



# **Long-term strategy for environmental protection**

**Information for external stakeholders**





In the context of complying with the obligations arising from the Paris Agreement, the European Union has set itself the ambitious goal of becoming the first climate-neutral continent by 2050. In other words, being carbon neutral, i.e. produce only the amount of CO<sub>2</sub> that can be captured by natural and artificial traps.

It is only a matter of course that our company, as one of the largest chemical companies in Slovakia and Europe, is interested in being part of the collective fulfillment of this goal and contributing to its fulfillment with its partial measures in the long term. This commitment places considerable demands on our company in relation to reducing the amount of greenhouse gas emissions.

Since 1990, we have reduced our CO<sub>2e</sub> emissions by almost 70%. Despite this enormous reduction, we have not stopped being active in our efforts to reduce the carbon load on the environment through our production, we are purposefully preparing for decarbonization and we approach the European Union's commitment responsibly and with due commitment.

Our main planned activity is the decarbonization of ammonia production, through investments in renewable energy sources such as a wind park and a photovoltaic power plant. The electrical energy from these sources will be used to produce green hydrogen by electrolysis of water. Other activities are the decarbonization of own energy consumption by installing photovoltaic panels on the roofs of buildings and the reduction of greenhouse gas emissions during the production of nitric acid.

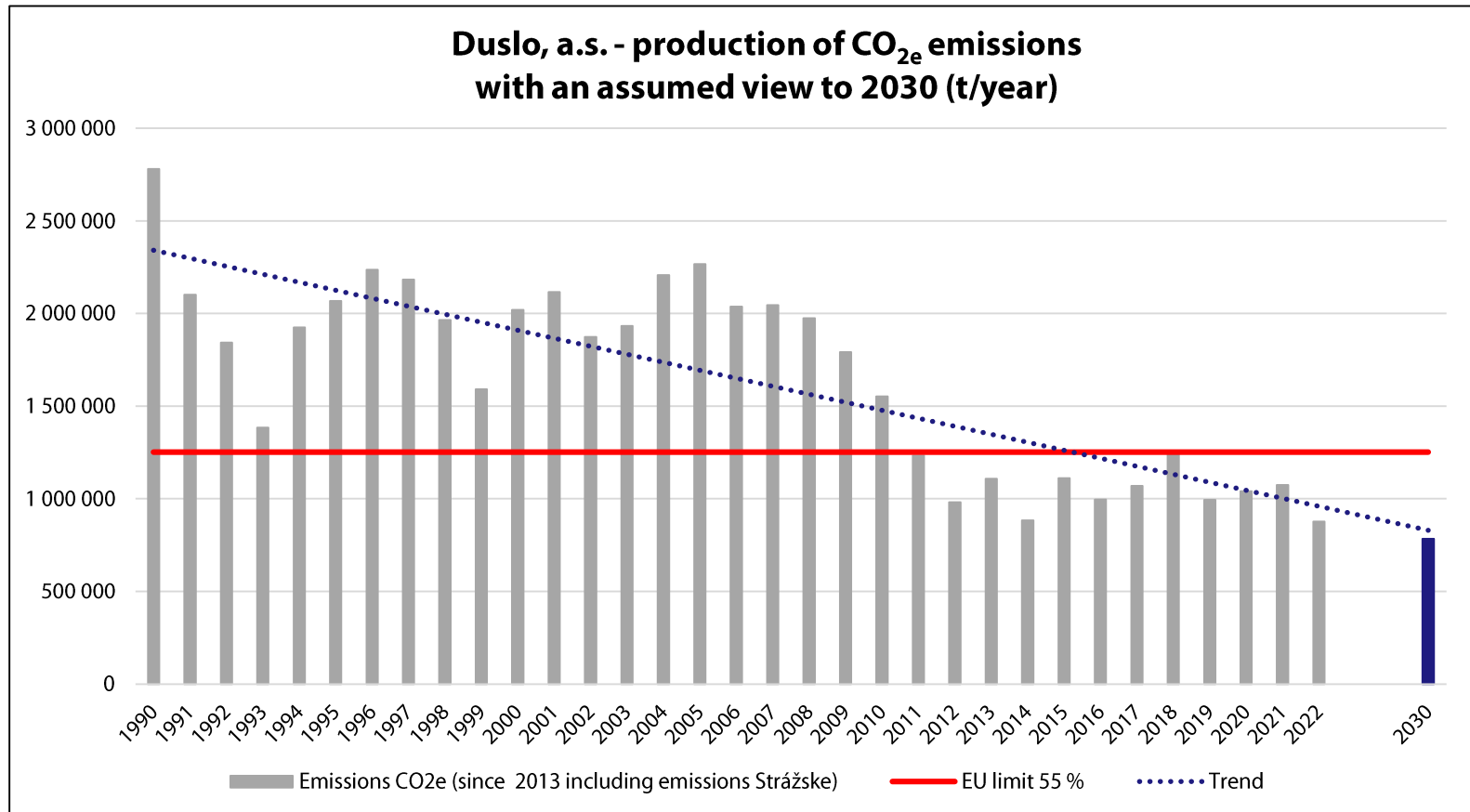
As active as we are in climate protection, we also approach air protection, the use of water resources and the reduction of noise pollution from production activities. To protect air quality, we invest in modern separation equipment. In the protection of water resources, we base ourselves on the analysis of water stress, and despite the fact that our workplaces are located in a zone with a medium-low risk of stress and do not require a special approach to the collection and consumption of surface water, we have established procedures for its repeated use in production activities.

