

RARE EARTH ELEMENTS AND THE SELECTIVE TAX: ENVIRONMENTAL PROTECTION *VERSUS* STRATEGIC DEVELOPMENT IN BRAZIL AFTER THE TAX REFORM

*Terras Raras e Imposto Seletivo:
Proteção Ambiental versus
Desenvolvimento Estratégico no Brasil
após a Reforma Tributária*

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ABSTRACT: The Brazilian tax reform, introduced by Constitutional Amendment 132/2023 and detailed by Complementary Law 214/2025, established the Selective Tax (*Imposto Seletivo—IS*), a federal levy with an explicit extrafiscal purpose aimed at protect-

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ing human health and the environment. The scope of the tax's incidence presents no major legislative definition complexities when the harmfulness of the taxed good is clear and does not conflict with other constitutional values of equivalent weight—as is the case with tobacco, alcoholic beverages, and fossil fuels. This article examines what happens when that condition is absent, using rare earth elements as a paradigmatic case. Rare earths—a group of chemical elements indispensable to the energy transition, national defense, and the development of artificial intelligence—present documented negative environmental and health externalities while simultaneously generating major positive strategic and technological externalities. Brazil holds the world's second-largest reserves of these minerals yet produces only a marginal fraction of its potential. Annex XVII of Complementary Law 214/2025 excluded rare earths from the scope of the IS without the explanatory memorandum stating the criterion for that omission. The article argues that this absence of explicit legislative justification is not merely a formal issue, as it may undermine the normative rationality of the system, exposing the sector's tax regime to avoidable interpretive vulnerabilities.

KEYWORDS: Selective Tax; rare earth elements; dual externality; Brazilian tax reform; legislative justification.

RESUMO: A reforma tributária brasileira, introduzida pela Emenda Constitucional 132/2023 e detalhada pela Lei Complementar 214/2025, criou o Imposto Seletivo (IS), tributo federal de função extrafiscal orientado à proteção da saúde humana e do meio ambiente. A incidência do tributo não apresenta maiores complexidades de definições legislativas quando a nocividade do bem tributado é clara e não colide com outros valores constitucionais de peso equivalente — como ocorre com o tabaco, as bebidas alcoólicas e os combustíveis fósseis. O presente artigo examina o que ocorre quando essa condição não se verifica, tomando as terras raras como caso paradigmático. As terras raras - grupo de elementos químicos indispensáveis à transição energética, à defesa nacional e ao desenvolvimento da inteligência artificial - apresentam externalidades negativas ambientais e sanitárias documentadas e, simultaneamente, externalidades positivas estratégicas e tecnológicas de primeira grandeza. O Brasil detém a segunda maior reserva mundial desses minerais e produz uma fração marginal de seu potencial. O Anexo XVII da LC 214/2025 omitiu as terras raras do campo de incidência

do IS sem que a exposição de motivos enunciasse o critério dessa omissão. O artigo sustenta que essa ausência de fundamentação legislativa explícita não é questão meramente formal, podendo comprometer a racionalidade normativa do sistema, expondo o regime tributário do setor a fragilidades interpretativas evitáveis.

PALAVRAS-CHAVE: Imposto Seletivo; terras raras; dupla externalidade; reforma tributária brasileira; justificativa legislativa.

SUMMARY: 1. Introduction. 2. Rare Earth Elements: What Is at Stake. 3. Selective Taxation in the Post-Reform Brazilian Tax System. 4. The Selective Tax and “Easy Cases”. 5. Rare Earth Elements and the Selective Tax. 6. Conclusion. 7. References.

1. INTRODUCTION

The Brazilian tax reform, introduced by Constitutional Amendment 132/2023 and implemented by subsequent complementary legislation (Complementary Laws 214/2025 and 227/2026), significantly reorganized the tax system, particularly regarding consumption chains.

Among the taxes created, the Selective Tax (IS) occupies a unique position: unlike the Goods and Services Tax (IBS) and the Goods and Services Contribution (CBS), which are intended to be neutral regarding economic choices made by economic agents, the IS was conceived as an extrafiscal ⁴ instrument, constitutionally oriented toward the protection of human health and the environment.

