

# The Dangers of the Metal Smelting Plant in Yeraskh (Armenia)

## Mitigating Environmental Transboundary Impact Through International Law

*Nazrin Baghirova and Anar Gojayev*

*“Environmental threats do not respect national borders. Governments have realized that to avert this danger they must notify and consult each other on all major projects under consideration that might have adverse environmental impact across borders.”*

*– opening statement of  
the UNECE’s website*

Although metal production/mining industries are linked to the economic benefits, their activities are significantly resource- and energy-intensive, which means that emit pollutants and greenhouse gases in a way that adversely affects the environment. This IDD Analytic Policy Paper describes the transboundary impact on Azerbaijan caused by a smelting plant located in Yeraskh, Armenia, which is very close to Azerbaijan’s border. It then provides policy recommendations on ways to mitigate the regional environmental hazards deriving from this activity from the point of view of the international law.

What is the definition for “transboundary impact”? According to the Espoo Convention (1991), it means “any impact, not exclusively of a global nature, within an area under the jurisdiction of a Party caused by a proposed activity the physical origin of which is situated wholly or in part within the area under the jurisdiction of another Party.”

*Nazrin Baghirova is a Non-Resident Research Fellow at the Institute for Development and Diplomacy (IDD) of ADA University and a Lecturer at ADA University. She is a former Head Adviser for Strategic Planning and Innovations to the Rector of Azerbaijan State Agricultural University, Chief Policy Adviser to the Ministry of Education of Azerbaijan, and Head of Unit in the Department for Education and Training Policy of Ministry of Agriculture of Azerbaijan. The views and opinions expressed herein are solely those of the author.*

A new, large Armenian-American metal smelting plant is being built in Yeraskh, which is located in the Ararat province of Armenia near the border with Azerbaijan. The investment is in the order of a reported \$70 million and has caused a new wave of concerns—not only by Azerbaijani government but also by 64 foreign and 24 Azerbaijani civil society organizations, which have demanded a cessation of the plant’s construction. The plant is located 800 meters away from Azerbaijan’s Nakhichevan exclave and constitutes a direct ecological threat for Azerbaijan. In this context, Azerbaijan’s Ministry of Ecology and Natural Resources issued a statement (7 June 2023) stating that “as a member of the Espoo Convention, Armenia should have ensured the participation of Azerbaijan and the public in the affected areas in the transboundary environmental impact assessment procedure before starting the said activity.” In its response (14 June 2023), Armenia’s Ministry of Environmental Protection excluded a significant adverse transboundary impact: “the selection of the area, the applied modern technology, and the planned environmental measures will minimize the negative impact on human health and the environment.”

### *Waste and its Environmental Impact*

The Armenian authorities in their response indicate black metal scrap (iron - heavy metal), and the head of the smelting plant is indicating that the plant will produce rebar steel from the black metal scrap. The processing of black metal scrap (iron) to produce rebar (carbon steel) has a great environmental effect on air, water, soil, and energy consumption. For example, research shows that during the processing of scrap metal (iron) or producing steel, blast furnaces emit a high quantity of toxic gaseous as air pollutants, such as carbon dioxide, nitrogen oxide, and sulfur dioxide. The latter contributes to acid rain, which acidifies soils and water, leading to deforestation. In addition, the various solid wastes producing wastewater and slag release such toxic heavy metals as copper, silver, iron, cobalt, and selenium, which can contaminate water sources and harm aquatic life in bodies of water. Finally, various solid waste emerges from iron processing such as dust, mill scale, sludge, and slag, with a lot of iron oxides present in them.

Hence, environmental pollution not only directly threatens the health of people who live primarily near the smelting plants, but also impacts those living hundreds of kilometers away, as the toxic materials emitted travels far, through the air, water streams, and the food chain. This also has a negative impact on the economic development of other sectors such as tourism and agriculture. A collaborative effort of 11 European universities and think tanks that is coordinated by the EU-based Ecologic Institute called the European Union Action to fight Environmental Crime (EFFACE) released a report in 2015 titled “Environmental Crime in Armenia: a Case Study on Mining,” in which it stated that, due of the persistent release of poisonous material into air, water, and soil, “mining-related environmental pollution in Armenia must therefore be considered a threat to peace and security in the South Caucasus.”

It is a general global practice and fundamental way to measure, monitor and improve the environmental impact by calculating the environmental footprint. However, in the case of the Yeraskh plant, it is not easy to calculate this footprint due to a lack of data. This is generally true of the mining industry in the country. According to the aforementioned EFFACE report, “the amount of toxins released into the air, ground, and water is very difficult to assess because the mining companies do not gather and release data. We therefore can only rely on environmental studies that target specific areas in Armenia.”