Our workplaces are not located in protected areas, so production activities do not threaten NATURA 2000 protected areas or areas protected by national legislation.

Ing. Petr Bláha  
Vice chairman of the board and General director of Duslo, a.s.

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# Reduction of greenhouse gas emissions 1990-2022 with a view to 2030



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EU target - **55%** reduction of EU greenhouse gas emissions by 2030 compared to 1990.

Duslo, a. s. between 1990 and 2022, it reduced CO<sub>2e</sub> emissions by **68.76%**.

Slovakia's goal – **43%** reduction in Slovakia's greenhouse gas emissions by 2030 in the EU-ETS sectors compared to 2005.

Duslo, a. s. between 2005 and 2022, it reduced CO<sub>2e</sub> emissions by **61.66%**.

The requirement to reduce CO<sub>2e</sub> emissions in accordance with the EU/SR target was already met after 2010. The main measures were:

- replacing coal as an energy carrier with natural gas (1998-2007),
- installation of secondary N<sub>2</sub>O reduction during nitric acid production (2010),
- construction of the new Ammonia plant - Čpavok 4 operation, including the termination of the previous ammonia plant - Čpavok 3 operation after 2018.

The graph also shows the projected decrease in CO<sub>2e</sub> emissions until 2030, which should be achieved by the implementation of decarbonization projects such as:

- construction of renewable sources of electricity (photovoltaic and wind power plants)
- use of excess steam for the production of electricity
- tertiary reduction of N<sub>2</sub>O in the production of nitric acid

Our company plans to invest considerable financial resources in decarbonization activities. For example, for the construction of a photovoltaic power plant and a wind power plant, resources in the amount of approx. 91 mil. € (source: EIA intention).

