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# Battle for Cleaner Air: Tuzla and Bitola

Article 1  
Article 2  
**Article 3**  
Article 4



**“We are forced  
to fight the air  
pollution at the  
court.”**

– Personal Interview.

14. September 2021.

October 2021, Sarajevo

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# Cleaner air or energy security?

Bosnia and Herzegovina (BiH) and North Macedonia have traditionally been rich in resources, with coal and lignite serving as main energy sources since the industrialization of the countries. In both countries, large part of their electricity production has been and still is relying on fossil fuels, produced through the several thermal power plants as the energy transition process is yet to minimize this dependency. The biggest capacities are located near the city of Bitola in North Macedonia, and near the city of Tuzla in BiH. Considering that the thermal power plants are in their vicinity, among other industrial facilities, both Bitola and Tuzla have been thriving as cities of industry and commerce. They have been respectively taking place of important regional centers, second to the countries' capitals.

However, the cost that the cities have been paying, especially in the recent years, is high. The air pollution is causing premature deaths and serious long-term health problems for the citizens. The pollution during winter months is sky-rocketing and the concentration of PM10 and PM2.5 in both Tuzla and Bitola have sometimes been even higher than the ones measured in Skopje or Sarajevo<sup>1</sup>. The public is torn between defending the benefits of the industrial development, especially the employment opportunities they bring, and recognizing the harm they cause to the environment and the air quality<sup>2</sup>. Numerous studies have shown that the thermal power plants are a major factor contributing to the air pollution<sup>3</sup> and the public debates on their impact over the air quality in Tuzla and Bitola are ongoing and heating up annually, as the heating season starts.

Considering the recent developments in North Macedonia regarding the energy crisis<sup>4</sup>, the issue with the air pollution and the thermal power plants remains tightly connected with the discussions on energy security. Officials often claim they are combating the air pollution with all their efforts. Nonetheless, BiH and North Macedonia are not ready at all to consider shutting down or reducing the operation of the existing electricity production facilities, especially not the crucial ones such as the ones in Bitola and Tuzla. Just on the contrary, the thermal power plant in Tuzla is planning its expansion through Chinese investments, while the thermal power plant in Bitola is one sole pillar keeping the transitioning energy system of North Macedonia afloat. This of course is putting Tuzla and Bitola, and their local battle for cleaner air, in a tough position across

1 Tikveša, Rijad. *Personal Interview*. August 2021.

2 Danova, Elena. *Personal Interview*. August 2021.

3 Kalinski, V., 2021. *РЕК Битола со најголеми емисии на сулфур диоксид на Балканот*. [online] Радио Слободна Европа. Available at: <https://www.slobodnaevropa.mk/> [Accessed 12 September 2021].

4 Marušić, S., 2021. *North Macedonia Declares 'State of Crisis' Over Energy*. [online] Balkan Insight. Available at: <https://balkaninsight.com/2021/11/10/north-macedonia-declares-state-of-crisis-over-energy/> [Accessed 11 November 2021]

various fields, having to choose between good air quality and securing the national electricity production.

The air pollution in Tuzla, as the second most polluted city in Europe, is affecting a large number of citizens, just as in Bitola. While it affects the population of the cities as a whole, it is particularly damaging for the vulnerable groups such as children, pregnant women, elderly and the chronically ill. Activists estimate that almost a fifth of all the premature deaths in Tuzla is a result of polluted air. The Center for Lung Diseases at the Tuzla Hospital receives around 20.000 people annually due to severe lung issues, from bronchitis to asthma. In addition to this, there were around 300 patients with lung cancer at the end of 2019, which is more than the national average<sup>5</sup> of lung cancer patients per capita.

The situation in the North Macedonia city of Bitola is very similar. Therefore, it is not a surprise that the environmental activists speak up against the thermal power plants and advocate for their modernization, transformation or closure<sup>6</sup>. However, as Professor Majda Tešanović from the University of Tuzla points out, any action against them for the legitimate sake of improving the air quality and preventing lung issues, would hinder the energy security of North Macedonia and BiH, adding to the complexity of the problem<sup>7</sup>. The power plant in Tuzla is the largest electricity production facility in BiH, which makes it vital for the national energy system<sup>8</sup>, and REK “Bitola” has the same importance for the electricity production in North Macedonia<sup>9</sup>.

This specific connection between the air pollution in Bitola and Tuzla and the national energy policies, is a clear indicator of flawed actions for combating air pollution and providing good air quality, to say the least - especially when compared to other cities in North Macedonia and BiH. Experts say that the tough position the cities are placed in, between fighting for clean air locally and securing the national electricity production, is also an indicator for flawed national energy strategies, flawed national environmental protection strategies and lack of better and more specific plans for guaranteeing breathable air. Professor Majda Tešanović<sup>10</sup> mentions the fact that the power plant in Tuzla and the industrial capacities in the city are just one of the three major contributors to the air pollution. Rijad Tikveša, the President of the “Ekotim” environmental organization agrees that the pollution comes from a combination of polluters<sup>11</sup>, yet the contribution of the thermal power plants should not be underestimated.

