



**innosystem**





NUMBER OF EXPERT AND  
DESIGN CERTIFICATES

**60+**



**150+**  
PARTNERS



TOTAL COMPLETED  
**CONTRACTS**  
**3000+**



**10000+**  
**SAMPLINGS**

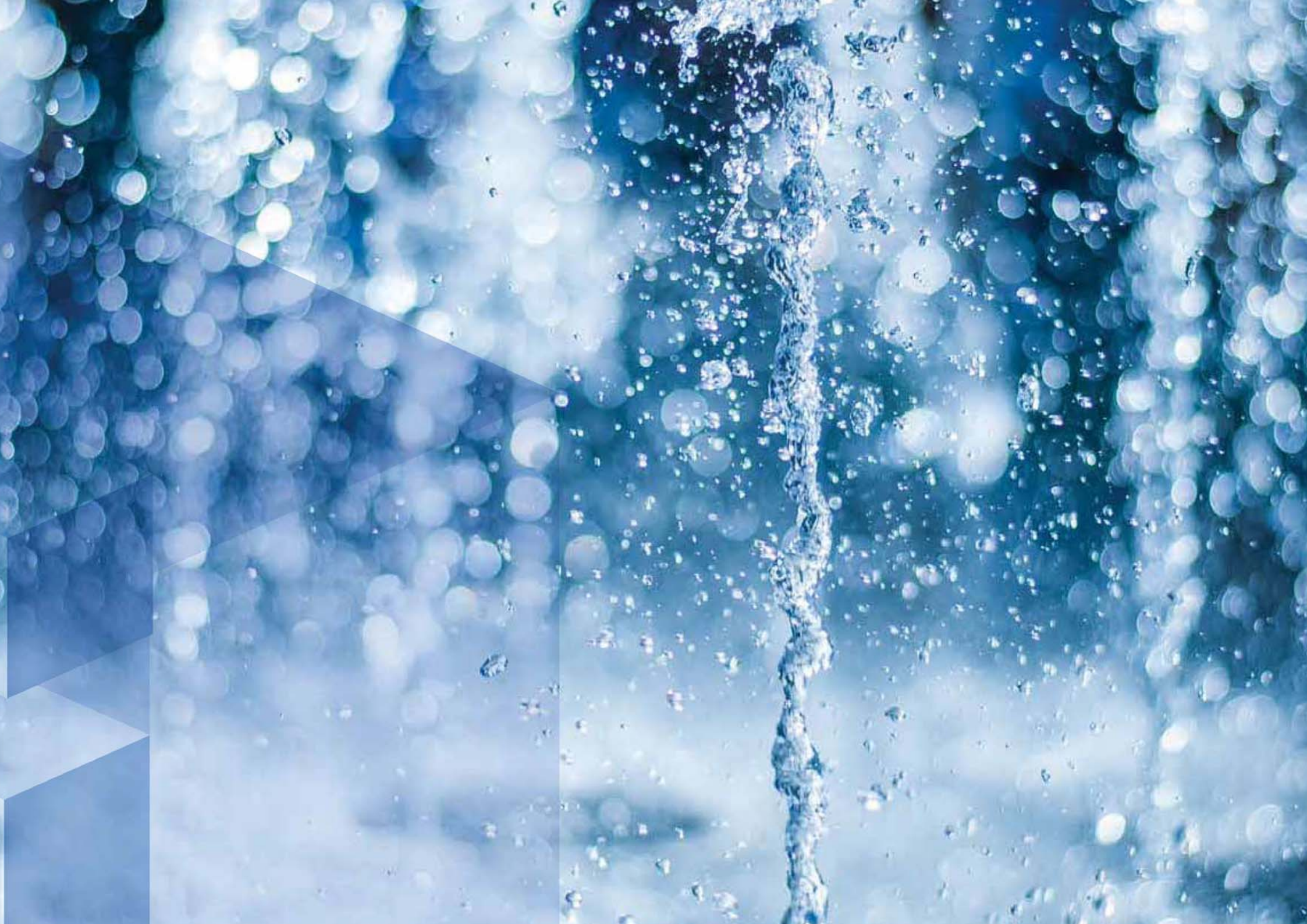


INTERNATIONAL PRESENCE ON  
**3** **CONTINENTS**



WE BELIEVE THAT THE SECRET OF OUR SUCCESS LIES IN  
THE SATISFACTION OF OUR CLIENTS AND PARTNERS.







**VTK INNOSYSTEM WATER-, NATURE- AND ENVIRONMENTAL PROTECTION LTD, WAS FOUNDED IN 1989 BY THE RESEARCH CENTRE FOR WATER RESOURCES DEVELOPMENT (VITUKI PLC.) AND THREE OF ITS' FORMER RESEARCHERS.**

Nowadays, the company offers a broad spectrum of services on the fields of water management and environmental protection, from conceptual planning, through design, authorization and implementation to operation of projects.

Our company, with its 25 colleagues has completed more than 3000 projects and contractual tasks successfully for various service providers, governmental and municipal customers, and different industries as well as for engineering companies. Our specialized proficiency in water management, environmental protection, technology and economics is supplemented with an internal knowledge management system that ensures the efficient use of acquired experiences and information.

We regularly re-examine both our ISO 9001 quality management system, introduced in 1997, and our ISO 14001 environmental management system, introduced in 2000, and adjust them according to new market challenges and changing circumstances.

Our sampling team is NAH (National Accreditation Authority) accredited since 2004 for sampling surface water, groundwater, soil, sediment, wastewater and process water.

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**WATER MANAGEMENT**

**INTERNATIONAL PRESENCE**

**ENVIRONMENTAL PROTECTION**

**WASTE MANAGEMENT**

**SUPPORT OF CONSTRUCTION INVESTMENTS**

**PLANNING, WATER MANAGEMENT • PREPARING FEASIBILITY STUDIES  
IMPACT ASSESSMENTS • AUTHORIZATION • MONITORING, INVESTIGATION  
CONSULTATION, ENVIRONMENTAL CONSULTANCY • LOADABILITY TESTS • SITE SELECTON  
STATUS ASSESSMENT, ENVIRONMENTAL AUDITING • STRATEGIC DECISION SUPPORT  
RESEARCH AND DEVELOPMENT • EDUCATION • UTILITY ASSET EVALUATION**



**WATER MANAGEMENT**

EVERYTHING THAT IS WATER





**PLANNING, WATER MANAGEMENT**



**FEASIBILITY STUDIES**



**IMPACT ASSESSMENTS**



**AUTHORIZATION**



**MONITORING, INVESTIGATION**



**LOADABILITY ASSESSMENTS**



**SITE SELECTION**



**STATUS ASSESSMENT, ENVIRONMENTAL AUDITING**



**STRATEGIC DECISION SUPPORT**



**RESEARCH AND DEVELOPMENT**



**EDUCATION**



**UTILITY ASSET EVALUATION**

## **OUR COMPANY HAS BEEN WORKING IN THE DIVERSIFIED PROBLEM AREAS OF WATER MANAGEMENT SINCE ITS FOUNDATION**

The circulation of water generates several tasks for us, from protection and rehabilitation of surface- and groundwater resources, through protecting healthy potable water resources and providing drinking water for people, to the safety disposal of wastewater.