This design has clear functionality when the harmfulness of the taxed good or activity is sufficiently clear and unambiguous. Tobacco, alcoholic beverages, and fossil fuels are examples where the relevant constitutional values (health, the environment, and climate policies) consistently point toward taxation. The application of the IS, in these cases, operates with relative internal coherence.

Complexity arises when the taxable good or activity does not fit

⁴ Extrafiscal, i.e., aimed at regulating behavior rather than raising revenue.

this simple logic. Rare earth elements—a group of seventeen chemical elements with unique magnetic, luminescent, and electrochemical properties—present precisely this difficulty.

Their extraction is associated with documented environmental and health risks, which, according to the constitutional logic of the IS, would justify taxation. At the same time, these elements are indispensable inputs for defense technologies, artificial intelligence, and the energy transition—sectors in which Brazil, holder of one of the world's largest reserves of these minerals, has a significant strategic interest. Taxing or exempting, in this case, involves choices grounded in constitutional values of equal dignity. And, for this reason, they require strong legislative justification, lest they attract unnecessary litigation that is detrimental to the public policies established for the inputs in question.

This article takes this tension as its starting point to show that the Brazilian legislature, in the way it has so far defined the tax treatment of rare earths in the context of the IS, creates legal uncertainty by failing to explicitly state the reasons and grounds for the non-taxation of rare earths, allowing for speculation whether this constitutes a strategic policy decision, a postponement of IS taxation on rare earths, or a mere omission to be resolved through political or judicial disputes.

2. RARE EARTH ELEMENTS: WHAT IS AT STAKE

Rare earths comprise a group of seventeen chemical elements—the fifteen lanthanides, scandium, and yttrium—characterized by magnetic, luminescent, and electrochemical properties that make them difficult to substitute in high-tech applications.⁵

⁵ ZEPF, Volker. An Overview of the Usefulness and Strategic Value of Rare Earth Metals. In: RARE EARTH ELEMENTS: A NEW APPROACH TO THE NEXUS OF SUPPLY, DEMAND AND USE. [No place: n.p.], 2016. p. 3–17. DOI: 10.1016/B978-0-12-802328-0.00001-2. PENCHOFF, Deborah A.; SIMS, Charles B.; WINDUS, Theresa L. Rare Earth Elements and Critical Materials: Uses and Availability. In: PENCHOFF, Deborah A.; WINDUS, Theresa L.; PETERSON, Charles C. (eds.). Rare Earth Elements and Actinides: Progress

Despite the nomenclature used to describe them, these elements are not rare in the Earth's crust. What is rare, in an economically relevant sense, is finding them in sufficient concentrations to make extraction viable, and even rarer is having the infrastructure and processing technology necessary to transform them into usable industrial inputs.

The global distribution of reserves is geographically concentrated. According to the United States Geological Survey, in its Mineral Commodity Summaries from February 2026, global reserves total well over 85 million metric tons of rare earth oxide equivalent.

China holds 44 million tons—approximately 52% of the total. Brazil ranks second, with 21 million tons, followed by India, Australia, Russia, and Vietnam. This concentration is not limited to reserves: China accounted for 270,000 of the approximately 390,000 tons produced globally in 2025—about 69% of world production—and also dominates processing, a stage in which Western dependence is even more pronounced.⁶

Brazil's position in this context is paradoxical. With the world's second-largest reserves, Brazil produced only 560 tons in 2024, with an estimated 2,000 tons in 2025—less than 0.6% of global production. This represents one of the largest mismatches between reserves and production among countries with significant deposits, and this mismatch underscores the importance of the tax issue. The decisions that Brazilian lawmakers make regarding the sector, as reflected in the tax system, will directly influence the pace and conditions under which these reserves will—or will not—be developed.

in Computational Science Applications. Washington, DC: American Chemical Society, 2021. (ACS Symposium Series, vol. 1388, chap. 3). DOI: 10.1021/bk-2021-1388.ch003.

⁶ JOHNSTON, Shelby N. Rare earths. In: U.S. GEOLOGICAL SURVEY. Mineral Commodity Summaries 2026. Reston: USGS, 2026. DOI: 10.3133/mcs2026.