In addition to the industry in Tuzla and its region, other large sources of air pollution are detected primarily in the individual furnaces for heating during winter months, as well as the traffic in the city. Bitola has been facing the same issues for years as well, and statistics confirm that the pollution in the city comes from various sources alongside the REK “Bitola”<sup>12</sup> thermal power plant. No matter how these facts are presented and discussed, bringing them forward mostly works in favor of the thermal power plants and their defense. The impact of other polluters on air quality, alongside the significance of the thermal power plants for the energy systems, makes the situation similar to a game of *truth or dare* where you can only choose one: clean air or energy security.

5 Rujević, N., 2021. *Zrak boje ugljena* | DW. [online] DW.COM. Available at: <https://www.dw.com/hr/zrak-boje-ugljena/a-56599982> [Accessed 16 October 2021].

6 Tešanović, Majda. *Personal Interview*. October 2021.

7 Ibid.

8 Bankwatch. 2021. *The energy sector in Bosnia and Herzegovina - Bankwatch*. [online] Available at: <https://bankwatch.org/beyond-coal/the-energy-sector-in-bosnia-and-herzegovina> [Accessed 10 November 2021].

9 Marušić, S., 2021. *North Macedonia Declares 'State of Crisis' Over Energy*. [online] Balkan Insight. Available at: <https://balkaninsight.com/2021/11/10/north-macedonia-declares-state-of-crisis-over-energy/> [Accessed 11 November 2021]

10 Tešanović, Majda. *Personal Interview*. October 2021.

11 Tikveša, Rijad. *Personal Interview*. August 2021.

12 Dimovska, M., 2018. *Assessing Health Impact of Air Pollution in Macedonian Cities*. *Biomedical Journal of Scientific & Technical Research*, 10(1).

# The battle for cleaner air taken to the courts

There are few reasons why Tuzla and Bitola are similar and comparable, aside from the fact that the cities are hosts to the industrial facilities and thermal power plants. Air pollution in these two cities is tightly connected to the national energy policies, when compared to other cities in North Macedonia and BiH, making them very much alike. These thermal power plants remain the main pillars of the energy systems of BiH and North Macedonia, which then makes the air pollution issue that more complex to solve, even if it is a known fact that it causes lung complications. Experts do agree that advocating for air pollution solutions in Bitola or Tuzla quite often implies jeopardizing the energy security of the both countries, especially in a period of energy crisis and spiked energy prices across all of Europe<sup>13</sup>.

Nevertheless, this should not be an excuse - the policy-makers are in power for the purpose of solving such puzzles instead of making compromises with people's health. This brings us to another common characteristic uniting Tuzla and Bitola: the ways in which the environmental activists are fighting the battle for cleaner air in both cities - through demanding justice, quite literally. The environmental activists have been filing lawsuits against the thermal power plants and the responsible governing bodies. The initial lawsuits have been filed in accordance with the local legislation, with the aim of getting justice for the polluted air and endangerment of public health, creating a precedent for the national court systems. Mr. Rijad Tikveša, President of "Ekotim"<sup>14</sup> is one of the frontrunners in the lawsuits against the power plant in Tuzla. He and his team are determined to stop the expansion of the plant to another bloc using the Chinese investment, or at least to achieve strict environmental protection standards that BiH should comply with as part of the Energy Community Treaty.

The legal battle of "Ekotim" and Mr. Tikveša against the pollution the power plant in Tuzla causes has been in the process for years, starting back in 2014. Since then, series of complaints and lawsuits challenging the permits granted for the expansion of the power plant have been filed. While authorities defend themselves against the charges, activists estimate that almost a fifth of all premature deaths in Tuzla are the result of the polluted air. The demands are clear: to reassess the environmental impact over the air quality and impose strict compliance with the international and national standards. The situation has been causing wide public and media interest on the issue. The process has is not finished yet, even after years of filing, and Mr. Tikveša is certain that, in the end, justice will prevail and the battle for cleaner air in Tuzla will result in a legal victory. Still, the Chinese investment in the Tuzla power plant continues to be promoted as a

<sup>13</sup> Personal Interview. 24. September 2021.

<sup>14</sup> Ekotim.net. 2021. *Tužbe i žalbe protiv planiranih novih termoelektrana na uglj u BiH se gomilaju*. [online] Available at: <http://ekotim.net/bs/novosti/klimatske-promjene/359-tuzbe-i-zalbe-protiv-planiranih-novih-termoelektrana-na-ugalj-u-bih-se-gomilaju> [Accessed 18 September 2021].

salvation, the best option for securing electricity production, and a new dawn for the thermal power plant as the new unit is scheduled to start operating in 2025.