SANITARY WASTEWATER  
WASTEWATER  
SEWAGE  
DRINKING WATER  
WATER TREATMENT  
QUALITY OF RIVERS  
REGIONAL REHABILITATION  
REMEDIATION  
WATER QUALITY OF RIVERS, LAKES  
RESERVOIRS  
LOADABILITY  
SURFACE WATER  
PROTECTION OF WATER  
MO



**WE HAVE TAKEN PART IN PREPARING AND IMPLEMENTING SEVERAL INTERNATIONALLY FINANCED PROJECTS, OFTEN CARRIED OUT WITHIN THE FRAMEWORK OF INTERNATIONAL COOPERATIONS**

We have carried out different tasks depending on the projects, as overall project managers in Europe, in a drinking water supply project in Africa, or as local project managers and environmental and water management experts in Asia. During these works we have gained a wide range of experience in the administration of international projects, in the use of recording and accounting systems, in coordinating the works of experts' team at different locations mainly in English speaking environments.

As a result, we have established extensive international relationships with universities and research institutes.

CHANGEMENT CLIMATIQUE ET  
OVERPOPULATION  
ပြောင်းလဲမှုနှင့် လူဦးရေများပြားမှု  
A KPII3A EHOCT  
YATABIANCHI  
TOZÁS  
ON DE L'EAU  
TRENACEJENON







**PLANNING, WATER MANAGEMENT**



**FEASIBILITY STUDIES**



**IMPACT ASSESSMENTS**



**MONITORING, INVESTIGATION**



**SITE SELECTION**



**STRATEGIC DECISION SUPPORT**



**RESEARCH AND DEVELOPMENT**



**EDUCATION**

# INTERNATIONAL PRESENCE

WE ARE AT HOME EVERYWHERE





# ENVIRONMENTAL PROTECTION

THE LEGACY WE LEAVE BEHIND





**FEASIBILITY STUDIES**



**IMPACT ASSESSMENTS**



**AUTHORIZATION**



**MONITORING, INVESTIGATION**



**CONSULTATION, ENVIRONMENTAL CONSULTANCY**



**SITE SELECTION**



**STATUS ASSESSMENT, ENVIRONMENTAL AUDITING**



**STRATEGIC DECISION SUPPORT**



**RESEARCH AND DEVELOPMENT**



**EDUCATION**

## **WITH THE EXPANSION OF THE COMPANY AND THE INCREASING NUMBER OF OUR EXPERTS, WE HAVE EXPANDED OUR ACTIVITY BEYOND THE CONVENTIONAL WATER MANAGEMENT TO SEVERAL AREAS OF ENVIRONMENTAL PROTECTION**

We offer full scale solutions for our customers on the field of complex environmental issues, including all fields of expertise. Our work expands to conceptual planning, environmental licensing and covers the whole spectrum of supporting operation from ad hoc audits and trainings to continuous counselling and to carrying out official environmental commissioner tasks.

IMPACT AREA  
VIBRATION ABATEMENT  
SAMPLING  
DAMAGE CONTROL  
MONITORING  
REGISTRATION  
AIR QUALITY PROTECTION  
NOISE AND VIBRATION  
ABATEMENT





# WASTE MANAGEMENT

JUST IN A CLEAN MANNER...





**FEASIBILITY STUDIES**



**IMPACT ASSESSMENTS**



**AUTHORIZATION**



**MONITORING, INVESTIGATION**



**CONSULTATION, ENVIRONMENTAL CONSULTANCY**



**SITE SELECTION**



**STATUS ASSESSMENT, ENVIRONMENTAL AUDITING**



**STRATEGIC DECISION SUPPORT**



**RESEARCH AND DEVELOPMENT**



**EDUCATION**

## **WASTE MANAGEMENT HAS A PROMINENT POSITION AMONG OUR ENVIRONMENTAL SPECIALTIES**

We offer waste management system solutions from strategic planning, through feasibility studies, to control and optimization of operation of waste management services for local governments, corporations and waste producing companies.

With the help of our broad range partnership network we offer support for our partners with choosing cost-efficient and legal recipients and deposition of construction and demolition waste or production waste.

PARTNERSHIP  
REGIONAL SYSTEM  
COLLECTION, STORAGE  
RDF (REFUSE DERIVED FUEL)  
RECYCLING, DISPOSAL  
PUBLIC UTILITIES  
HAZARDOUS WASTE  
MUNICIPAL WASTE  
DEMOLITION  
CONSTRUCTION  
CIRCULAR ECONOMY  
PA  
REG





BEFORE LAYING THE FOUNDATIONS...



# SUPPORT FOR CONSTRUCTION INVESTMENTS AND DEVELOPMENTS



**FEASIBILITY STUDIES**



**IMPACT ASSESSMENTS**



**AUTHORIZATION**



**MONITORING, INVESTIGATION**



**CONSULTATION, ENVIRONMENTAL CONSULTANCY**



**SITE SELECTION**



**STATUS ASSESSMENT, ENVIRONMENTAL AUDITING**

**IN PLANNING AND AUTHORIZING CONSTRUCTION INVESTMENTS, EXAMINATION AND PROPER SETTLING OF ENVIRONMENTAL ISSUES CAN BE A CRITICAL ELEMENT.**

Before planning and licensing, we offer support for the feasibility study of the investment and with obtaining environmental license for the establishment.

Furthermore, in case the construction area is contaminated, we carry out the necessary surveys, we plan and have the prescribed interventions authorized. In cases, where investments involve nature reserves, we survey the location's ecological status and define the possible impacts.













# PLANNING, WATER MANAGEMENT

Water management is interwoven with the cultural history of mankind. The major players in this have always been the respective state, the local governments and besides them the individuals who used water to ensure their everyday needs and meanwhile, occasionally, suffered its damages. It is the same in our time. Significant water management decisions in the present or the future regarding settlement parts, settlements, settlement groups lying on river basins happen on national and municipal levels. These require large-scale concepts, strategies and plans for drinking water supply of the population, wastewater disposition, creating flood protection and for other aims (agricultural, industrial, recreational) of access to water.

