

Arsenic contamination in groundwater is a significant concern across the world

Geochemical Factors: The high arsenic concentrations are primarily due to natural geological formations.

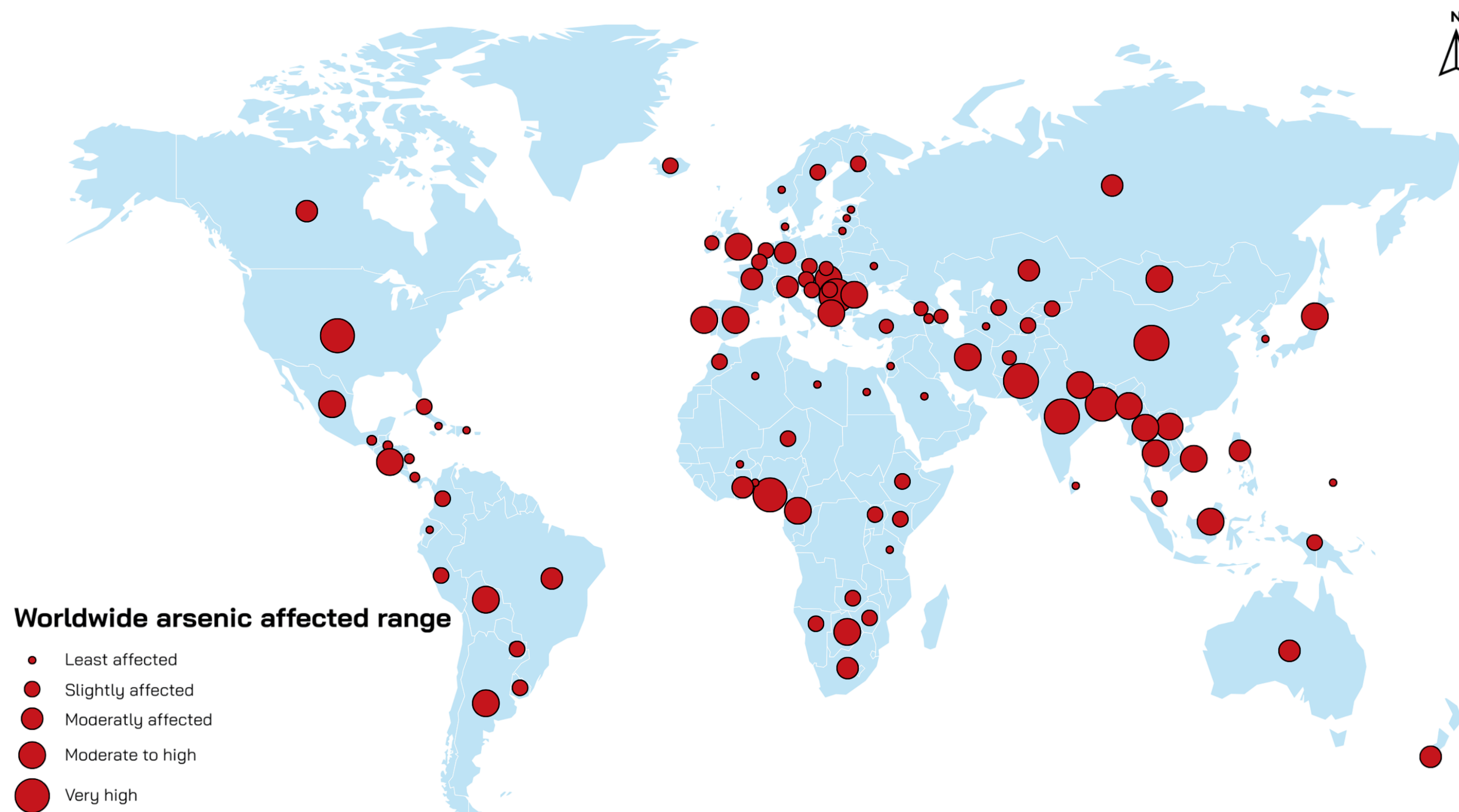
This issue affects both rural and urban populations, with concentrations often exceeding the World Health Organization's recommended limit of 10 µg/L.

Despite decades of investment, many regions still exceed the WHO guideline of 10 µg/L. The scale of the problem demands urgent global action.