The authorities have been promising the highest European standards and excellent engineering solutions, similar to those in Germany and Poland. Yet, the activists remain skeptical and continue to point out the potential irreversible damage the expansion might cause to the air and the public health in Tuzla. In Bitola, similar to Tuzla, the activists have filed charges against the REK “Bitola” thermal power plant for non-compliance with the environmental protection laws, specifically aimed at the directors of the company for not respecting the standards and allowing toxic ash to be dumped out in the open space. As a result of improper waste treatment in the period between 2015 and 2017, an area of over 50.000m<sup>2</sup> in the region of Bitola was covered in toxic ash that had come from the thermal power plant<sup>15</sup>.

After testing the components of the ash, it was established that it contained sulfur dioxide, nitrogen dioxide and heavy metals that cause severe cardiovascular and respiratory issues. Witnesses from the villages in close proximity to REK “Bitola” claimed that at times most of their yards and other outside areas have been covered in the toxic ash. In the 2020 report by the CEE Bankwatch Network and the Centre for Research on Energy and Clean Air (CREA) in cooperation with the “Eko-svest” environmental organization it was concluded that more than 300 lives would have been saved if the air pollution had been stopped or prevented<sup>16</sup>. The case against the managers of the thermal power plant in Bitola is still ongoing, while the authorities have demanded changes and modernization of the filters. However, a closure is not an option neither for the power plant in Bitola, nor for the one in Tuzla, as they remain pillars to the national energy security of BiH and North Macedonia.

15 Jorm.gov.mk. 2019. Поднесено обвинение за загадување на животната средина од РЕК Битола – ЈАВНО ОБВИНИТЕЛСТВО НА РЕПУБЛИКА СЕВЕРНА МАКЕДОНИЈА. [online] Available at: <https://jorm.gov.mk/podneseno-obvinenie-za-zagaduvane-na/> [Accessed 8 October 2021].

16 Радио МОФ. 2021. РЕК Битола лани емитирала повеќе сулфур диоксид од сите електрани во Германија. [online] Available at: <https://www.radiomof.mk/rek-bitola-lani-emitirala-povekje-sulfur-dioksid-od-site-elektrani-vo-germanija/> [Accessed 7 November 2021].



# Cleaner air through raising awareness and educational activities

Another major contributor to the air pollution, aside from the thermal power plants, are the household heating solutions. Concerning the heating solution during winter months, the situation in Tuzla and Bitola is similar to the one in Skopje and Sarajevo. The outdated furnaces used for domestic heating in many of households rely on fossil fuels for combustion, mainly firewood or coal that contain high percentages of sulfur<sup>17</sup>. An additional problem is that, due to the lack of thermal insulation, most individual domestic heating solutions use large amounts of energy, thus worsening the air pollution. Nevertheless, energy efficiency is another set of issues and not a subject of this discussion.

In Bitola, the local eco action plan<sup>18</sup>, adopted in 2016, describes the objectives and the measures for cleaner air - with a focus on raising awareness on what worsens the air pollution. Furthermore, it advises the citizens to use the public transportation and offers advice on replacing their domestic heating solutions, along with some financial incentives. The details of the incentives are currently unavailable on the official website of the Municipality of Bitola. However, a call for preparing a concrete study for environmental protection, which would include measures for air quality protection, is currently open in the Municipality of Bitola<sup>19</sup>. Since the local elections in North Macedonia, held in October 2021, caused changes in the local governance in Bitola, the citizens now expect better solutions and concrete plans and measures for fighting the air pollution as the winter is coming.

The City of Tuzla is trying to contribute to the resolution of the air pollution problem through a project that includes co-financing the replacement of individual heating furnaces and advocating for different, more eco-friendly heating solutions, by procurement and installation of heat pumps<sup>20</sup>. However, the lack of information available to the citizens about the benefits of installing the heat pumps and using the subsidies from this measure proved to have an impact on the interest and the number of applicants. An additional problem was the eligibility criteria for the subsidies. They turned out to be strict and acceptable only to a low number of citizens. All of these circumstances resulted in a relatively small number of applications for co-financing and replacement of old furnaces, which is why this measure was assessed only as partially successful in

17 Dimovska, M., 2018. Assessing Health Impact of Air Pollution in Macedonian Cities. *Biomedical Journal of Scientific & Technical Research*, 10(1).

18 Bitola.gov.mk. 2021. *Eco Action Plan*. [online] Available at: [http://www.bitola.gov.mk/wordpress/wp-content/uploads/2018/02/Lokalen\\_Ekoloski\\_akcionen\\_plan.pdf](http://www.bitola.gov.mk/wordpress/wp-content/uploads/2018/02/Lokalen_Ekoloski_akcionen_plan.pdf) [Accessed 5 September 2021].