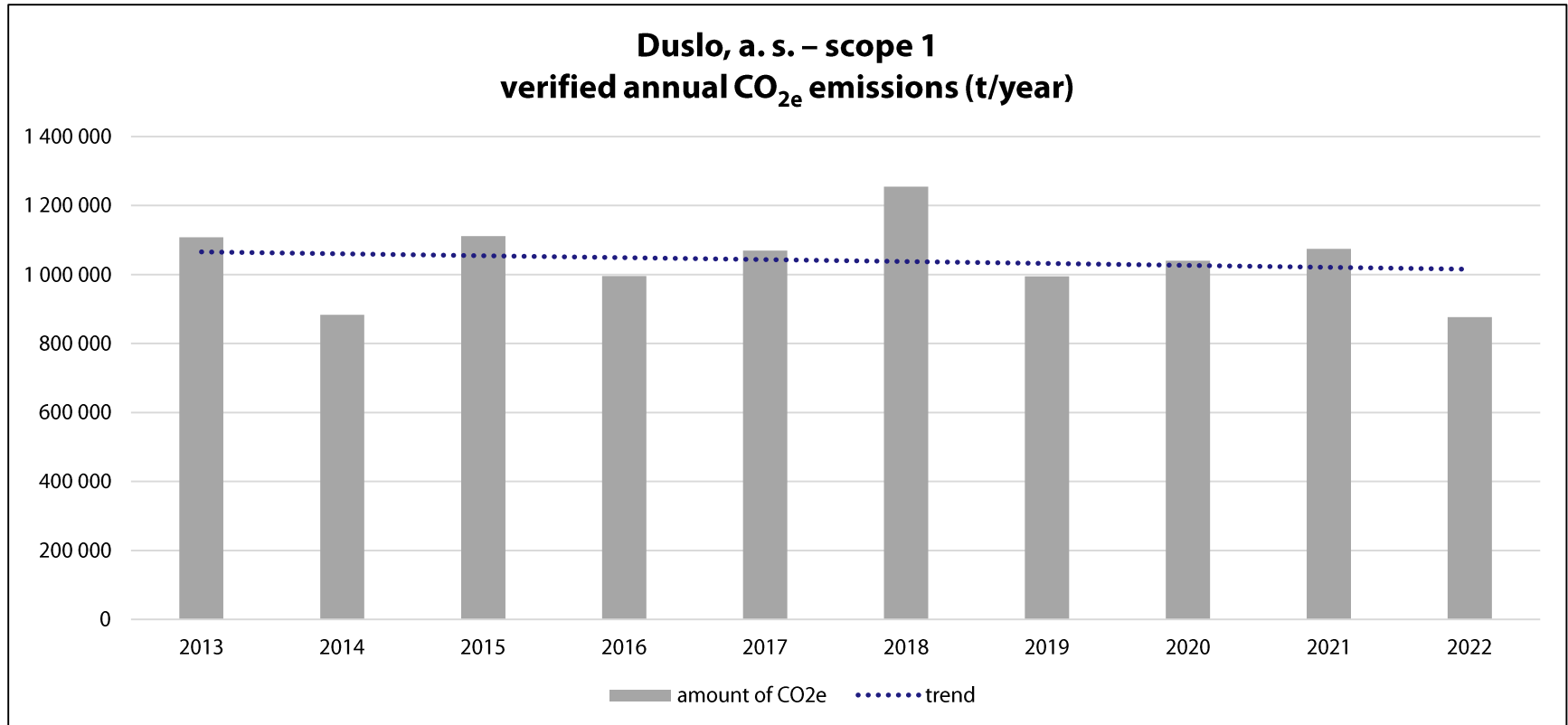
# A vision of future decarbonization activities 2030-2050

Duslo, a.s. works within the set vision and goal of participating in the achievement of Green Deal tasks. also with the following theoretical options, the implementation of which could lead to a reduction in greenhouse gas emissions from one's own activity:

- decarbonization of the energy sector - e.g. further construction of renewable energy sources
- decarbonization of ammonia production - the possibilities of using CCS/CCU methods, or the use of hydrogen that does not come from fossil fuels, are being explored



# Greenhouse gas emissions



Production of greenhouse gas emissions from own activity (scope 1) has a stable character.

In 2022, the company purchased electricity for its own consumption in an amount equivalent to 39,822 t of CO<sub>2e</sub> (scope 2).