Figure 1. World Rare Earth Reserves by Country

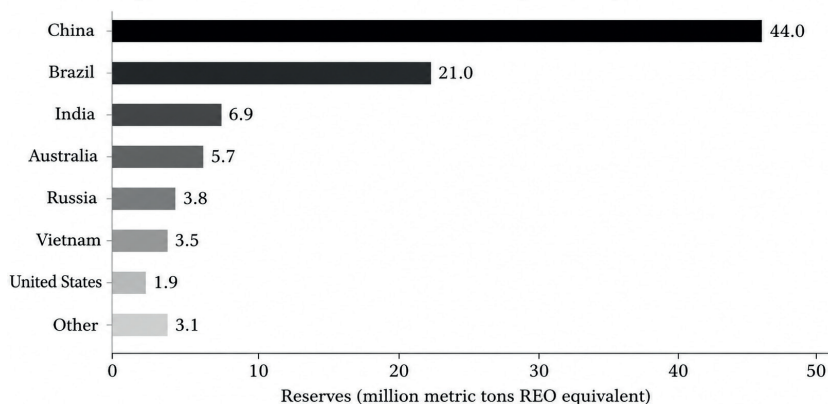
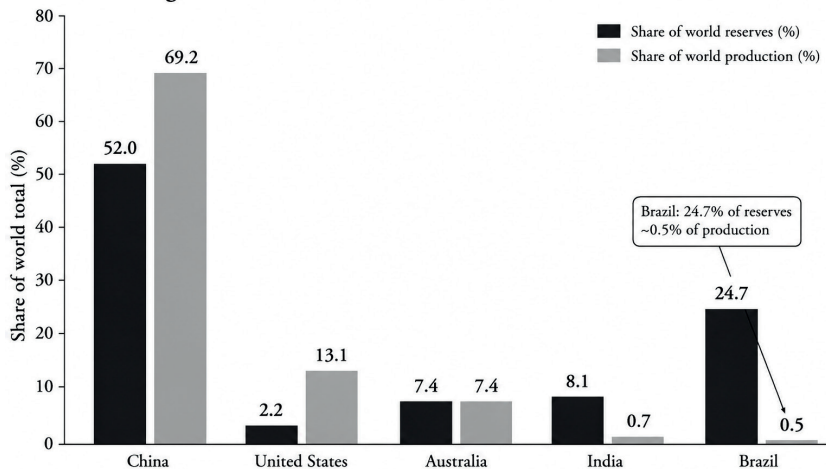


Figure 2. Rare Earth Reserves vs. Production: Selected Countries



Source: USGS, Mineral Commodity Summaries, February 2026.

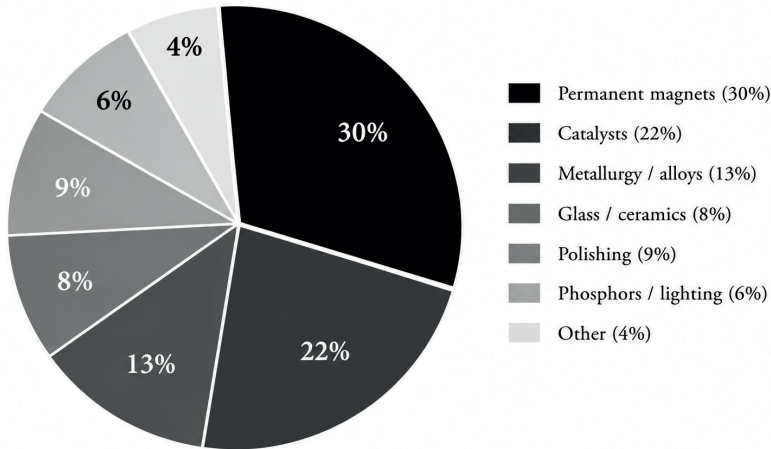
The uses of rare earths explain why this development is of interest to much more than just the mineral sector. These elements are found in wind turbines, electric vehicles, solar panels, smartphones, hard drives, and high-efficiency lighting systems. In the defense sector, missile guidance systems, radars, sonars, stealth technology, and fighter jet engines rely on rare earth magnets for which no substitutes with equivalent performance are available on an industrial scale.

Artificial intelligence, in turn, depends on hardware infrastructure (servers, chips, storage systems) that also relies on these elements.⁷

In summary, rare earths are a cross-cutting input for the three major technological agendas of the 21st century: the energy transition, the modernization of defense systems, and the development of artificial intelligence.