Worldwide, over 300 million people are exposed to unsafe arsenic levels in drinking water, especially in South Asia, Africa, and Latin America.

More than 83 million people live within the Danube catchment area, where heavy metals such as arsenic—threatens drinking water supplies for millions. It is estimated that around at least a 0.7% - 1% of the population in this region faces potential exposure to arsenic-contaminated drinking water.

Arsenic water contamination is particularly significant in the Pannonian Basin (Romania, Hungary, Serbia, Croatia, Slovakia).



Main financial regulatory principles when evaluating Water Infrastructure projects

- **Fundings provide financial support only for the investments**, not for the operation,
- **Least-cost solutions**, including **operational costs** (feasibility studies, option analysis, public procurement) **must be considered** when determining support,
- The projects must be **sustainable in technical and financial terms** as well
- The tariffs resulting after the investment must be affordable for the citizens

We are not rich enough to buy cheap!

Operational and total Life - Cycle Costs need to be considered

Dynamic Cost Comparison Calculation (DCC)

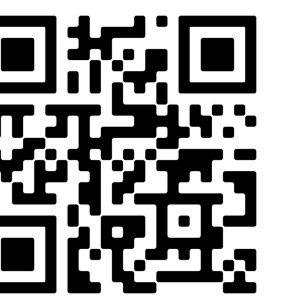
Best practice for project preparation and planning

Proper project preparation is needed for **long-life, sustainable water infrastructure solutions** that deliver **favourable operating costs**

- Life-Cycle costing (LCC)
- Option analysis

Assess cost-effectiveness by considering all life-cycle costs and comparing them at present value

- Enable cost-efficient implementation
- Promote resilient, long-term performance
- Ensure economic and operational sustainability



More about the DCC Guidelines

➤ Choosing the over-all least cost solutions

Selection of arsenic removal technologies based on total life-cycle costs (30 years)

WELL-PROVEN technology

AsMET – regenerable adsorbent for arsenic removal

In contrast to traditional and chemical-intensive arsenic removal methods, there is a new technology - regenerative water purification based on special filter resins – that is:

cost-effective, sustainable and economical, and produces only small amounts of hazardous waste, as the adsorbent-filled tanks can be returned to the system after regeneration.

The AsMET adsorbent

- adsorbs the arsenic (III) and the arsenic (V) content of the raw water
- however high the arsenic content of raw water ensures that it is below the WHO limit
- **expected life span is 30 years**
- can be used up to 50 °C water temperature
- regeneration is performed with commercial chemicals, expected frequency of the regeneration is varied from the raw water As content
- the system operates without added chemicals
- the material always has to be kept under the water

Advantages of the product

- cerium based adsorber resin – flexible use for all users from domestic use to waterworks and all the other water industry players
- can be attached to existing waterworks, or installed newly with suspended solid pre-filter
- regenerable, allowing for smaller filters and lower running costs and leaving a smaller environmental footprint
- taste, smell, and mineral content of the water stays the same
- ensure the supply of stable arsenic free water quality with cost-saving long-term operation

References

Hungary

- Treatment and stabilization of the hectic and high (more than 80µg/l) arsenic content of the water wells
- Capacity: 220 m³/day Qmax 16 m³/hour
- The existing technology was upgraded with four 200 liter AsMET unit tanks, each with its own control system, connected in series.
- Implemented under a rental agreement

India

- technology: AsMET arsenic removal with PuraWELL
- capacity: 6 m³/day
- installation, training, and community engagement including awareness-raising events,

Vietnam

- AsMET arsenic removal
- capacity: 10 m³/d
- duration of test: 6 months
- arsenic removal efficiency above 90%
- below 10 µg/L limit 1 litre