Our company has a great amount of experience in creating large-scale surveys and plans and in participating in the implementation of them.

**CONTRIBUTION TO THE DEVELOPMENT OF THE NATIONAL  
RIVER BASIN MANAGEMENT PLAN**

**PREPARATION OF WASTEWATER AGGLOMERATION SURVEYS**

**EXAMINATION OF POSSIBILITIES FOR CO-WORKING OF  
WATER SUPPLY SYSTEMS WITH MODELLING SUPPORT**

**HYDROLOGIC, HYDRAULIC SURVEYS FOR FLOOD PROTECTION  
OF RIPARIAN SETTLEMENTS WITH MODELLING SUPPORT**

**COMPLETION OF REGIONAL RIVER BASIN MANAGEMENT PLANS**

The realization of a water management decision usually requires the construction of hydraulic structures, putting them into operation, and other water related activities that are always carried out by right of authorizations. We prepare and obtain the necessary water permits. In particular:

**PREPARATION OF CONCEPTUAL-, WATER PERMIT- (FOR ESTABLISHMENT  
AND OPERATION) AND IMPLEMENTATION PLANS FOR  
WATER SUPPLY SYSTEMS**

**PREPARATION OF WATER PERMIT PLANS FOR MUNICIPAL  
SEWERAGE SYSTEM AND WASTEWATER TREATMENT PLANT**

**PLANNING OF INDUSTRIAL WATER SUPPLY, WATER TREATMENT**

**PREPARATION OF ESTABLISHMENT AND OPERATIONAL WATER  
PERMIT PLANS FOR URBAN STORMWATER DRAINAGE SYSTEMS**

**PREPARATION OF ESTABLISHMENT AND OPERATIONAL WATER  
PERMIT PLANS FOR STORMWATER RESERVOIRS**

**PREPARATION OF URBAN STORMWATER MANAGEMENT PLANS**

**DESIGN CONSULTANCY FOR THE MITIGATION OF  
CLIMATE CHANGE EFFECTS**

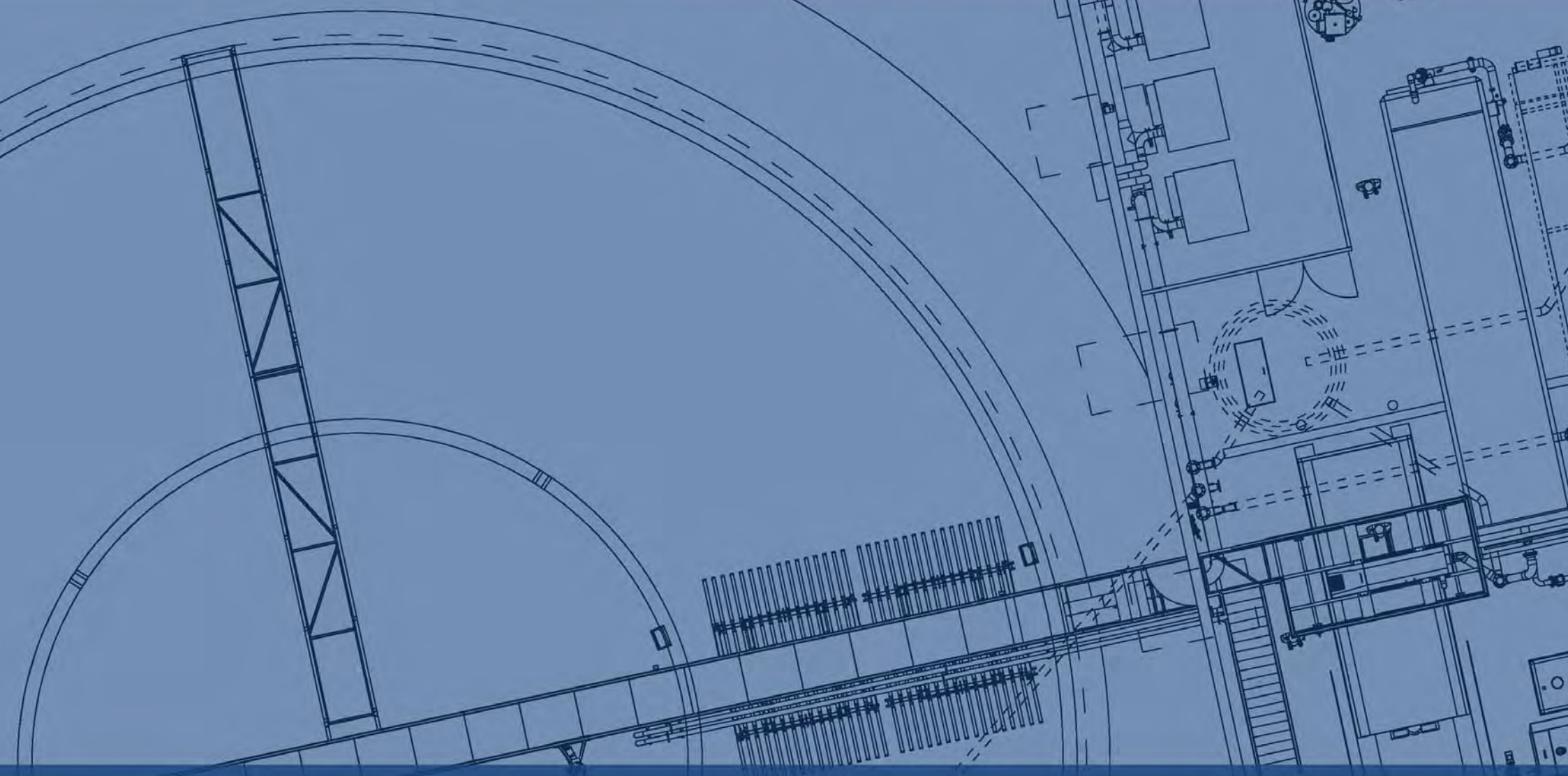
Nowadays, taking ecological aspects into consideration play an important role in water management decisions. Under this framework we have undertaken several surveys and studies

**IN ORDER TO ASSESS THE LOADABILITY OF SMALL WATERCOURSES,  
IN ORDER TO ESTABLISH HABITAT PROTECTION MEASURES**

Technical executive and technical supervisory duties, in connection with the implementation of designed establishments, also falls in our company's profile.







