

THE ORGANIZER OF THE CONFERENCE

The Macedonian Committee on Large Dams (MACOLD) is expert, non-government and non-profitable engineering organization and it is a member of the International Commission on Large Dams (ICOLD) since 1950, as a part of former YUCOLD. As an independent organization, MACOLD is a member of ICOLD since 1994 and member of European Club of ICOLD since 2006.

MACOLD has an important role in the designing, construction and maintenance of the large dams in R. Macedonia, throughout direct participation of its members in realization of the projects as well as organization of several congresses, symposiums, workshops, study tours and expert presentations.

In the previous period MACOLD has organized following scientific events:

- (1) Symposium on topic: Designing and construction of dam Kozjak (1999),
- (2) First Congress on dams (2004),
- (3) Symposium on topic: Dam Kozjak – experience from construction, first filling and initial service (2005),
- (4) Second Congress on dams (2009),
- (5) International Workshop "Advanced methods and materials for dam construction", with lecturers from Greece, Switzerland and R. Macedonia (2009),
- (6) International Symposium "Dams - recent experiences on research, design, construction and service", organized by MACOLD and SLOCOLD (2011),
- (7) Conference on topic: Tailings dams in Republic of Macedonia (2012),
- (8) Third Congress on dams (2013),
- (9) 10th Conference on Water Economy and Hydraulics (2014),
- (10) Conference on topic: State of the Water Economy Infrastructure (2015),
- (11) 11th Conference on Water Economy and Hydraulics (2016),
- (12) IV Congress on dams (2017),
- (13) Tribune on topic: 80 years of dam engineering in RN Macedonia (2018),
- (14) 12th Conference on Water Economy and Hydraulics (2019), and
- (15) Second International Symposium "Water reservoirs – an Active Measure in Adapting to Climate Change", organized by MACOLD and SLOCOLD (2020).
- (16) 5th Congress on dams (2021),
- (17) 2nd Conference on tailings storage facilities (2022).

SUPPORTERS OF MACOLD EVENTS IN 2022

1. Civil Engineering Institute Macedonia, Skopje
2. Sasa mine, M. Kamenica
3. Institute for earthquake engineering and engineering seismology - IZIS, Ss. Cyril and Methodius Univ. in Skopje
4. GeoHydroKonsalting, Skopje
5. Chamber of certified architects and certified engineers, Skopje
6. HidroKonsult, Skopje
7. Faculty of Civil Engineering, Ss. Cyril and Methodius Univ. in Skopje
8. Chakar&Partners, Skopje
9. HydroEnergoInzhenering, Skopje
10. Geing KuK, Skopje
11. Geomap design, Skopje
12. PE Strezhevo, Bitola
13. Bulmak, Probishtip
14. Stenton gradba, Bitola
15. State environmental inspectorate, Skopje
16. PE Lisiche, Veles
17. Geo Ing, Delchevo
18. Faculty of natural and technical sciences, Univ. Goce Delchev, Shtip
19. Strabag, Skopje

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Macedonian Committee on Large Dams (MACOLD)

Member of the International Commission on large dams (ICOLD)



Member of the European club of ICOLD



13TH CONFERENCE ON WATER ECONOMY AND HYDROTECHNICS

First announcement (20.2.2023)

Skopje, 6-7.10.2023

AIMS OF THE CONFERENCE

In the period 1994-2003, nine Conferences on water economy were successfully organized in the Republic of N. Macedonia. A noble tradition was created, which, unfortunately, was neglected in the following ten-year period. In order to renew this tradition, in September 2014, the 10th Conference on Water Management and hydrotechnics was held. These conferences, organized by MACOLD, confirmed that such gatherings are indispensable for the exchange of experiences and transfer of knowledge among the different generations of water managers and engineers in hydrotechnics. They are significant, because they ensure that the water management community can meet in one place, both in serious presentations and discussions at the sessions, but also in an informal, more relaxed atmosphere, to identify and resolve problems of an administrative and technical nature. The presidency of MACOLD, at the session held on 10.2.2023, decided to hold the 13th Conference in October 2023.

The need to hold the 13th Conference on Water Economy and Hydrotechnics is in order to fulfill the following objectives, which are currently attracting the attention of all those involved in these areas.

The largest part of the water infrastructure in the Republic of N. Macedonia is from an older date and the problem of improving the reliability and functionality of the old dams arises. The improvement refers to the innovation of the technical documentation and timely rehabilitation of the damaged appurtenant structures.

Water management is one of the economic branches, essential for the development and progress of the country, which, unfortunately, was unsuccessfully transformed during the long transition period, which began in 1990. At the moment, the restructuring of the water management companies, united in AD VS of RSM, is being updated again. A prerequisite for successful reformation of the water management is to perceive all the positive and negative sides of the previous water management and to identify the opportunities for improving the organizational setup of the water management.

