elektroprojekt
Established 1949
Consulting Engineers

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Established 70 years ago, in 1949, **Elektroprojekt** has since developed from a company specialized in design of hydroelectric and thermal power plants into a company unique in the region for its scope of activities in the fields of power generation, water and environmental management, and nature conservation. Such a development has been contributed by Elektroprojekt's experts and their broad experience in those fields. Fifty out of 100 employees are certified engineers, and a number of specialists on the **Elektroprojekt** staff are authorized for validation of foreign design documentation in all building sector segments. Many professionals have established traditionally strong partnerships with scientific, research and educational institutions, and external specialists covering the fields not in the narrow scope of the company's expertise (natural sciences, biotechnology, sociology). Elektroprojekt's experience and capacities for managing multidisciplinary projects should be particularly highlighted, as well as for elaborating and evaluating complex multipurpose infrastructure systems. All the projects are undertaken and implemented with full awareness of socio-economic requirements, considering their nature conservation and environmental protection aspects.

Elektroprojekt has been working for decades with strong sense of responsibility for the national interests. In international projects implemented in 28 countries on four continents - from the USA over the Mediterranean Africa to New Guinea - the company has always endeavoured to meet its clients' requirements while promoting responsibility towards local communities. Such an attitude enabled **Elektroprojekt** to achieve technically reliable, economically efficient and environmentally sustainable solutions. This attitude is reflected in the company's mission statement:

creating reliable, efficient and sustainable
harmony of construction and technology with mankind and nature
for present and future generations.

The mission has been an inspiration to previous generations and young people joining **Elektroprojekt** alike. The young are prepared from the early days to assume the role of their predecessors, whose aims and achievements are deeply embedded in the company's professional philosophy and daily practice. The company's products, the documentation developed during the past years, create a unique archive comprising tens of thousands of designs, studies, analyses, manuals, books, and hundreds of thousands of drawings.

As the turnover of employees is rather low, the currently employed have on average 16 years of service in **Elektroprojekt**. Masters and doctors of science and other Elektroprojekt specialists are lecturing at the University of Zagreb Faculty of Civil Engineering, Faculty of Science, and Zagreb Polytechnic, which grants Elektroprojekt the status of a scientific institution.

Elektroprojekt has had a long tradition in implementation of its in-house quality assurance and control policy, environmental protection and nature conservation, health and safety, as confirmed by recertification according to the quality control ISO standards - ISO 9001, the environmental protection ISO 14001, and the occupational health and safety OHSAS 18001 standard. Responsibility towards sustainability of the design solutions is confirmed by setting up a permanent team of experts in charge of the environmental and nature impacts assessment of the company's activities. Rendering consultancy services on projects funded by the World Bank, United Nations, various European banks and funds in the field of power generation, water management, environmental protection and nature conservation has given the company an opportunity to gain invaluable knowledge of procedures, guidelines and requirements faced with by consultants involved in implementation of projects funded by these institutions.

Elektroprojekt owns two companies: Nukel (Slovenia) and Harna (Croatia), and has had a registered office in Teheran (Iran) since 1964. Elektroprojekt is a private joint-stock company with about 280 shareholders according to data for 2015. Total property value amounts to 19,000,000, total assets and reserves to 17,000,000, and revenues to 7,000,000.

Design, consulting and engineering
of development, building and management
in energy sector, water management,
nature conservation, municipal services,
public facilities and telecommunications

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ORUMIYEH

MAHABAD MULTIPURPOSE PROJECT
MAHABAD DAM
ORUMIYEH AND SALMAS AREA

Water Resources Management Systems in Iran

A permanent of demand for food all over the world requires an intense development of agriculture. This development can be made possible only by establishing modern irrigation and drainage systems over large areas. This problem has been given particular attention in developing countries (such as Burma, Ethiopia, Egypt, libya, Iran) where **elektroprojekt** has carried out remarkable projects.

elektroprojekt has designed a number of large irrigation and drainage systems making optimum and integral use of the surface and ground water resources.

elektroprojekt activities formed the basis for these designs; they included investigations of soil properties, surface and ground water resources, climatic characteristics; studies on area development, with the emphasis laid on sociological and economic factors, in order to archieve full development of the areas.