#### REFERENCES:

Nagycenk-Nagylózs waterworks system combination, design planning and modelling - **Sopron Waterworks Plc.** • Planning, related to the drinking water quality improving program for settlements supplied by the eastern water aquifer of Zalaegerszeg - **AQUAREA Ltd.** • Risk assessment and mitigation plan for the damages by Hosszúréti-stream - **Budapest Capital City** • Planning and preparation for further development of Győr-Gönyű national harbor - **ÉDUVIZIG** • Technical planning and authorization of sewage disposal and treatment of Kányavár settlement - **Kányavár Local Government** • Investment planning for the modernization of Oroszlány wastewater treatment plant - **TÁVHŐ Ltd.** • Water permit for Lőrinc gas turbine power plant - **MVM Plc.** • GE Nagykanizsa Lighting consolidated water permit documentation - **GE Hungary Ltd.** • Planning new habitats in the side-streams of the River Danube - **E.ON Power plants Ltd.** • Sopron wastewater treatment plant water permit documentation - **Sopron Waterworks Plc.** • Design and authorization of a sediment basin for the upper reservoir of the Bán-stream at Lázberc - **ÉRV Plc.** • Dunamenti Power Plant Plc. Oil Station, design of comprehensive, preventive, environment protection yard of 30 000 m<sup>3</sup>-capacity oil tanks - **Dunamenti powerPlant Plc.** • Baseline plan for reed filtration field at Lőrinc cooling pond- **ERBE Ltd.** • Review of water permit of GE Fóti street site - **GE Hungary Ltd.** • Preparation of sludge treatment plans for South-Pest WWTP - **FŐMTERV Plc.** • Preparation of conceptual water permit with specific limit value application for the Petőháza Sugar Factory WWTP - **Magyar Cukor Plc.** • Revision of long-term action plan of drainage and wastewater treatment in the capital city - **FŐMTERV Plc.** • Agro-Chemie Ltd. WWTP construction permit modification, consultation with authorities - **Agro-Chemie Ltd.** • Preparation of the ecological further development of Szigetköz region,





# PREPARATION OF FEASIBILITY STUDIES

Using our professional experience of many decades we prepare decision support studies that help decisionmakers to choose the optimal solution from possible variations. We give responses, regarding the feasibility of a planned investment, after a complex, comprehensive evaluation of technical, economic, legal, environmental and social aspects. We examine and compare the possible directions of development; we produce the financial and economic cost-benefit analyses for each version and identify their risks. If needed, we prepare a financing plan for the implementation of the project that optimally fits for our customers' expectations, it opens up the financing possibilities.