According to the International Energy Agency, in its Global Critical Minerals Outlook 2025, global demand for rare earths for magnets—the segment’s primary use—is expected to grow by 50% to 60% by 2040, driven primarily by the expansion of electric vehicles and wind turbines.⁸

Figure 3. Rare Earth End Uses by Sector



Source: USGS, Mineral Commodity Summaries, February 2026.

⁷ PENCHOFF, Deborah A.; SIMS, Charles B.; WINDUS, Theresa L. Rare Earth Elements and Critical Materials: Uses and Availability. In: PENCHOFF, Deborah A.; WINDUS, Theresa L.; PETERSON, Charles C. (eds.). Rare Earth Elements and Actinides: Progress in Computational Science Applications. Washington, DC: American Chemical Society, 2021. (ACS Symposium Series, vol. 1388, chap. 3). DOI: 10.1021/bk-2021-1388.ch003. HAQUE, Nawshad; HUGHES, Anthony; LIM, Seng; VERNON, Chris. Rare Earth Elements: Overview of Mining, Mineralogy, Uses, Sustainability, and Environmental Impact. Resources, vol. 3, no. 4, pp. 614–635, 2014. DOI: 10.3390/resources3040614.

⁸ INTERNATIONAL ENERGY AGENCY. Global Critical Minerals Outlook 2025. Paris: IEA, 2025. Available at: <https://www.iea.org/reports/global-critical-minerals-outlook-2025>.

Extraction, however, is neither environmentally benign nor neutral. The mining and separation processes for rare earths are associated with the generation of radioactive waste (the ores often contain thorium and uranium in their composition), the contamination of soil and water resources by heavy metals and chemicals used in leaching, and the degradation of ecosystems in mining areas.^{9 10}

The health risks to populations near extraction and processing zones are equally well documented: exposure to particulates and rare earth compounds has been associated with organ dysfunction, genetic and epigenetic alterations, and cases of cumulative toxicity.¹¹

These impacts are not inevitable. They depend on the methods employed, the geology of the deposit, and the rigor of the regulations applied. But neither are they merely hypothetical. The possibility of these impacts materializing is precisely what fuels, from an environmental and health perspective, the argument for taxing extraction.

The geopolitical landscape lends additional urgency to the issue. In April 2025, China tightened its export controls on rare earths, restricting access to compounds, metals, and oxides of elements heavily used in defense systems and high-performance magnets.¹²

⁹ ZAPP, Petra; SCHREIBER, Andrea; MARX, Josefine; KUCKSHINRICHS, Wilhelm. Environmental impacts of rare earth production. *MRS Bulletin*, vol. 47, pp. 267–275, 2022. DOI: 10.1557/s43577-022-00286-6.

¹⁰ HAQUE, Nawshad; HUGHES, Anthony; LIM, Seng; VERNON, Chris. Rare Earth Elements: Overview of Mining, Mineralogy, Uses, Sustainability and Environmental Impact. *Resources*, vol. 3, no. 4, pp. 614–635, 2014. DOI: 10.3390/resources3040614. DUAN, W. Rare earth elements — a review of exploration, processing, environmental impact, recycling and prospect analysis. *Applied and Computational Engineering*, vol. 56, no. 1, pp. 77–81, 2024. DOI: 10.54254/2755-2721/56/20240620.

¹¹ WANG, Wenyu; YANG, Yanfang; WANG, Donglei; HUANG, Lihua. Toxic effects of rare earth elements on human health: a review. *Toxics*, vol. 12, no. 5, art. 317, 2024. DOI: 10.3390/toxics12050317.

¹² CHINA. Ministry of Commerce; General Administration of Customs. Announcement No. 18 of 2025: Decision to Implement Export Control on Some Medium and Heavy Rare Earth Related Items. Apr. 4, 2025. Available at: <https://english.mofcom.gov.cn/Policies/AnnouncementsOrders/>

The International Energy Agency documented the immediate effects: export volumes fell sharply, automakers in the United States and Europe reported difficulties in obtaining permanent magnets, and prices in importing countries reached six times those charged domestically in China. The episode confirmed that access to rare earths is an instrument of geopolitical power—and that countries with significant reserves, such as Brazil, occupy a strategic position whose value is likely to grow.