# Devices used to reduce pollutant emissions

## Used separation devices for dust

- fabric filter
- cyclone separator
- washing system

## Used separation devices for VOC, NH3

- safety gas burner
- keeping reservoirs under a nitrogen atmosphere and removing emissions for incineration in order to eliminate emissions

## Odor elimination devices used

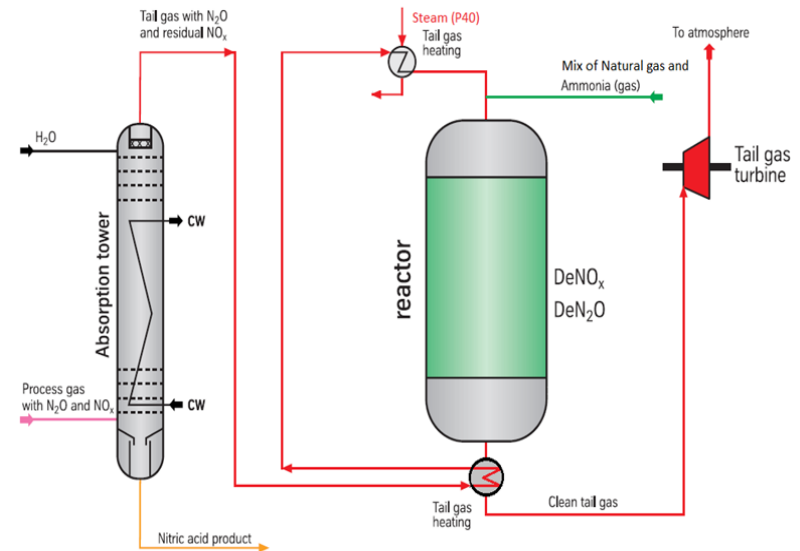
- safety gas burner
- keeping reservoirs under a nitrogen atmosphere
- removal of emissions for burning in order to eliminate odor emissions

## Used equipment to reduce NO<sub>x</sub> emissions

- tertiary reduction

## Used separation equipment for heavy metals, SO<sub>2</sub>

- absorption column (spray tower)