## PRODUCING FEASIBILITY STUDIES

### CONCEPT PLANNING

### RISK ASSESSMENT

## PRODUCING FINANCIAL AND FINANCING PLANS

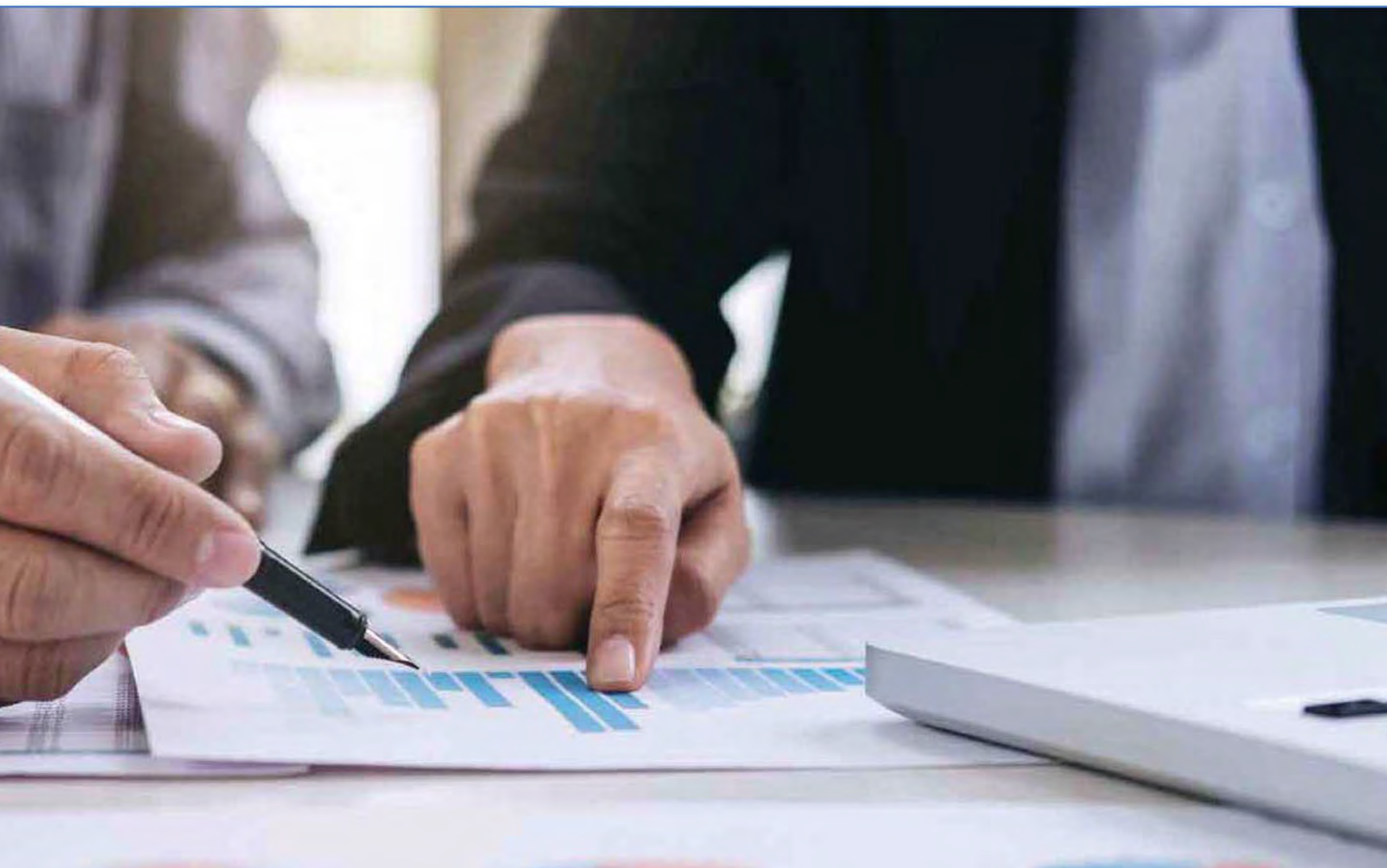
### COST-BENEFIT ANALYSES



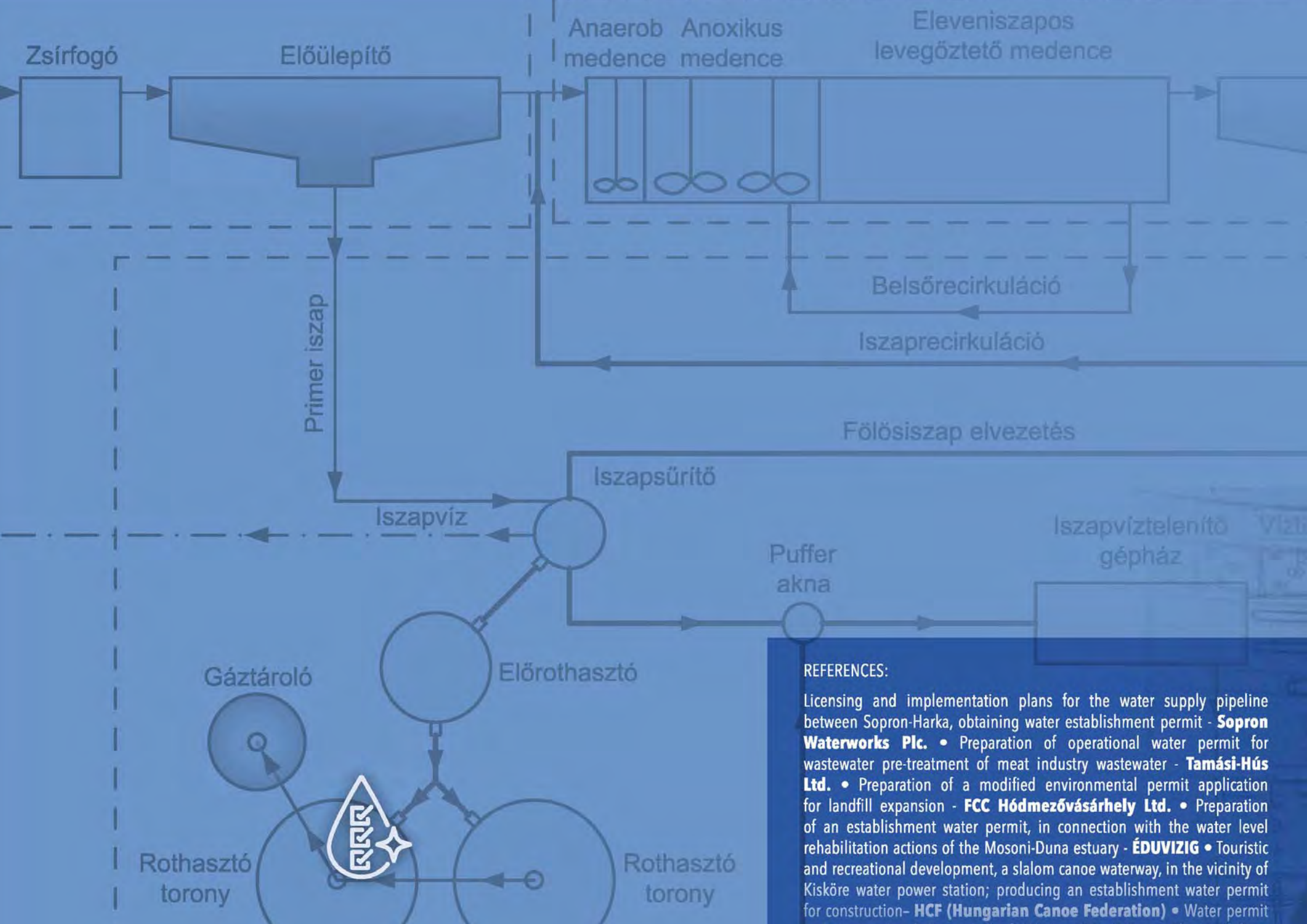
## REFERENCES:

Taking part in more than 200 investments from domestic budgetary resources, ISPA, from the Cohesion and Structural Fund, project documentation regarding feasibility studies and cost-benefit analyses co-financed by the EU, for the Capital City. (Csepel) WWTP's sewage sludge disposal/use technological feasibility study - **Environmental Protection Ltd.** • Feasibility study for the improved navigability of the Danube - **VITUKI Nonprofit Ltd.** • Feasibility study of wastewater treatment for Egis Pharmaceutical Plc. Körmend plant - **EGIS Pharmaceutical Plc.** • Feasibility study for 'Wastewater treatment for South Balaton agglomeration...' project - **UTB Envirotec Ltd.** • Feasibility study in the Laos-Vientiane drinking water and wastewater drainage development









#### REFERENCES:

Licensing and implementation plans for the water supply pipeline between Sopron-Harka, obtaining water establishment permit - **Sopron Waterworks Plc.** • Preparation of operational water permit for wastewater pre-treatment of meat industry wastewater - **Tamási-Hús Ltd.** • Preparation of a modified environmental permit application for landfill expansion - **FCC Hódmezővásárhely Ltd.** • Preparation of an establishment water permit, in connection with the water level rehabilitation actions of the Mosoni-Duna estuary - **ÉDUVIZIG** • Touristic and recreational development, a slalom canoe waterway, in the vicinity of Kisköre water power station; producing an establishment water permit for construction - **HCF (Hungarian Canoe Federation)** • Water permit



# AUTHORIZATION



Water-, and environmental licensing of investments is a complex, interdisciplinary task. Our company undertakes licensing and planning tasks in connection with water usage, environmental protection and nature conservation from the preparation of an investment, through its implementation, to support of operation.

On one hand, we ensure legal compliance for our partners, on the other hand, we lean on the broad knowledge of our experts to provide complex solutions throughout the whole life cycle of our partners' investments.

**WATER PERMIT AUTHORIZATION**  
(CONCEPTUAL, ESTABLISHMENT, OPERATIONAL AND LONGEVITY)

**ENVIRONMENTAL PERMIT AUTHORIZATION**  
(PRELIMINARY ASSESSEMENT, ENVIRONMENTAL IMPACT ASSESSMENT AND  
STANDARD ENVIRONMENTAL PROCEDURES)

**WASTE MANAGEMENT AUTHORIZATION, REGISTRATION**

**AIR QUALITY PROTECTION AUTHORIZATION**

**PRODUCING ENVIRONMENTAL PROTECTION SECTIONS OF PLANS  
REQUIRING CONSTRUCTION PERMIT AND IMPLEMENTATION PLANS**

**PRODUCING ENVIRONMENTAL PROTECTION SECTIONS OF  
IMPLEMENTATION PLANS**





# IMPACT ASSESSMENTS

The aim of environmental impact assessments (or preliminary assessments in simpler cases) is to define the environmental impacts of a planned investment and to assess the conditions of environmental use for the to be granted environmental permit.