It is in this context that the tax issue arises. Brazil holds one of the world's largest reserves of a strategic resource, produces a marginal fraction of what it could produce, and must decide, with transparency, how the tax system will treat extraction, knowing that this decision simultaneously involves real environmental and health risks and strategic and economic opportunities of the highest order.¹³

3. SELECTIVE TAXATION IN THE POST-REFORM BRAZILIAN TAX SYSTEM

Constitutional Amendment 132/2023 introduced profound changes to consumption taxation in Brazil. The backbone of the reform is the replacement of taxes under different jurisdictions—ICMS, ISS, PIS, COFINS, and, in some cases, IPI—with two new broad-based taxes: the Goods and Services Tax (IBS), a shared-jurisdiction tax (quantifiable capacity) between states and municipalities, and the Goods and Services Contribution (CBS), a federal tax.

Both were designed with the aim of neutrality—full non-cumu-

art/2025/art_0dd87cbee7b045bf93fabe6ab2faceee.html. The effects on export volumes, magnet availability, and international prices were documented by the International Energy Agency. See IEA. With new export controls on critical minerals, supply concentration risks become reality. Paris: IEA, Oct. 2025. Available at: <https://www.iea.org/commentaries/with-new-export-controls-on-critical-minerals-supply-concentration-risks-become-reality>.

¹³ INTERNATIONAL ENERGY AGENCY. Global Critical Minerals Outlook 2025. Paris: IEA, 2025.

lative treatment, a uniform rate, and a destination-based system—so as not to interfere with economic decisions made by economic agents.

The Selective Tax (IS), also introduced by Constitutional Amendment 132/2023, occupies a distinct place within this framework. It does not purport to be neutral and has an explicitly extrafiscal function already enshrined in the Constitution.

Pursuant to Article 153, item VIII, of the Federal Constitution, as amended by Constitutional Amendment 132/2023, the IS is levied on the production, extraction, sale, or importation of goods and services harmful to health or the environment. Its purpose is therefore more to influence behavior than to raise revenue (although this is a matter of debate due to the list of products and activities selected to be subject to the tax).

The IS was designed to tax what the framers of the Constitution deemed harmful, making these activities pricier and discouraging their consumption or expansion.

Supplementary legislation detailed the structure of the tax examined in this article. The “taxable event” is the production, extraction, sale, or importation of the goods and services defined as subject to it. The tax base varies and may be the transaction value or the quantity produced or extracted, as the case may be. The rates will be set by ordinary federal law and may be specific or *ad valorem* (in the case of mineral extraction, a ceiling of 1% has been established). The goods and services initially covered include motor vehicles, vessels, and aircraft; tobacco products; alcoholic and sugary beverages; betting contests and fantasy sports; and the production, extraction, sale, or importation of mineral goods—a category that, in theory, includes rare earth elements.¹⁴

Annex XVII of Law 214/2025 lists the mineral resources subject to the Selective Tax (IS) and includes only iron ore, crude oil,

¹⁴ FOLLONI, André. Tax jurisdiction over selective taxes: the text and its contexts. *Revista Direito Tributário Atual*, vol. 57, pp. 617–642. São Paulo: IBDT, 2024. DOI: 10.46801/2595-6280.57.25.2024.2606.

and natural gas. Rare earth elements are absent from this list. This omission was not accompanied, in the explanatory memorandum of the supplementary bill, by a rationale explaining the criteria adopted for selecting the included minerals. The result is that the lack of transparency in the legislative criteria for the concrete definition of the tax treatment of rare earth elements under the IS leaves the matter open to debates that could potentially undermine related public policy.

4. THE IS AND “EASY CASES”

The Selective Tax was designed to operate on a relatively simple premise: there are goods and activities whose harmfulness to human health or the environment is sufficiently established to justify a burdensome tax intervention.

In such cases, the tax burden need not be justified by a complex balancing of conflicting values. The harmfulness or potential for harm is the basis, and taxation is the response, although there remains a need for effective legislative deliberation and transparent demonstration to members of society whose will is represented by parliament.

Tobacco is a well-established example. Decades of scientific evidence on the effects of smoking on human health, combined with the social costs associated with treating smoking-related diseases, provide a robust and virtually uncontroversial justification for the tax burden (there is certainly no unanimity, but the majority position regarding the values of life and health as more relevant prevails).