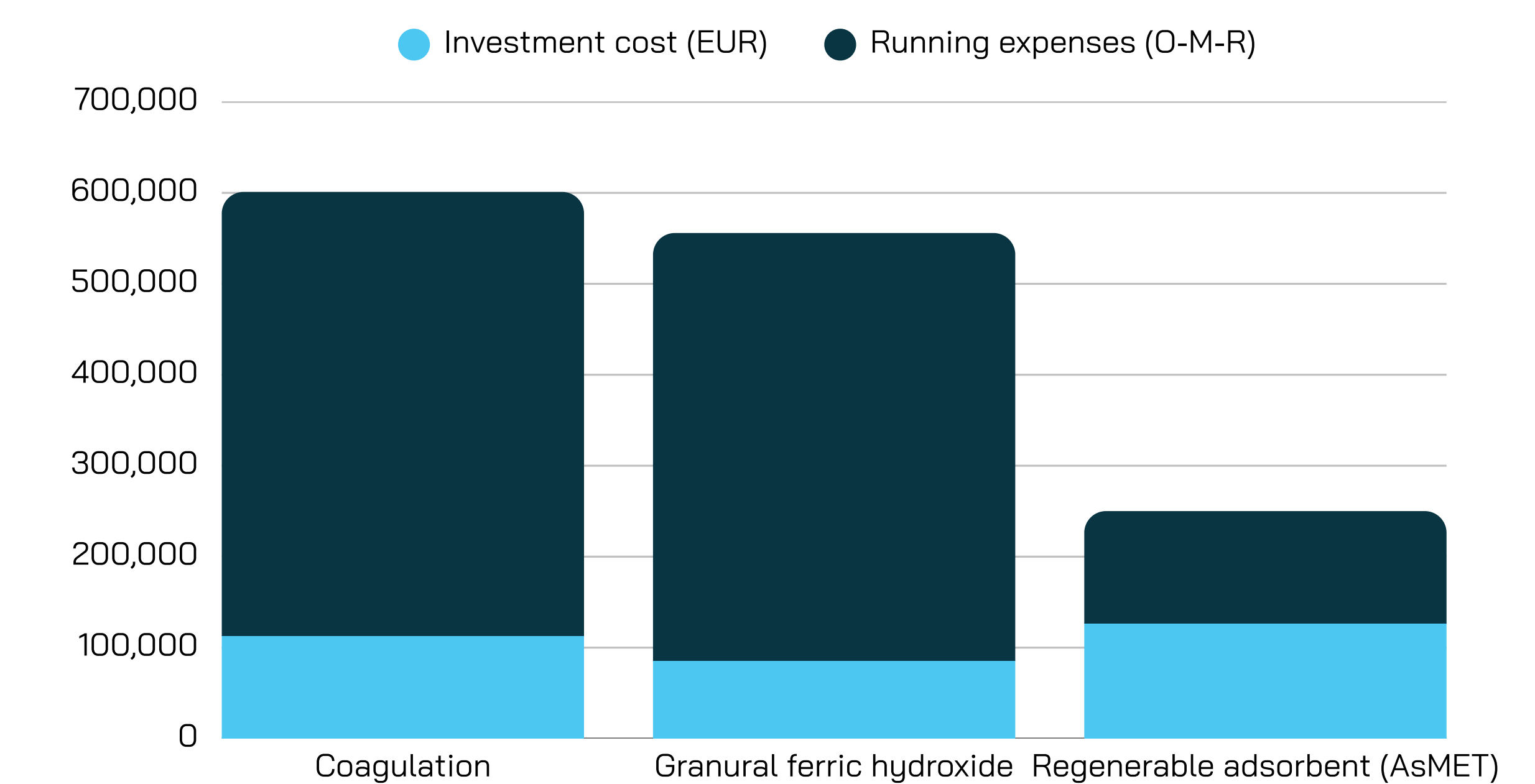
Romania

- ammonia, arsenic 28 µg/L
- capacity: 36 m³/h, 720 m³/d
- project value: 290,000 EUR
- delivery: 2025/04

More about production



TOTAL LIFE CYCLE COST EUR



Volume of water treated (m ³ /day)	800	Purified water As concentration (ug/l)	8
Arsenic level (ug/l)	28		



Purification (O-M-R) with AsMET costs less than **3 €cent/m³ = 0.003 €cent/liter** over a 30 year operational period

Summary

With our AsMET product, we offer a cost-effective, sustainable, and affordable solution in the field of arsenic removal from drinking and industrial water, while ensuring stable arsenic levels below the limit value. The regenerable adsorbent can be reused multiple times, reducing both waste and operational costs.

Water is our purest asset!

More about AsMET



Reference video