During an Environmental Impact Assessment (EIA) we define the baseline status without the planned activity, and with the help of available technical designs we calculate, estimate the possible impacts of the planned activity on its environment (ground, air, water, wildlife, landscape, built environment, the system of environmental elements) throughout construction, operation, abandonment periods.

We also undertake the conduct of IPPC authorization, needed for the activities, developments that have a significant impact on the environment during the operational period. Within the framework of authorization, we assess the proper use of BAT (Best Available Techniques) to reduce emissions and environmental impacts.

## PRELIMINARY CONSULTATION

## PREPARATION OF PRELIMINARY ASSESSMENT DOCUMENTATION

## PRODUCING ENVIRONMENTAL IMPACT ASSESSMENT

## ANALYSIS OF CLIMATE CHANGE SENSITIVITY, RISK ANALYSIS

## PRODUCING CORRECTIVE ACTION PLAN FOR ADAPTATION TO CLIMATE CHANGE IMPACTS

## FULL-SCALE ENVIRONMENTAL REVIEW

## IPPC AUTHORIZATION







#### REFERENCES:

Production of preliminary assessment documentation for the development of Eger Municipal WWTP - **UTB Envirotec Plc.** • Production of preliminary environmental impact assessments for Alkotás campus, the sport facility on Csörsz street and the development of the athletic field in Velence city - **University of Physical Education** • Water level rehabilitation actions of the Mosoni-Duna estuary; EIA and NATURA2000 impact assessment **ÉDUVIZIG** • Touristic and recreational development, a slalom canoe waterway, in the vicinity of Kisköre hydroelectric plant; (preliminary assessment documentation and NATURA2000 impact assessment) - **MKKSz** • Compilation of integrated environmental protection documentation and the modification of IPPC permit for the expansion of activities for FCC Hungary Ltd. Gyál site - **FCC Hungary Ltd.** • GE Hungary Ltd. Nagykanizsa lighting manufacturer; IPPC review - **GE Hungary Ltd.** • EIA of short bypass road, regarding Győr development project - **AUDI Hungary Motor Ltd.** • EIA documentation of Biogas power plant at Pécs-Pellérd WWTP **Biomű-Baranya Investment and Service Ltd.** • Environmental permit, EIA combined with integrated environmental protection permit for the expansion of Győr Sashegy inert landfill. **Győr Communal Service Ltd.** • Preliminary environmental assessment in connection with the installation of a pellet furnace **Goodrich Hungary Ltd.** • GEF – Aiming to decrease nutrient load project HU-55978. Impact assessment and cost-benefit analysis – **Ministry of Rural Development** • DRV Plc. Production of EIA of surface water system at Balatonszéplak **DRV Plc. Central** • Agro-Chemie Ltd. Preliminary environmental assessment for planned WWTP at Nagytétény site **Agro-Chemie Ltd.** • EIA for the Gönyű 2x400 MW combined cycle power plant- **ERÓTERV Rt.** • Production of preliminary EIA for pipeline between Csórrét-Csórhegy **ÉRV Plc.** • Modernization of





## MONITORING, INVESTIGATION

Our monitoring activities include sampling and on-site examination of surface waters, groundwaters, wastewaters, soil and sediments. Laboratory examinations are carried out by our accredited partners. With the help of our monitoring activities, our partners are able to check their emissions, verify their compliance to regulations and limit values. Long-term monitoring results enable us to make known probability forecasts, based on project-specific models, and to make evaluations for changing parameters, regarding the recognition of tendencies. With the help of our unique calculation models we are able to explore the consequences of actions, and we can verify the success of actions, if applicable.

In case of contaminated soil and groundwater we identify and define the nature, the quantity and the extent of the pollutants on the site by detailed investigation. The boundaries of the polluted area are calculated by modelling calculations.

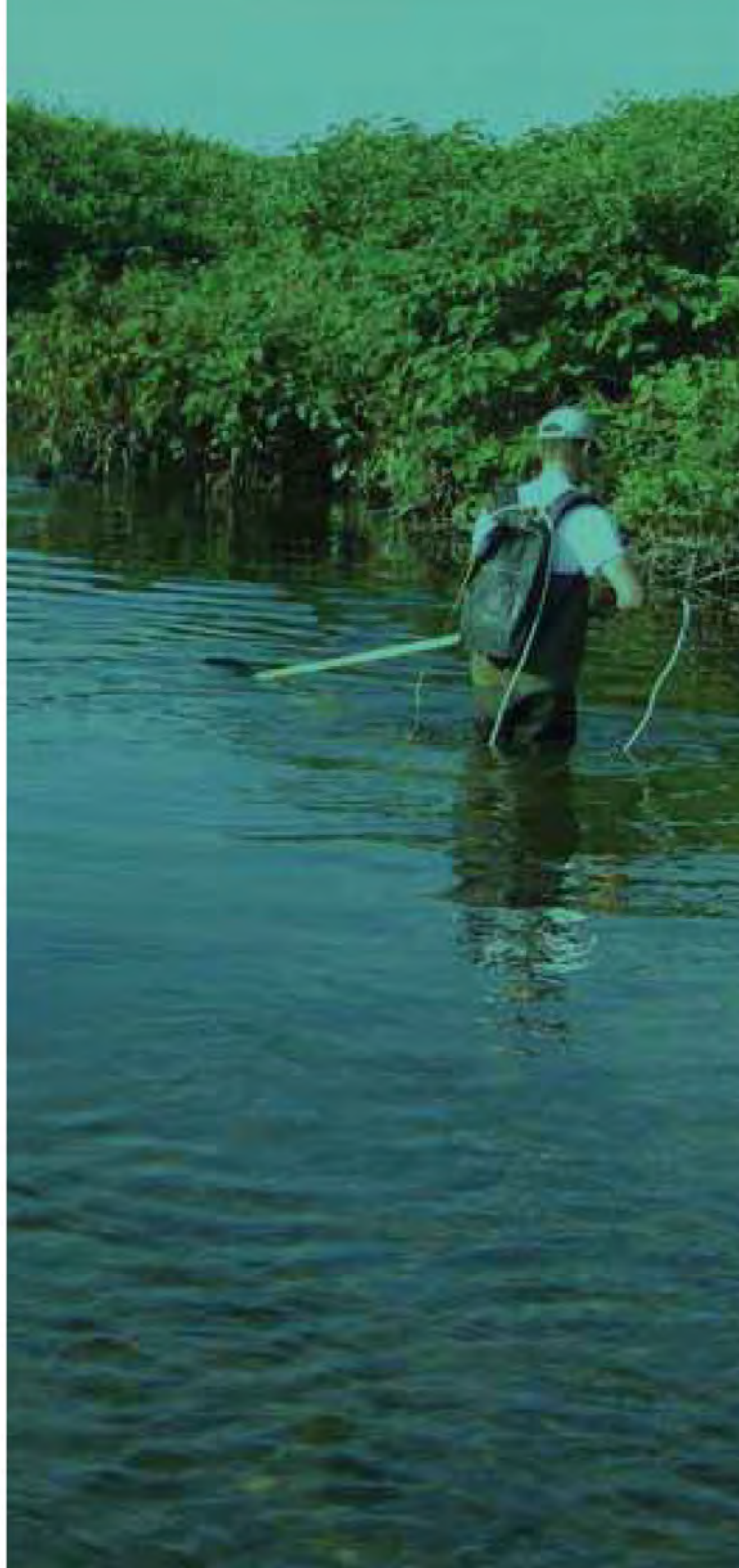
Our activities incorporate the whole process, including the examination of the baseline status, investigation of the consequences of previous activities and monitoring of the progress of the remediation processes. After circumscribing the polluted area, we carry out the environmental and human health impact assessment with a specialized software, we define the remediation aims to be achieved. As a closing of the investigation we undertake the production of the necessary technical intervention plan.