### *Transboundary Air Pollution Risks and their Environmental Impact*

Hence, scientists in the 1960s found that the causes of the acid rain that was destroying forests, causing fish loss in lakes, and putting entire ecosystems at risk in the Northern Hemisphere, were air pollutants emitted thousands of kilometers away. This is now very well-documented, established science. Therefore, as the Ararat province of Armenia borders Türkiye from the west and Azerbaijan’s Nakhchivan exclave from the south, the transboundary environmental impact on human health from the air pollutants mentioned above caused by the Yeraskh plant is inevitable for its neighboring countries.

The Ministry of Environmental Protection of Armenia states that “the process of casting black metal scrap will be carried out using an induction furnace, which works exclusively with electricity.” So, let’s look into more details about what an “induction furnace” is.

An induction furnace is an electrical furnace in which heat is applied by the induction heating of metal. Electricity is the only energy source for steel melting in the induction furnace. Satyendra Kumar Sarna, an Indian metallurgical expert in the steel industry describes the benefits as follows: “it has no electrodes and electric arcs which allow the production of steel and alloys low in carbon and occluded gasses without any quality problem. It results in low melting losses and alloying elements. It results in high power efficiency and is therefore cost-effective.”

However, the Indian expert goes on to address the two major categories of emissions that can be released. The first, and major, category relates to the charge cleanliness—i.e., rust, dirt, foundry sand, paint, oil, galvanized or soldered metal—all of which are elements that give rise to the emission of dust and fumes (organic or metallic). The second category relates to chemical reactions at high temperatures—i.e., while holding or adjusting the metal composition)—which can give rise to metallurgical fume due to oxidation. Hence, the production emission rate from an induction furnace depends upon the cleanness of charge material. Therefore, for better and efficient operation of melting in an induction furnace, raw material charge must fulfill a bunch of technical criteria. These include high density, metallurgic cleanliness (being free from slag lumps, oxides etc., particularly for direct reduced iron, skull, and ferro alloys); and segregation from harmful ingredients like explosives, closed containers, and evaporative substances.

An additional issue is compliance with the Espoo Convention. Aysel Rzayeva, a representative of the Azerbaijani Ministry of Ecology and Natural Resources explains: the “Espoo Convention does not specify the volume of wastes of the project, while it requires from Party of Origin to engage Affected parties to its environmental decisionmaking process based on the list of activities envisaged in its Annex I. The Espoo Convention sets out relevant transboundary tools for assessing the impacts of the project by exchanging sufficient information about project before starting project implementation and ensuring comments by public of affected parties be provided as well. Identification of impacts and its nature should start with notifying Affected Party: even a low likelihood of impact triggers this obligation to be followed by Party of Origin.”

In addition, although the Espoo Convention does not specify parameters, there is the Aarhus Convention, which does enumerate certain parameters under Annex 1(2) in accordance with Article 6.1(a). Therein, “Installations for the production of pig-iron or steel (primary or secondary fusion) including continuous casting, with a capacity exceeding 2.5 tons per hour; Installations for the processing of ferrous metals” are considered hazardous.

Thus, the main concern of Azerbaijan, as the affected Party, is that there is insufficient data about the quantity, quality, and types of the materials used by the Yeraskh plant to assess the real level of hazard and transboundary impact of the toxins released from its processing activities.

## *Geography, Climate, and Transboundary Waters*

It is difficult to overstate the importance of the Aras river for Azerbaijan. The Yeraskh plant’s location—some 6 kilometers from the river—is thus of great concern for the country, notwithstanding the claim made by Armenia’s Ministry of Environmental Protection, which is not based on publicly-available data or studies, that denies the Yeraskh plant will have a hazardous impact on water resources, given, as Yerevan claims, that its production processes do not foresee any harmful discharge into the water basin.

However, Armenia’s Ministry of Environmental Protection does not take into consideration that even if there is no direct waste flow into the basin, the waste will be collected in the groundwater from that area, which will flow into the waters of the Aras. Hence, the conditions become even more detrimental, especially when there is heavy rain and snow—both are climactic conditions of Ararat province. It is reasonable to expect, therefore, that the constant rains and snow from Ararat province collected in groundwater flowing directly into the Aras river will have an adverse impact, unless waste utilization is properly done.

Although in August 2023 news reports indicated that the Yeraskh plant’s location might be moved slightly (to the adjacent region of Ararat City, which is around 15 kilometers

from the Aras river itself), it would still end up being located at a distance of only (best case) 6 kilometers from the river basin. This therefore sounds more like political damage control campaign rather than an environmental protection decision.

Armenia has been polluting these rivers and damaging their flora and fauna. The EFFACE report mentioned above indicates that the mining industry in Armenia pollutes rivers that cross international borders due to environmentally unsafe mining practices, and that this also negatively affects neighboring countries, namely Georgia and Azerbaijan. It is worth mentioning that one of the challenges for the neighboring countries to hold Armenia accountable for polluting rivers is that Armenia has not ratified the Convention on the Protection and Use of Transboundary Watercourses and International Lakes.

