INITIAL IMPACT OF NEW BOR COPPER SMELTER ON AIR QUALITY

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The concept

- MANDATE
- About the SEPA in the 2016.
- SEPA ACTIVITIES IN THE AREA OF AIR QUALITY – MONITORING AND ASSESSMENT
- SO₂ in Bor - historical overview
- INITIAL IMPACT OF NEW BOR COPPER SMELTER ON AIR QUALITY
- SO₂ in Europe and Serbia
National regulations defining the monitoring and assessment of air quality — MANDATE

- Law on Ministries
  ("Off. Gazette RS" No. 44/14)

- Law on Air Protection
  ("Off. Gazette RS" No. 36/09, 10/13)

- Regulation for air quality monitoring and air quality requirements
  ("Off. Gazette RS" No. 11/10, 75/10, 63/13)

- Regulation on the establishment of zones and agglomerations
  ("Off. Gazette RS " No. 58/11, 98/12)

- Regulation on the establishment of programs for air quality control in national network ("Off. Gazette RS " No. 58/11)
Where are all implemented activities related air quality.
SEPA ACTIVITIES IN THE AREA OF AIR QUALITY – MONITORING AND ASSESSMENT

State AAQM network

Annual Report on the state of AQ with the official assessment of AQ in the Republic of Serbia, available on the www.sepa.gov.rs
The earlier conclusion .... ON AIR QUALITY IN SERBIA DOMINANT IMPACT HAVE PM.... EXEPT BOR WHERE SO2 ARE DOMINANT
SO$_2$ in AQ monitoring and assessment

The state of air quality in Bor is a subject of SEPA interest since the establishment.

Data of Institute RiM and SEPA AAQM allow historical overview.
BOR area SO₂ in AQ monitoring and assessment

AAQMS in Bor area

A special addition to the national data management system adapted to the operational team in TIR-Bor
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Hourly and daily concentrations $SO_2$ at AAQMS BOR_Gradsli Park in period 1 Jan 2015 - 24 May 2016
Empirical cumulative distribution of daily SO$_2$ concentrations at the site BOR_Gradski Park in period 2010-2014 and period of working only new smelter, Nov 2015 – May 2016.
In the period of working the new smelter is 4 times less chance of occurrence daily LV.

The double exceeding LV can be expected 7 times less than before the start of working only a new smelter.

In the case of a triple exceeding LV reduction of the probability of occurrence is even higher and is even 38 times.

Ten times exceeding LV were recorded in the previous period. In terms of working only new smelter such cases should not be expect more.
Although only the new smelter worked since the beginning of November 2015, the annual concentration of SO2 in the AAQMS Bor_Gradski Park is significantly lower than in previous years; 2014 it was 246 µg/m³ and in 2015 it was 145 µg/m³.

In the period Jan–May 2016, SO2 concentrations have dropped to 60 µg/m³.

Annual concentration of SO2 at the site BOR_Gradski Park and percentage of days during the year exceeding daily LV in the period 1990-2015.
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... In relation to a set of data since 1976 changes seem convincing

Annual concentration of SO2 at the site BOR_Gradski Park and percentage of days during the year exceeding daily LV in the period 1976-2015.
CONCLUSION

The initial impact of new copper smelter in Bor on air quality in the city is very encouraging.

Assessment of the state of air quality in Bor was performed compared to the standard and compared to the average state before activating only a new smelter which is represented in several years period 2010 – 2014.

During the period of operation of only a new smelter, Nov 2015 - May 2016, there were the exceedances of limit values of daily concentrations of SO2, which indicates the need to continue actions to improve air quality in Bor.

However, an analysis of data from the period when it was only a new smelter, Nov 2015 - May 2016, and the period 2010 – 2014, indicates a decrease in the frequency and intensity of daily exceedances of LV for SO2 in Bor; 4 TIMES is rarer exceeding LV (125 µg/m3), 7 TIMES is rarer exceeding double values of LV (250 µg/m3) and for a 38 times rarer occurrence exceeding 3 x LV (375 µg/m3).

Reliability of these estimates can be increased by analyzing a longer period of work only a new smelter. The authors will that fact bear in mind in the coming period when such analysis can be repeated.
REFERENCES


THANK YOU for your attention!