### REFERENCES:

Engine Service Veresegyház site, examination of groundwater in the groundwater monitoring system **GE Aviation Hungary Ltd.** • On the site of the former Gas plant of Óbuda, production of investigation closing documentation for the elimination of ground- and groundwater pollution, technical intervention plan, remediation monitoring plan **IMSYS Ltd.** • Planning of remediation for the Séd-Nádor channel **Tata Environmental Protection Plc.** • Annual monitoring report of Gönyű Combined cycle power plant (surface waters, groundwaters, aquatic life, bird migrations) - **UNIPER Hungary Ltd** • Operation of groundwater monitoring wells and surface water monitoring system. **Dunamenti Powerplant Plc.** • Mátrafarm monitoring **Mátrafarm Hungary Ltd.** • Monitoring of









# ENVIRONMENTAL CONSULTANCY

Our company continuously supports industrial and waste management companies in performing environmental tasks arising from their operations and help them with cost-efficient problem solving. As environmental commissioners we ensure legal compliance for our partners and leaning on the broad knowledge of our experts we provide complex solutions on all fields of environmental protection, environmental management systems, and environmental administration.

## **ENVIRONMENTAL ASSESSMENT, PROFESSIONAL SUPPORT, RELATED TO OPERATION**

### **UNDERTAKING AND COORDINATION OF ENVIRONMENTAL PROTECTION TASKS, RELATED TO OPERATION**

(WASTE MANAGEMENT, AIR QUALITY PROTECTION, SURFACE AND GROUNDWATER PROTECTION, USAGE OF HAZARDOUS MATERIALS AND PRODUCTS)

### **FULL-SCALE AUTHORIZATION AND LICENSING** (IPPC, WASTE MANAGEMENT, WATER PERMIT)

### **CARRYING OUT PLANNING AND ENVIRONMENTAL TASKS** (IMPACT ASSESSMENTS, FEASIBILITY STUDIES, SAMPLING)

### **ENVIRONMENTAL CONSULTANCY REGARDING DEVELOPMENTS, PREPARATION OF ENVIRONMENTAL INVESTMENTS**







#### REFERENCES:

Environmental commissioner and other environmental specialist tasks for HungaroControl Plc. **HungaroControl Plc.** • Administration and examination tasks in connection with engineering activities for Duna-Vértes Köze Regional Waste Management Program **OVIBER Ltd.** • Full-scale environmental commissioner tasks and coordination through continuous management contracts at Gyál, Vácrtót and Győr sites of FCC Hungary Ltd.- **FCC Hungary Ltd.** • Development of Transcarpathia waste management concept **AVE Hungary Waste Management Ltd.** • Compilation of waste management permit and authorization of operation application for FCC Hungary Ltd. Szeged site **FCC Hungary Ltd.** • Production of Waste Management Plan for Vértes Power plant Plc. **ERBE Ltd.** • Unique waste management plans for Hungarian Post Plc. (unique plans for 140 sites) - **Hungarian Post Plc.** • Lajosmizse, environmental protection study plans for the industrial site- **Visser and Smit Hanab Hungary** • Compilation of preliminary environmental protection examination documentation and the modification of IPPC permit for the expansion of activities for FCC Hungary Ltd. Gyál site **FCC Hungary Ltd.** • Complex compilation of the Environmental Protection Program for Jászberény Municipality **Jászberény Municipality** • Duna-Vértes Regional Waste Management Program - Preliminary feasibility study of the recultivation of solid waste landfill sites - **Union Project Development Ltd.** • Development of environmental protection programs for Márkháza, Kisbárcány, Nagykeresztúr settlements **Elit Group 2000 Ltd.** • Veresegyház WWTP development and the production of noise protection action plan- **Veresegyház Town Hall** • Examination of the possibility to connect Kaposmenti and Sió+ Waste management programs **Zöldfok Plc.** • Production of the Environmental Protection Program for Galgamácsa settlement **Galgamácsa Town Hall**





# LOADABILITY STUDIES

An important element of the designated objective for our surface waters in the National River Basin Management Plan is their chemical status, including oxygen balance and nutrient turnover. These parameters are highly influenced by the cleaned wastewater discharge from wastewater treatment plants and by local diffusive pollutions of river basins. An important element of the policy of prescribing limit values for wastewater treatment plants is the testing of assimilative capacity of the recipient.

Considering the self-cleaning ability of the water body, we have created a calculation tool for our clients, which shows the amount of remaining chemical assimilative capacity of the given recipient for further loads, between the initial chemical status and the objectives of the RIVER BASING MANAGEMENT PLAN (RBMP).