## Recommendations

*Alternative 1: The Armenian government should be made to suffer consequences for causing transboundary environmental pollution to its neighboring countries, be it water, air, or soil pollution according to the international law.*

First, in the case when the offending party has not ratified or signed a relevant convention, but still causing transboundary environmental adverse impact. Hence, there is an international precedent when the party of origin shall be kept accountable and be prohibited from causing transboundary environmental pollution. As Ferhat Aznevi, a member of the Financial Technologies Management Board of the Turkish Bar Association told me, “the starting point of the prohibition of causing serious transboundary environmental pollution is the principle of good neighborliness in Article 74 of the UN Charter. This prohibition also complies with principle 21 of the Stockholm Declaration and principle 2 of the Rio Declaration. It should be noted that the prohibition against causing serious transboundary environmental pollution was first mentioned in 1941 by the international arbitral tribunal assigned to resolve the Trail-Smelter dispute between the United States and Canada. As a result of the proceedings, the court obliged Canada to compensate America for the environmental damage caused by the fumes from the mineral smelting facility of Trail-Smelter, a private enterprise operating within the borders of Canada. In its decision, it was clearly stated that no state shall harm the territory of another state or to the persons and property therein.” This means that Armenia is responsible for the fulfillment of its international obligations concerning the protection of human health and the preservation of the environment, and is liable in accordance with international law, even though it has not ratified the Convention on the Protection and Use of Transboundary Watercourses and International Lakes.

Second, in the case when both offending and impacted party ratified the relevant convention, there are articles for dispute resolution. For example, Article 15 of the Espoo Convention states that “when signing, ratifying, accepting, approving or acceding to this Convention, or at any time thereafter, a Party may declare in writing



to the Depository that for a dispute not resolved in accordance with paragraph 1 of this Article, it accepts one or both of the following means of dispute settlement as compulsory in relation to any Party accepting the same obligations (a) Submission of the dispute to the International Court of Justice; (b) Arbitration in accordance with the procedure set out in Appendix VII.”

Article 2.5 of the same Convention addresses the question of dispute resolution regarding activities not listed under Appendix I (in this case, “metal black scrap,” i.e., the material mentioned by the Ministry of Environmental Protection of Armenia) yet “are likely to cause a significant adverse transboundary impact and thus should be treated as if it or they were so listed.” In such circumstances—I am paraphrasing the General Guidance set forth in Appendix III, the impacted Party may submit that question to an inquiry commission in accordance with the provisions of Appendix IV to advise on the likelihood of significant adverse transboundary impact, unless they agree on another method of settling this question.

*Alternative 2: Armenia should provide access to sufficient information for assessment, access justice to environmental matters.*

Relevant references include:

Articles 5 and 8 of the Aarhus Convention (ratified by Armenia in 2001) mandate that the Parties should “consult each other, assess and monitor the significance of any adverse effect on human health, and provide a contingency plan to the Party Affected” and the problems and risks which they present with the other Parties bordering the same waters.

The Espoo Convention calls upon the Parties of Concern to engage in peaceful cooperation for the prevention of transboundary adverse effects of waste movement. Hence, Article 2.3 states that “the Party of origin shall ensure that in accordance with the provisions of this Convention an environmental impact assessment is undertaken prior to a decision to authorize or undertake a proposed activity listed in Appendix I that is likely to cause a significant adverse transboundary impact.”

Moreover, Article 3.1 of the Espoo Convention demands that Armenia notify Azerbaijan as soon as possible “for a proposed activity listed in Appendix I that is likely to cause a significant adverse transboundary impact, [Armenia], for the purposes of ensuring adequate and effective consultations under Article 5, notify any Party which it considers may be an affected Party as early as possible and no later than when informing its own public about that proposed activity.”

Additionally, Article 3.7 of the Espoo Convention states that “when a Party considers that it would be affected by a significant adverse transboundary impact [Azerbaijan] of a proposed activity listed in Appendix I, and when no notification has taken place in

accordance with paragraph 1 of this Article, the concerned Parties shall, at the request of the affected Party, exchange sufficient information for the purposes of holding discussions on whether there is likely to be a significant adverse transboundary impact.”

Lastly, the Armenian government should provide a contingency plan to the government of Azerbaijan which indicates the prevention and measures of minimization of the transboundary effects of Industrial Accidents for the “parties of concern.” Consider Article 6.9 of Annex IV, which states that the “identification, evaluation, monitoring, and auditing of hazardous activities and the carrying out of inspections should be conducted by the Parties, authorities, or by joint efforts as a prevention measure of accidents.” Finally, Annex VII titled “Emergency Prepared Measures Pursuant to Article 8” requires Armenia to provide to on-site personnel of Azerbaijan a “contingency plan with the details of technical and organizational procedures for response in the event of industrial accidents capable of having transboundary effects and to prevent and minimize the effects on people and environment.”

Therefore, Armenia should conduct a transboundary environmental impact assessment and start step by step consultations with Azerbaijan, based on the requirements of international law and the conventions it has ratified. Instituting bilateral cooperation in this area will help to promote regional economic development, advance the peace process, and encourage reconciliation.