Hydropower is one of the most important branches in the field of water use. In the last decade, there have been dramatic changes in the installed capacity of electricity generation plants from renewable and environmentally clean energy sources. Globally in 2021, the installed capacity of solar power plants was 942 GW, and of hydropower plants (together with pumped storage) was 1,330 GW. The installed power of solar power plants (photovoltaics) increases with a geometric progression. On an annual level, an increase in the installed power of hydropower plants is expected by about 30 GW, while for solar power plants, 268 GW are installed in 2022, and for 2023, it is predicted that 315 GW will be added. It is not difficult to predict that in 2023 the installed capacity of solar power plants, which have become more significant only in the last decade, will exceed the installed capacity of hydropower plants, which have

been under construction for more than a hundred years. This global trend will probably be reflected in the energy sector in Macedonia. Local peculiarities should be taken into account. Namely, only 30% of the hydropower technically usable potential (TUP) has been built in the Republic of Macedonia, which with the latest electricity price increases, has practically passed into the category of economically utilized potential. If on a global level, for regular operation with a mixed energy system, the solar/hydro ratio according to the annual increase is about 10, which varies from 20 to 5, depending on the degree of construction of the TUP, from 90% to 20%, then in RN Macedonia, that ratio should not be greater than 5.

At this stage of the energy development in RN Macedonia, solar power plants should not be treated as competition for hydropower plants. On the contrary, the installation of solar power plants is an incentive for the construction of new hydropower plants. It should be emphasized that at this stage investing in small and run-of-river hydropower plants is completely unacceptable, because in addition to being unjustified from an environmental, sociological and economic point of view, they have now also become energetically illogical. At this moment, large storage hydropower plants and, above all, reversible hydropower plants are necessary to cover the daily unevenness and unpredictability of solar power plants.

Taking into account that water reservoirs with a large active storage volume are the only active measures to mitigate the negative impacts of climate change, it is logical that the development of hydropower in the future period should be with multi-purpose reservoirs, with the timely involvement of priority water users: water supply, irrigation, environmental guaranteed leakage, as well as for flood defense.

GENERAL INFORMATION ABOUT THE CONFERENCE

The working part of the Conference will take place on 06.10.2023 in the conference hall of the Chamber for Certified Architects and Certified Engineers, Skopje, and on 07.10.2023 (Saturday) a technical tour of dam Otinja (Shtip) is planned. The registration fee for the Conference is 3000 MKD (or 50€) and it includes participation in the Conference, Conference proceedings, refreshments at coffee breaks, cocktail/lunch served at the venue and participation on the technical tour.

In addition to the members of MACOLD and the national committees for large dams from the region, everyone who is involved in water management and hydrotechnics, in dam engineering, i.e. employees in state and scientific institutions, energy, water and utility companies, as well as in private construction and engineering companies, is invited to participate in the conference.

The participants will receive Certificate on continuous professional development, issued by the Chamber of Certified Architects and Certified Engineers of Republic of Macedonia, valued by 4 CPD points. Official languages of the Conference are Macedonian and English.

CONFERENCE TOPICS

The Conference papers, unpublished previously, should relate to the following topics:

- Topic no. 1 Current state of water use (water supply, irrigation, hydropower) and flood defense,
- Topic no. 2 Management of water resources and possibilities for improvement of the organization of water economy,
- Topic no. 3 Improvement of safety and functionality of old dams,
- Topic no. 4 Multipurpose reservoirs – an active measure for reducing the impact of climate change,
- Topic no. 5 Challenges for dams and reservoirs emerged by the construction of solar and wind power plants.

SUBMISSION OF PAPERS

Interested authors should report the title and submit a summary of the abstract in Macedonian or in English in electronic form (Word DOC format) to the following e-mail address: macold@macold.org.mk

The summary should not exceed 200 words, should contain concise information about the paper, names of authors, organization, address, telephone and e-mail contact.

The Editorial board will review the submitted abstracts and the authors will be notified electronically of the acceptance of the abstract, when they will also receive detailed instructions for preparing the complete paper. The paper is expected to be limited to a maximum of 12 pages. One author, as the first listed author of an abstract, can participate with a maximum of two abstracts.

Prepared papers according to the instructions should be submitted in electronic form (Word DOC format) to the above mentioned e-mail address. Abstracts accepted by the Editorial Board will be printed in Proceedings.

TECHNICAL TOUR

Details for the technical tour of dam Otinja with appurtenant structures will be given in the Second announcement.

IMPORTANT DATES

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| 31.5.2023 | Submission of abstract |
| 15.6.2023 | Notification of abstract acceptance, with instructions for the paper preparation |
| 1.9.2023 | Submission of full paper |
| 1.10.2023 | Final announcement with detailed agenda of the Conference |
| 6.10.2023 | Working day of the Conference, Skopje |
| 7.10.2023 | Technical tour of dam Otinja, Shtip |