There is no national strategic interest that points in the opposite direction. The tobacco production chain carries economic weight in some regions, but this weight does not rival, in constitutional significance, the protection of individual and public health. The constitutional value favoring taxation is dominant.¹⁵

¹⁵ ANDRADE, José Maria Arruda de. *Imposto seletivo e pecado: juízos críticos sobre tributação saudável*. São Paulo: IBDT, 2024.

Alcoholic beverages follow a similar logic. The harm to individual and public health associated with excessive alcohol consumption is widely documented, and the differential taxation of these products has precedent in virtually all developed tax systems. Here, too, there is no positive externality of equivalent weight that justifies favorable treatment by the tax system.

The taxation of fossil fuels, in turn, is typically justified both for environmental reasons and due to international climate commitments. The direction of the intervention remains clear: tax to discourage, thereby inducing a shift toward less harmful energy sources. The sector's economic interest exists and is considerable, but the value of environmental and climate protection is sufficiently strong to sustain the logic of taxation without the system needing to weigh heavily between constitutional interests of equivalent weight.¹⁶

What these cases have in common is that the relevant constitutional values point in the same direction, or one of them is sufficiently dominant to guide the legislative choice. If taxation, however, falls into a gray area, the logic of the IS is put to the test.

5. RARE EARTHS AND IS

As previously mentioned, Annex XVII of LC 214/2025, which lists the mineral resources subject to the tax, includes only iron ore, crude oil, and natural gas. Rare earths are absent from this list.

The explanatory memorandum of the supplementary bill, when addressing the taxation of extracted mineral resources, also mentions only these three resources, without stating the criteria that guided the selection. The system, therefore, already operates with a concrete definition regarding the tax treatment of rare earths, which is to exclude them from the scope of the IS, without this defi-

¹⁶ Specific geopolitical crises involving oil-producing regions may affect the price and availability of fossil fuels, which could, in exceptional contexts, require a reassessment of tax policy assumptions.

tion having been accompanied by explicit legislative justification.

As previously mentioned, Brazil holds the world's second-largest reserve of rare earths (21 million metric tons of oxide equivalent, according to the USGS MCS 2026), having produced only 560 tons in 2024. This asymmetry seems to highlight the flaws in industrial and technological development policies for strategic sectors, combined with the difficulty of competing with the Chinese production chain, which integrates extraction, processing, and the manufacture of final components at costs that no other country can replicate in the short term.

The result is that Brazil ends up exporting raw ore or simply not exploiting its reserves, while importing, directly or indirectly, the high-tech products that depend on these very same elements.

For Brazil, this situation means that determining the tax treatment of the strategic mineral sector simultaneously involves considerations of environmental policy and national strategic positioning.

A more literal or superficial reading of the constitutional provisions regarding the IS seems to point toward taxation, since extraction is associated with documented environmental and health risks. A more in-depth reading of the constitutional provisions, however, seems to point in the opposite direction. Both directions find support in constitutional values of equal dignity.

In short, this is a tension between interpretive vectors found in the Federal Constitution, with no abstract hierarchy among them. Taxing rare earth extraction, following the environmental and health logic that underpins the tax in typical cases, means making the development of a sector more expensive—a sector in which Brazil has a unique comparative advantage and a direct strategic interest.

It also means reducing the competitiveness of the national production chain for goods that depend on these elements—ranging from components for renewable energy to defense and artificial intelligence systems—at a time when other countries are actively investing in diversifying the global supply to reduce their dependence on other nations.

On the other hand, providing tax relief or incentives ultimately prioritizes economic and strategic development over the environmental and health protection that the framers of the Constitution established as the foundation of the IS.

None of these choices is constitutionally prohibited, since the Constitution protects the environment and human health, but it also protects technological development, sovereignty over natural resources, and national defense.

A more hasty reader might object by saying that the issue is already settled, since strict legality in tax matters—given the exclusion of rare earths from the Annex listing goods subject to the IS—would preclude any argument that could reasonably defend the possibility of rare earth extraction being subject to the tax.

This objection, however, does not exhaust the issue, since the debate goes beyond whether the tax currently applies to rare earths extraction, as will be seen below.