Picture: tertiary reduction of NO<sub>x</sub>

## Measures to reduce noise emissions

### When reducing risks from noise exposure, particular attention is paid to:

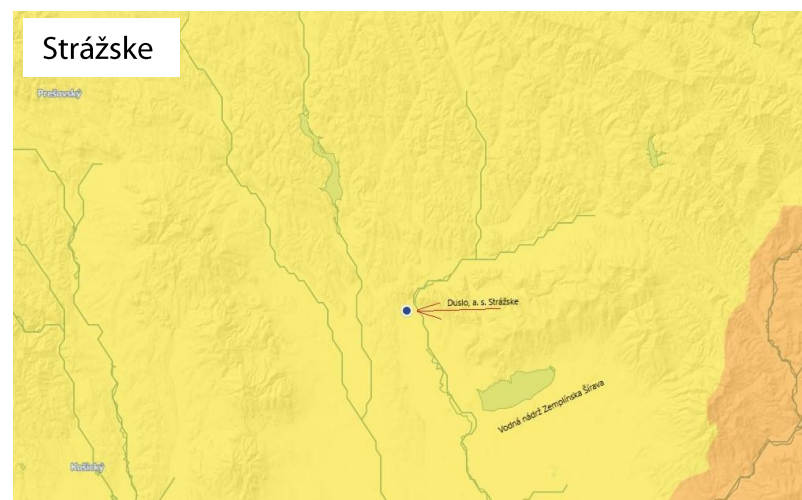
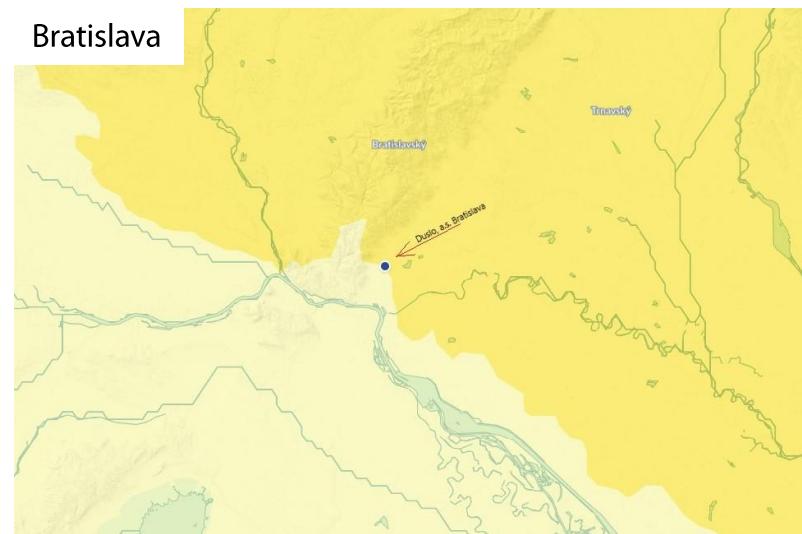
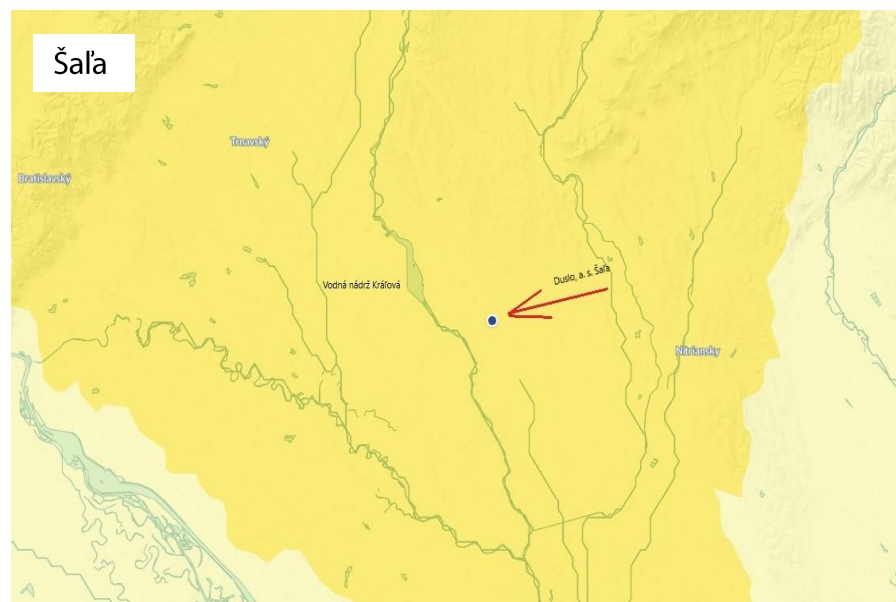
- selection of suitable work equipment (with as little noise emissions as possible)
- construction and spatial solutions for jobs
- reduction of noise by technical means (covers of devices with high noise emissions)
- appropriate methods of maintenance of work equipment
- practical training of employees focused on correct handling of work equipment
- work organization aimed at noise reduction
  - by limiting the duration of noise exposure
  - suitable work schedule with rest breaks
- allocation of appropriate PPE (hearing protectors) with suitable attenuation characteristics



