26, 27		112
Refractory clay, excluding kaolinitic earth	do.	8		Processing	26, 27		111
Feldspar ^e	do.	2,200		Extraction	26, 27		112
Gypsum, mine	do.	160		Extraction	26, 27		111
Talc, bauxite, and fluorite	do.	385		Extraction	28		111
Iron oxide pigments		19,720		Processing	26, 27		111
Lime, hydrated, hydraulic, and quicklime ^e	thousand metric tons	3,600		Extraction	26, 27		111
Nitrogen, ammonia, N content	do.	600	^e				
Pumice and related minerals, pozzolan ^e		47,000		Processing	28		111
Rock Salt	do.	3,017		Extraction	28		111
Sand and gravel, industrial ^e	do.	13,000		Extraction	28		111

Stone, sand, and gravel, construction:							
Sand and gravel ^e	do.	65,000	Extraction	26, 27	111		
Stone:							
Crushed, limestone, for lime and cement	do.	41,675	Extraction	26, 27	111		

^e Estimated. ^r Revised. do. Ditto.

¹ Table includes data available through October 3, 2022. All data are reported unless otherwise noted. Estimated data are rounded to no more than three significant digits.

² In addition to the commodities listed, barite, chalk, magnesium metal, potash, refined silver, synthetic soda ash, byproduct sulfur from petroleum and metallurgy, and talc and related materials may have been produced, but available information was inadequate to make reliable estimates of output.

Historic data

Raw Material	Quantity (t)	Type	Confidence	Year	UNFC	Source
Antimony	20000	Resource	Historic resource estimate	2019	333	29

Asphalt	20000000	Resource	Poorly documented	2013	344	30
Baryte	3500000	Resource	Poorly documented	2013	344	30
Baryte	3500000	Resource	Historic resource estimate	2019	333	39
Bauxite	2250000	Resource	Historic resource estimate	2019	333	29
Bauxite	1250000	Reserve	Historic reserve estimate	2019	332	29
Bentonite	150000	Resource	Poorly documented	2013	344	30
Cement	10000000	Resource	Poorly documented	2013	344	30
Feldspar	1000000	Reserve	Estimate	2013	332	29
Feldspar	5000000	Resource	Poorly documented	2013	344	30
Fluospar	35000000	Resource	Historic resource estimate	2019	333	29
Iron ore	3100000	Resource	Non compliant resource estimate	2019	334	29
Iron ore	3000000	Reserve	Estimate	2013	332	29
Kaolin	1000000	Reserve	Estimate	2013	332	29
Kaolin	10000	Resource	Poorly documented	2013	344	30
Lead	4000000	Reserve	Estimate	2013	332	29
Lead	100000	Resource	Poorly documented	2013	344	30
Potash	500000000	Reserve	Estimate	2013	332	29
Rock Salt	100000000	Reserve	Estimate	2013	332	29
Rock Salt	3000000	Resource	Poorly documented	2013	344	30
Sulphur	5000000	Reserve	Estimate	2013	332	29
Sulphur	800000	Resource	Historic resource estimate	2013	333	29
Talc	10000000	Reserve	Estimate	2013	332	29
Talc	100000	Resource	Poorly documented	2013	344	30
Zinc	3400000	Reserve	Estimate	2013	332	29
Zinc	100000	Resource	Poorly documented	2013	344	30

Raw Materials Data Classification

UNFC Classification	111	112	113	221	222	223	224	321	322	323	333	334
------------------------	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

[illegible]

Manganese												
Natural Graphite												
Nickel							680,162					
Niobium												
Phosphate Rock												
Phosphorus												
PGM												
Potash											500000000	
Potassium					17500000	84000000						
Rock Salt	3017										100000000	3000000
Sand and Gravel	78000											
Scandium												
Silicon Metal												
Silver				56300	6399889.00	2999356.00	67,953,367					
Strontium												
Sulphur											5000000	800000
Talc	385										10000000	100000
Tantalum												
Titanium										9,000,000		
Tungsten												
Vanadium												
Zinc		181,000			375,000	153,000	2,506				3,400,000	1,946,000

Supplementary Note on the adopted methodology

The methodology for the application of UNFC to the preliminary inventory of raw materials in Italy, as described in Section 3.2 of the manuscript aims to demonstrate the methodological feasibility of classifying heterogeneous and scattered data sources under a common and structured framework. The approach was developed within the frame of this research with remarks to be taken in consideration, in particular:

- *Data Sources and Classification* where the raw materials data included in the inventory were compiled from three primary categories: (i) Authorized raw materials projects and production data, (ii) Historical data and legacy records, and (iii) Extrapolated data from geological occurrences. Each data type involved a tailored methodological approach to classification, reflecting differences in data acquisition methods, maturity, and confidence levels.
- *Authorized Projects and Production Data* were obtained from regulatory records, international databases, and official statistics. These data pertain to active mining or exploration projects with legal titles and/or production history. The projects were evaluated based on: Permitting status and development stage; Compliance with national legislation and sustainability criteria, to assess environmental-socio-economic viability (E axis); Available production data or reported estimates, to determine resource quantities (G axis). Where CRIRSCO-compliant data were available, the CRIRSCO–UNFC Bridging Document (UNECE, 2025) was used to assign UNFC categories.
- *Historical and Legacy Data* were retrieved from repositories such as Minerals4EU, regional mining records, and academic publications. These datasets often lacked standardization or detailed technical documentation. The classification applied reflected: Low environmental-socio-economic viability (E3), given absence of updated legal or sustainability context; Uncertain technical feasibility, assigned F3 or F4 depending on evidence of past project development; Variable geological confidence, with G2 or G3 used when data showed evidence of drilling or reserve estimation, and G4 where indirect or minimal evidence existed.
- *Extrapolated Geological Occurrence Data* were used to capture broader national potential, the inventory incorporated raw materials data inferred from geological mapping and academic studies. These estimates were typically regional in scope and lacked specific project-level validation. In such cases: E3 was assigned universally due to the absence of socio-economic assessments; F3 or F4 was used to reflect limited or absent technical development; G3 or G4 was based on whether information was derived from direct mapping or indirect geological inference. These entries, such as those based on the national occurrences dataset developed by ISPRA (Fumanti, 2023), were included to highlight underexplored mineral potential, though their classification reflects very low confidence across all three axes.
- *UNFC Categorization Judgement* applied in assigning UNFC categories, the following principles were observed: Granularity: Where possible, individual projects or deposits were assessed, rather than generalized regional data; Conservatism: In the absence of full supporting documentation, lower confidence categories were used; Bridging: When available, data reported under CRIRSCO-aligned standards were mapped directly to UNFC using the official bridging guidelines; and Regulatory Integration: Compliance with Italy's mining, environmental, and safety legislation supported classification under E1 and F1 categories.

Sources

- 1 <https://www.altamin.com.au/>
- 2 [https://www.mimit.gov.it/images/stories/documenti/allegati/Presentazione dott Marcello De Angelis Energia Minerals e Altamin 10-11-2022.pdf](https://www.mimit.gov.it/images/stories/documenti/allegati/Presentazione_dott_Marcello_De_Angelis_Energia_Minerals_e_Altamin_10-11-2022.pdf)
- 3 <https://www.capitaliq.spglobal.com/web/login?target=dashboard>
- 4 <https://unece.org/mineral-case-studies>
- 5 "Mondillo N. et al., Evaluation of the amount of rare earth elements -REE in the Silius fluorite vein system (SE Sardinia, Italy)"
- 6 <https://portal.sardegna.sira.it/-/concessione-mineraria-per-la-riattivazione-della-miniera-genna-tres-montis-comune-di-s-basilio-e-silius-v-3>
- 7 <https://www.minerariagerrei.com/it/>
- 8 https://www.listcorp.com/asx/azi/altamin-limited/news/punta-corna-delivers-further-high-grade-results-2502653.html?utm_source=chatgpt.com
- 9 Individual Opinion
- 10 https://www.parmadaily.it/estrazione-di-rame-e-altri-metalli-oro-a-berceto-e-a-borgotaro-no-dei-sindaci-e-di-legambiente-la-multinazionale-la-ricerca-non-ha-impatto-ambientale/?utm_source=chatgpt.com
- 11 https://www.listcorp.com/asx/azi/altamin-limited/news/corchia-copper-project-exploration-licence-granted-2864418.html?utm_source=chatgpt.com
- 12 <https://it.soricom.it/>
- 13 https://www.regione.piemonte.it/governo/bollettino/abbonati/2024/08/attach/dda1900000051_10600.pdf
- 14 <https://www.listcorp.com/asx/age/alligator-energy-limited/news/piedmont-ni-co-project-option-agreement-finalised-2710355.html>
- 15 <https://www.listcorp.com/asx/age/alligator-energy-limited/news/option-to-acquire-100-percentage-of-the-piedmont-nickel-cobalt-project-2666871.html>
- 16 <https://au.companiesdb.net/companies/kec-exploration-pty-ltd/>
- 17 <https://va.mite.gov.it/it-IT/Oggetti/Info/9944>
- 18 <https://www.mineraliindustriali.it/>
- 19 <https://tmdb.eu/marke/EU-018967348::epcrm-enriched-products-from-critical-raw-materials-minerali-industriali-srl.html>

20 <https://www.minieredisardegna.it/LeMiniere.php?IdM=120&IdCM=&SID=>

21 Ministero dell'Ambiente e della Sicurezza energetica. <https://va.mite.gov.it> › File › Documento

22 https://www.regione.piemonte.it/governo/bollettino/abbonati/2024/52/attach/dda1900000511_10600.pdf

23 <https://iris.unito.it/retrieve/e27ce432-9533-2581-e053-d805fe0acbaa/Oberto%20%26%20Petroccia%202021.pdf>

24 <https://wcsecure.weblink.com.au/pdf/AGE/02574183.pdf>

25 <https://announcements.asx.com.au/asxpdf/20180726/pdf/43wsdn8f3tq4l1.pdf>

26 USGS Minerals Yearbook 2020-21

27 <https://d9-wret.s3.us-west-2.amazonaws.com/assets/palladium/production/s3fs-public/media/files/myb3-2022-Italy-ert.xlsx>

28 https://esploradati.istat.it/databrowser/#/en/dw/categories/IT1,Z0920ENV,1.0/DCCV_CAVE_MIN/IT1,9_951_DF_DCCV_CAVE_MIN_2,1.0

29 Minerals4EU (2019). <https://geoera.eu/projects/mintell4eu7/mintell4eu-wp2-update-to-electronic-european-minerals-yearbook/>

30 <https://www.isprambiente.gov.it/files/miniere/i-siti-minerari-italiani-1870-2006.pdf>