This is a case of double externalities: the same good that generates significant negative externalities from an environmental and health perspective simultaneously generates significant positive externalities from a strategic and technological perspective.

The IS was designed to address the first type of externality; however, without a clear legislative justification regarding the path of taxation on rare earths, it is not possible to understand—without making fragile assumptions—whether values related to national sovereignty and technological development were, in fact, considered in determining the non-imposition of the tax at this initial stage of Brazil's tax reform.

The issue, therefore, is one of potential legislative fragility in a country that plays a leading role in the context of rare earths and yet does not have a defined strategic public policy on the matter.

The lack of adequate legislative justification in a representative democracy, as is the case in Brazil, adds complexity to the political and legal debate that could be avoided if there were a clear explanation of the reasons behind the tax treatment currently applied to rare earths.

In other words, the absence of explicit legislative justification for the omission of rare earth elements from Annex XVII has direct interpretive consequences. Without the criteria that guided the selection of the included minerals having been stated, the interpreter seeking to understand the meaning of this omission will be led to resort to rhetorical arguments such as *mens legis* or *mens legislatoris*, which do not constitute objective data of positive law, and whose use adds legal uncertainty to the sector's tax regime.

Legislative choices with such evaluative weight require explicit justification as a prerequisite for normative rationality—not as a condition of formal validity, but as a requirement of accountability to the recipients of the law.¹⁷

At present, however, there is legislative uncertainty that, if not resolved, will likely result in the following scenarios: 1) there will be a political push to include rare earths as goods subject to the IS, due to the harmful effects of their extraction on the environment and human health; 2) there will be the filing of unconstitutionality suits by political parties interested in defending the existence of a provision in the Federal Constitution requiring that mineral extractions of this type be subject to “green taxes,” for example; 3) there will be action for the Tax Administration to defend the illustrative nature of the list of assets taxed by the IS, in an attempt to tax the extraction of rare earths with the tax analyzed here.

The experience of other countries facing a similar dilemma is instructive, even though none of them offers a solution directly applicable to the post-reform Brazilian tax system.

The United States, through Section 45X of the Inflation Reduction Act of 2022, established a 10% tax credit on the cost of domestic production of critical minerals, including rare earths such as neodymium, dysprosium, and praseodymium.¹⁸

¹⁷ WINTGENS, Luc J. *Legisprudence: Practical Reason in Legislation*. Farnham: Ashgate, 2012. ATIENZA, Manuel. *Contribution to a Theory of Legislation*. Madrid: Civitas, 1997.

¹⁸ UNITED STATES. Inflation Reduction Act of 2022. Public Law 117-169, Aug. 16, 2022. Section 45X — Advanced Manufacturing Production

In February 2025, Australia approved the Critical Minerals Production Tax Incentive: a 10% refundable tax credit on the processing costs of the 31 minerals on the national critical list, available for up to ten years per project, between 2027 and 2040.¹⁹

In both cases, the instrument functions as an incentive for strategic production or processing.

The European Union adopted Regulation (EU) 2024/1252—the Critical Raw Materials Act—in force since May 2024, which establishes binding targets for 2030. At least 10% of Europe’s annual consumption of strategic raw materials must be domestically mined, 40% processed, and 25% recycled, with a limit of 65% dependence on a single supplier country for each material. Rare earths are included in the list of strategic raw materials.²⁰ The instrument is an industrial policy and supply security measure, not a taxation measure.

India has historically regulated the sector through administrative instruments—a state monopoly via IREL—and only opened extraction to the private sector in 2025.²¹ From a tax perspective, rare earth extraction in India is governed by the general mineral royalty

Credit. The list of eligible critical minerals includes, among others, cerium, dysprosium, europium, gadolinium, lanthanum, neodymium, praseodymium, terbium, and yttrium. Available at: <https://www.congress.gov/bill/117th-congress/house-bill/5376/text>.

¹⁹ AUSTRALIA. Australian Taxation Office. Critical Minerals Production Tax Incentive. Income Tax Assessment Act 1997, Division 419, inserted by the Future Made in Australia (Production Tax Credit) Act 2024, passed by the Australian Senate on February 12, 2025. Available at: <https://www.ato.gov.au/businesses-and-organisations/income-deductions-and-concessions/incentives-and-concessions/production-tax-incentives/critical-minerals-production-tax-incentive>.