# The location of workplaces in relation to the territory with the occurrence of water stress

Source: <https://www.wri.org/applications/aqueduct/water-risk-atlas>

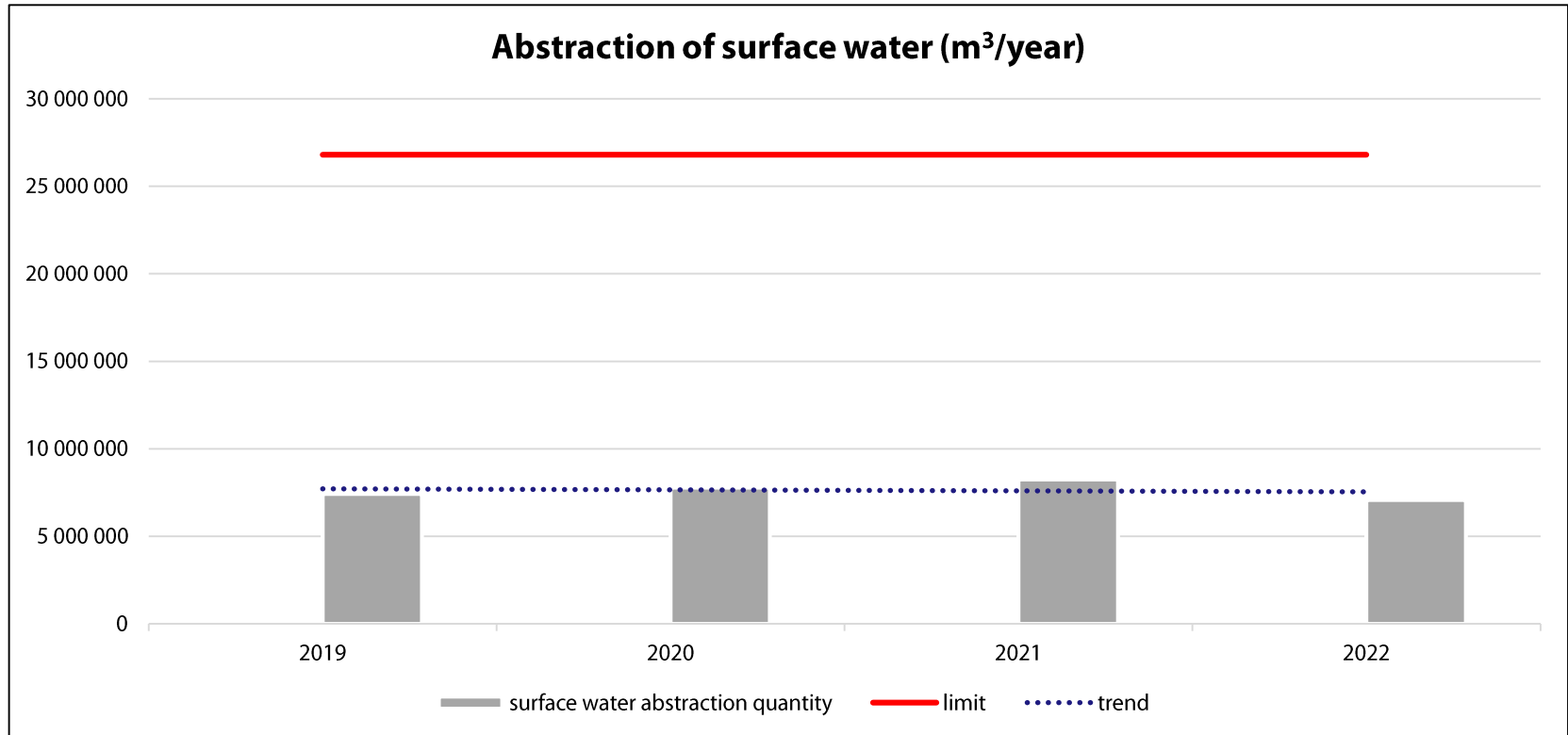
All workplaces Duslo, a.s. are located in a zone with a moderately low risk of water stress.