19 Bitola.gov.mk. 2021. *Municipality of Bitola*. [online] Available at: [http://www.bitola.gov.mk/wordpress/wp-content/uploads/2018/02/Lokalen\\_Ekoloski\\_akcionen\\_plan.pdf](http://www.bitola.gov.mk/wordpress/wp-content/uploads/2018/02/Lokalen_Ekoloski_akcionen_plan.pdf) [Accessed 22 September 2021].

20 Terzić, E., 2021. *TUZLA: Subvencije za nabavku kamina na pelet, toplotnih pumpi, utopljavanje objekata... - Centar za ekologiju i energiju*. [online] Centar za ekologiju i energiju. Available at: <http://ekologija.ba/2020/09/18/tuzla-subvencije-za-nabavku-kamina-na-pelet-toplotnih-pumpi-utopljavanje-objekata/> [Accessed 7 October 2021].

2019. Due to these factors, in February 2020 the City of Tuzla made significant changes in the conditions, criteria and procedures for allocating the funds for the co-financing measure, aimed at reducing the air pollution in Tuzla. Today, according to the city officials<sup>21</sup>, this measure is much more accessible to the citizens and the interest is growing.

With relation to this, environmental activists from Tuzla say that it is necessary to work on awareness and visibility of the measures for the air pollution reduction. In this regard, the Center for Ecology and Energy, a prominent environmental organization from Tuzla, conducted a project for raising the awareness of the citizens on air pollution through education<sup>22</sup>. The project was titled “Edukacijom do smanjenja zagađenja zraka u Tuzli” or “Air pollution reduction in Tuzla through education” and it was conducted in the autumn and winter months of 2020, from 1 September 2020 until 31 December 2020. The Center for Ecology and Energy<sup>23</sup> representatives said that this educational project was successful and that it showed that the measures for fighting air pollution are more effective if combined with educational activities. The objectives of the project for awareness raising and motivating the citizen to get more interested and involved were reached through educational and informational activities. In addition to this, several meetings were organized and the organizer distributed promotional material both on sight and via media.

The direct contacts with the citizens from many local communities helped in raising awareness on the importance of using the benefits of the measures for combating air pollution by the City of Tuzla. In the case of Bitola, some projects on raising awareness and education have been proposed by the local environmental activists. However nothing specific has been done in recent years. In Tuzla, making these ideas concrete was useful for raising awareness on the importance of using heat pumps and the district heating system as solutions for domestic heating, and this can be a good example for Bitola as well. The project was also supported by the City of Tuzla and over 60.000 citizens have been reached from 40 local communities, through promotional material and media coverage.

Additionally, 100 citizens have been trained in five thematic meetings and individual interviews. They have been encouraged to apply for public calls aimed at co-financing the replacement of domestic pollution-causing heating solutions, thus reducing the air pollution<sup>24</sup>. The success of this project shows that educational activities and informative meetings are some of the ways the environmental activists and the organizations can use their capacities to help air pollution reduction, even in cities such as Bitola and Tuzla where heavy industry is located and solutions seem hard to find. Nevertheless, the success indeed depends on the kind of measures local authorities put forward and their collaboration with the local activists.

21 Grad.tuzla.ba. 2021. *Grad Tuzla*. [online] Available at: <https://grad.tuzla.ba/sluzba-za-prostorno-uređenje-i-zastit-okoline/> [Accessed 5 September 2021].

22 Terzić, E., 2021. *Edukacijom do smanjenja zagađenja zraka u Tuzli - Centar za ekologiju i energiju*. [online] Centar za ekologiju i energiju. Available at: <http://ekologija.ba/2020/09/18/edukacijom-do-smanjenja-zagadjenja-zraka-u-tuzli/> [Accessed 12 September 2021].

23 *Personal Interview*. 14 September 2021.

24 Terzić, E., 2021. *Edukacijom do smanjenja zagađenja zraka u Tuzli - Centar za ekologiju i energiju*. [online] Centar za ekologiju i energiju. Available at: <http://ekologija.ba/2020/09/18/edukacijom-do-smanjenja-zagadjenja-zraka-u-tuzli/> [Accessed 12 September 2021].

As the winter is fast approaching, everyone hopes the air pollution will not be as severe as the previous years. And yet, many are hoping that the thermal power plants polluting the air will also continue operating to provide electricity, which again is proving the situation regarding the air pollution in Bitola and Tuzla is a tough puzzle. Only time will tell if the educational activities or the lawsuits against the thermal power plants will have more impact or something entirely different will determine the battle for cleaner air. What is certain is that once the countries are pressured by the Energy Community to fully respect the Treaty and the obligations related to the implementation of environmental impact assessments<sup>25</sup>, the portion of the air pollution caused by thermal power plants will hopefully be gone for good.

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25 Personal Interview. 14. September 2021.

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