²⁰ EUROPEAN UNION. Regulation (EU) 2024/1252 of the European Parliament and of the Council of April 11, 2024, establishing a framework for ensuring a secure and sustainable supply of critical raw materials. Official Journal of the European Union, L, 2024/1252, May 3, 2024.

²¹ IREL (Indian Rare Earths Limited), a state-owned enterprise affiliated with the Department of Atomic Energy, had held a legal monopoly on monazite mining since 1950. The Mines and Minerals (Development and Regulation) Amendment Act of March 2025 ended this regime by opening the sector to private enterprise.

regime established under the MMDR Act, calculated *ad valorem* on the average selling price—a state revenue instrument that does not carry an extrafiscal environmental function.

It is interesting to note that Brazil, too, in the context of tax reform and complementary law 214/2025, demonstrates legitimate concern regarding the issue by stipulating, in its Annex XI, a reduction in the tax base for IBS and CBS for “goods and services related to national sovereignty and security, information security, and cybersecurity”²², although it does not directly mention rare earths. These taxes, however, are levied on the consumption chain and serve a revenue-raising function, unlike what should be the case with the IS.²³

There is, therefore, a global trend toward adapting tax instruments to the exploitation of rare earths, recognizing the strategic relevance of these goods for economic development and geopolitics, so as not to undermine or hinder the realization of the positive potential they represent (while not disregarding the harm to the environment and human health). However, this must be supported by explicit legislative justifications, lest these vital inputs be left subject to unnecessary interpretive ambiguities.

6. CONCLUSION

The Selective Tax, as designed by Constitutional Amendment

²² BRAZIL. Complementary Law No. 214, of January 16, 2025. Establishes the Goods and Services Tax, the Goods and Services Contribution, and the Selective Tax. Official Gazette of the Union, Brasília, DF, Jan. 17, 2025.

²³ In the case of Brazil, the definition of a sectoral public policy for critical and strategic minerals depends on the approval of Bill 2780/2024, which establishes the National Policy on Critical and Strategic Minerals (PNMCE). The bill was approved on an urgent basis by the Chamber of Deputies in September 2025 and was awaiting a final vote in the Plenary at the time of this article’s completion. In terms of taxation, the bill provides for an exemption from withholding income tax on remittances abroad related to licenses for technology used in the processing of these minerals (Art. 16), the extension of the benefits of the “Lei do Bem” (Law of Good) to companies in the sector (Art. 17), and the application of the “REIDI” to the mining and processing of critical and strategic minerals (Art. 18).

132/2023 and complementary legislation, is an instrument intended to tax activities harmful to human health and the environment.

When such harm is sufficiently established and no other constitutional values of equivalent weight are involved, burdensome tax intervention tends not to warrant complex tax debates.

The complexity arises when faced with a scenario in which it is constitutionally permissible both to tax an activity due to its harmful effects on the environment and human health and to create tax incentives to encourage the activity because of its strategic importance from an economic, geopolitical, and sovereignty standpoint.

The case of rare earths is a very useful example for exploring this tension.

Brazil holds the world's second-largest reserve of rare earths and produces only a marginal fraction of what it could produce. This asymmetry is the backdrop for a tax decision that the post-reform system has already begun to make—by omitting rare earths from Annex XVII of Complementary Law 214/2025, without explicit justification—but has not concluded with the transparency that the complexity of the choice demands.

Defining the tax treatment of rare earths extraction means choosing between values that the Constitution protects with equal dignity—the environment, human health, technological development, sovereignty over natural resources, and national defense.

The choice that the legislature must make is not dictated by the tax system. It is an economic policy choice that involves taking a stance on which constitutional values the Brazilian state decides to prioritize; currently, that decision remains insufficiently justified.

This stance will inevitably be influenced by the political agenda of the elected government. This is how representative democracy works.

What the legal system requires, in this context, is that this choice be made with explicit justification based on the conflicting constitutional values so that it can be evaluated, challenged, and, if necessary, democratically revised.

Transparency in the justification is a prerequisite for the tax de-

cision regarding rare earths to be, in fact, a well-founded political choice and not merely a regulatory silence, left to be resolved by avoidable interpretive debates.

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