## Overall Water Risk



# Consumption of surface water for technological purposes



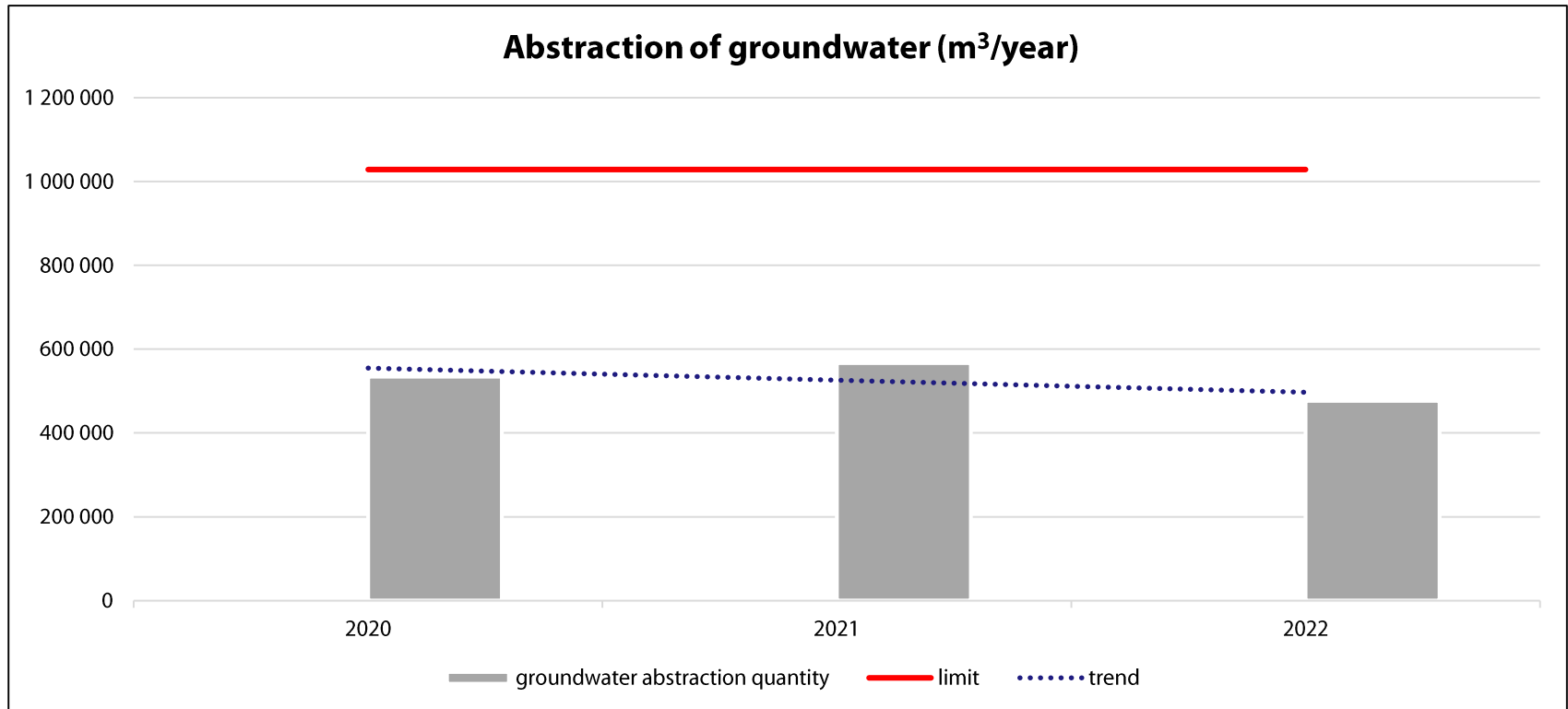
The company is authorized by the relevant state authorities to withdraw surface water from river Váh for technological purposes, in the amount of 26,805,600 m<sup>3</sup>/year, while our average annual consumption at the Šaľa workplace is at the level of 28% of the permitted value.

Water consumption for technological purposes has a stable character.

Water consumption is measured with a designated meter and the consumption data is sent to the state authority every year.

After wastewater treatment in the company's treatment plant, which meets the requirements of the best available technology (BAT), approximately 2/3 of the annual water volume is returned to the Váh recipient.

# Groundwater consumption for drinking purposes



Duslo, a.s., Šaľa site has a set limit of 1,028,074 m<sup>3</sup>/year for groundwater abstraction for drinking purposes, while our average annual consumption at the Šaľa site is 47% of the permitted value.

The consumption of water for drinking purposes has a stable character.

Water consumption is measured with a designated meter and the consumption data is sent to the state authority every year.