Irrigation and drainage schemes elaborated by elektroprojekt cover a total of 439,500 ha.


MAHABAD DAM - VIEW OF THE DAM SITE

MAHABAD MULTIPURPOSE PROJECT

This project is located on the Mahabad River. By its construction will be ensured a controlled water supply to the irrigation network of 18,200 ha.

By the erection of the dam on then river Mahabad will be created a reservoir of 230 mil. m^3, and in this way the flow regulated to the irrigation system. The dam is of a rockfill type, with the clay core. It is 46.5 m high and the crest is approximately 700 m long.

The spillway and the bottom outlet are located on the left abutment, the latter one serving during the construction as diversion tunnel for the Mahabad River.

On the left side of the dam, at its downstream toe, is located a hydroelectric power plant. On the right side of the downstream toe od the dam, there is situated the pumping station conditioning plant for the water supply of the town. The main reservoir is to be about 650 m farther up on the hill dominating the town.


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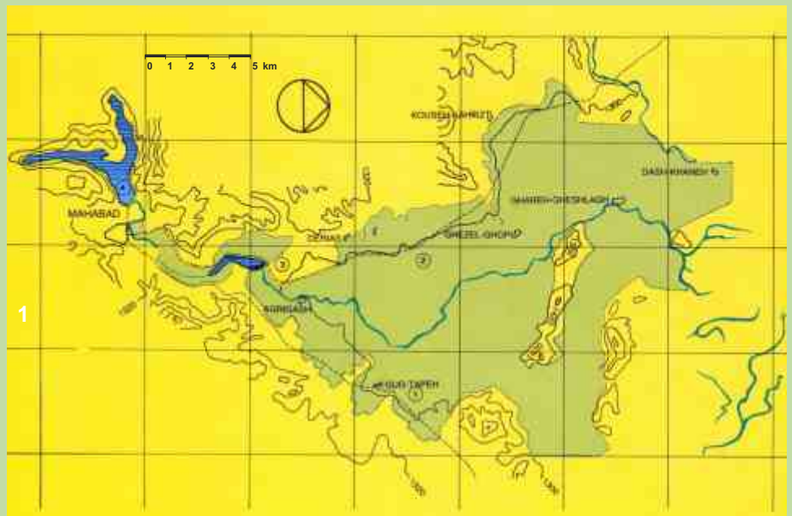

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1 MAHABAD MULTIPURPOSE PROJECT (18,200 ha)
2 MAHABAD DAM
3 CONVERSION OF THE DESERT INTO ARABLE LAND

Approximately 8 km downstream of the main dam, a diversion dam closes a compensating reservoir. By means of intake structures water is conveyed both to the left and to the right irrigation main canal. The central portion of the dam is of concrete while the rest is of earth. The total lenght of main canal will be about 30 km, the total length of branch canals 158 km, and of lateral canals 118 km, including the gravity and pumping irrigation system.

Along the main canals as well as between the Mahabad Town and the diversion dam site, pumping stations are located from which water will be pumped to higher levels of ground.

Together with the irrigation canals, a system of drainage canals will be excavated. Both the systems (irrigation and drainage) will consistof 611 km of main, branch, and lateral canals. For functioning of them 1679 structures will be necessary, all of them being rather medium and small size.

ORUMIYEH AND SALMAS

By this Report has been proposed:

1. To construct an irrigation system for 71,000 ha in the **Orumiyeh** Area.
   - 48,000 ha should be irrigated by means of river water. For this purpose it would be necessary to construct two storage basins having a total volume of 285,000,000 m^3.
   - 23,000 ha by utilization of ground waters.

2. To construct an irrigation system for 20,000 ha in the **Salmas** Area. Water for irrigation purposes should be taken from the Zula Chai. It has been planned to construct a rockfill dam of total volume of 1,000,000 m^3 which would create a storage of total capacity of 105 mil. m^3.

It has been foreseen to construct hydroelectric power plants adjacent to all the three dams with a total power of 32 MW.