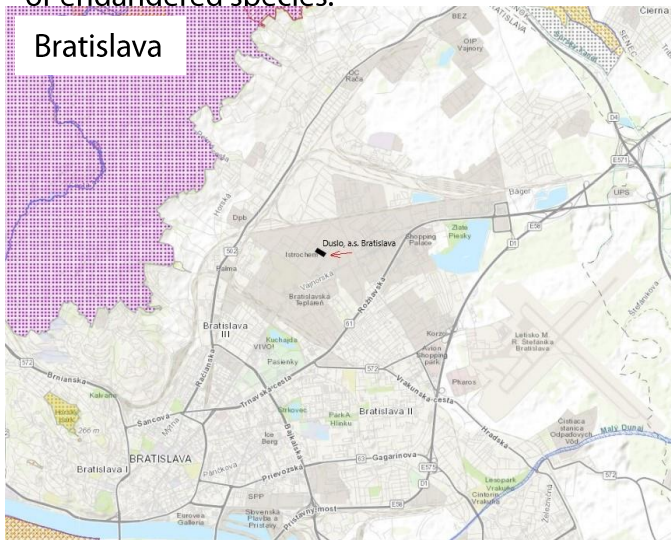
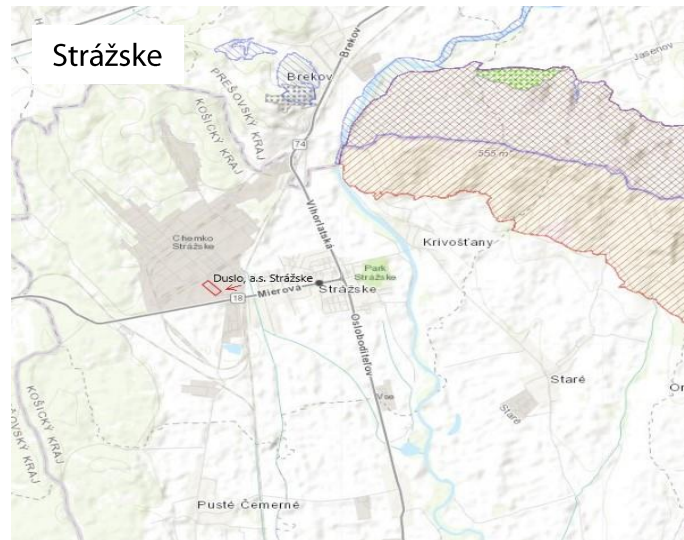
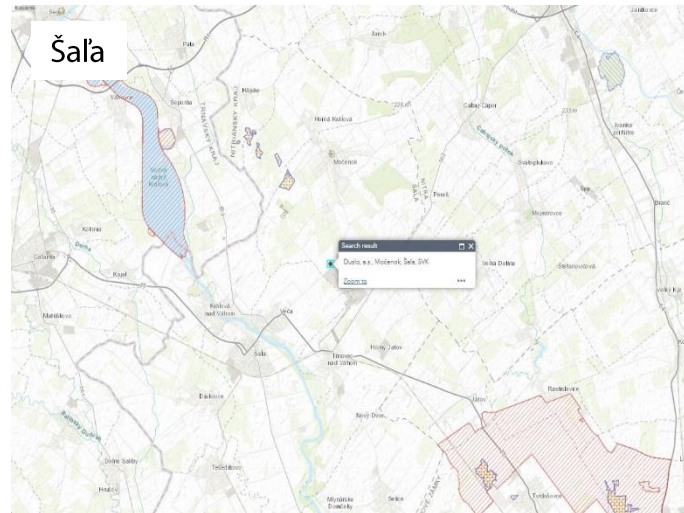
# Location of workplaces in relation to protected areas

Source: [European protected sites — European Environment Agency \(europa.eu\)](http://European protected sites — European Environment Agency (europa.eu))

None of the workplaces of Duslo, a.s. is not found:

- in a protected EU area (NATURA 2000 – SPA, SAC)
- in a protected area according to national legislation (Act NR SR No. 543/2002 on nature and landscape protection)

The activity does not endanger protected areas or endangered species.



# Conclusion

Prepared by: Ing. Richard Katunský and team  
The material was discussed by the Management Board of Duslo, a.s. and approved by the vice-chairman of the board and general director of Duslo, a.s.

Date of approval: 18 September 2023