**LOADABILITY TESTS AS PART OF WASTEWATER  
AGGLOMERATION REVIEW DOCUMENTATION**

**LOADABILITY TESTS TO SUPPORT DECISIONS  
OF REGIONAL OPERATORS**

**LOADABILITY TESTS FOR WATER PERMIT LICENSING**



## REFERENCES:

Loadability test of Ikva, Kardos-brooklet and Répce water bodies **Sopron Waterworks Plc.** • Loadability tests of water bodies of Zala- **Zalavíz Plc.** • LOADABILITY tests of the water bodies of Benta-stream **Aqua Dotis Water technology Ltd.** • LOADABILITY test of Derék-stream for the review of sewage drainage agglomeration of Dejtár **COMPUTERV GM Ltd.** • LOADABILITY test of Váli-water upper section **Aqua Dotis Water technology Ltd.** • LOADABILITY test of Ikva-stream as the recipient of effluents from the WWTP of Sopron, compilation of limit value modification- **Sopron Waterworks Plc.**



# SITE SELECTION



We perform site selection for water management and environmental protection investments, and for the implementation and operation of various industrial facilities.

Taking the criteria of the investor into consideration, we investigate the possible investment sites, then our expert team evaluates, compares and ranks them based on infrastructural, legal, financial and other technological aspects. If needed, we produce conceptual technological plans, risk assessments, cost-benefit analyses as well.

## TECHNOLOGICAL, LEGAL AND FINANCIAL CONSULTANCY

### TECHNOLOGICAL PLANNING

### RISK ASSESSMENT

### COST-BENEFIT ANALYSIS

## REFERENCES:

Site selection for the management, disposal, recovery of sewage sludge of Budapest **Budapest Capital City Local Government** • Site selection for Etyek grape processing plant **Törley Sparkling Wine Cellar Ltd.** • Site selection for 7 water treatment plants for present and future water supply of Vientiane capital city, Laos **Körös Consult Ltd.** • Cost-benefit analysis and multi-criteria variation analysis for feasibility study within the framework of Stormwater Reservoir Construction in Vas and Zala Counties project **SOLVEX Ltd.** • Development of a conception plan for reception and management of excess sludge of wastewater treatment plants around Zalaegerszeg on the premises of Zalaegerszeg **WWTP Zalavíz Plc.** • Feasibility study for 'Wastewater treatment for South Balaton agglomeration' project - **UTB Envirotec Ltd.** • Feasibility study with financial resources study for the new Sashegy inert landfill







# STATUS ASSESSMENT, ENVIRONMENTAL AUDIT

Environmental status assessment is a baseline study that deals with the wholeness of the environment, as a complex system, describing the status of the environment, analyzing drivers and effects without evaluation. Its basic duty is to define the necessary information framework for the description of environmental status, a tool for the development of environmental policies, with which we can create an authentic view on the relationships between our aims and environmental phenomena.

Accessibility to environmental information is of utmost importance in decision making, in planning-evaluation processes and in informing the general public. Based on the information originating from data processing and evaluation, the proper actions can be made and programs can be started in order to mitigate or eliminate environmental pollutions and damages. In the same way, by integrating environmental status assessment in the planning and implementation phases, the adverse impacts of development programs and formerly implemented projects upon the environment can be mitigated.

## REFERENCES:

IPPC review documentation of Gönyű combined cycle power plant- **UNIPER Hungary Ltd.** • Evaluation of environmental performance of Gönyű combined cycle power plant - **E.ON. Power stations Ltd.** • Dunamenti Power plant Plc. baseline report regarding Százhalombatta site- **Dunamenti Power plant Plc.** • Baseline report for GE Hungary Ltd. Nagykanizsa lighting manufacturer sites- **GE Hungary Ltd.** • Phase I. environmental review of FKF Ltd. Budapest, XII. district real estate - **Metropolitan Public Area Maintenance Plc.** • Preliminary environmental reviews of the facilities of the former shoe factory in Körömend - **Körömend Local Government** • Environmental screening of Schwinn Csepel - **Ernst and Young Ltd.** • Preliminary environmental audit of Magyar Cukor Plc, due to reorientation - **Magyar Cukor Plc.** • Full-scale environmental review, extended with BAT analysis for GE Hungary Ltd. Zalaegerszeg Parts Manufacturer site - **GE Hungary Ltd.** • Phase I. environmental audit at Butler Europe Ltd. site - **BUTLER Europe Ltd.** • TVK Plc. sites auditing - **TVK Plc.** • Full-scale environmental review of Diósgyőr Steel Mill Plc. in liquidation - **Diósgyőr Steel Mill** • Full-scale environmental review of industrial wastewater treatment plant sludge reservoir of ÉPV Plc. Sirok MÁTRAFÉM site -





# STRATEGIC DECISION SUPPORT



What-where-when-how-why? Decisionmakers look for the answers to these questions. In order to have well-grounded and well-prepared plans for investments, VTK Innosystem makes decision support studies, feasibility studies, conceptual and strategic plans, and strategic environmental impact assessments for the clients. A special field of strategic decision support is site selection, which involves the co-ordinated work of specialists of many fields.

**PRODUCING DECISION SUPPORT STUDIES**

**PRODUCING CONCEPT/STRATEGIC PLANS**

**PRODUCING STRATEGIC ENVIRONMENTAL IMPACT ASSESSMENTS**

**PRODUCING FEASIBILITY STUDIES**

## REFERENCES:

Strategic review, sewage sludge recovery and disposition project development conception – **National Water Directorate** • Development of Zsámbék WWTP, production of parts of the decision support technical study - **Aqua Dotis Water technology Ltd.** • Decision support study for the construction of rafting and slalom waterway at Kisköre Fish Pass – **Hungarian Canoe Federation** • Decision support study, options analysis in connection with the water level rehabilitation actions of the Mosoni-Duna estuary – **ÉDUVIZIG** • Strategic Environmental Reviews - **TRENECON Ltd.** • Decision support study and licensing processes for the implementation of intake structure and WWTP at Ecsér settlement - **Ecsér Public Utilities Ltd.** • Specialist availability for the development of KEOP (EEOP) evaluation system - **COWI Hungary Ltd.** • Status analyzing and decision support study, nitrate removal in drinking water systems - **Zenon System Ltd.** • Review and evaluation of expected effects of former and future intervention strategies for the improvement of aquatic environment in Szigetköz - **VITUKI public benefit purpose entity.** • Improving the navigability of the River Danube - **VITUKI public benefit purpose entity.**















## RESEARCH & DEVELOPMENT

Several founding members and colleagues of our company possess scientific experience in water research. This background has given ground for the professional performance of several, high-degree scientific tasks. Our research development tasks are primarily carried out on the fields of water and wastewater technologies. We give professional support to research centers, university students and young researchers.

**MAINTENANCE AND FURTHER DEVELOPMENT OF R&D IDEAS**

**PROFESSIONAL PREPARATION OF R&D PROJECTS**

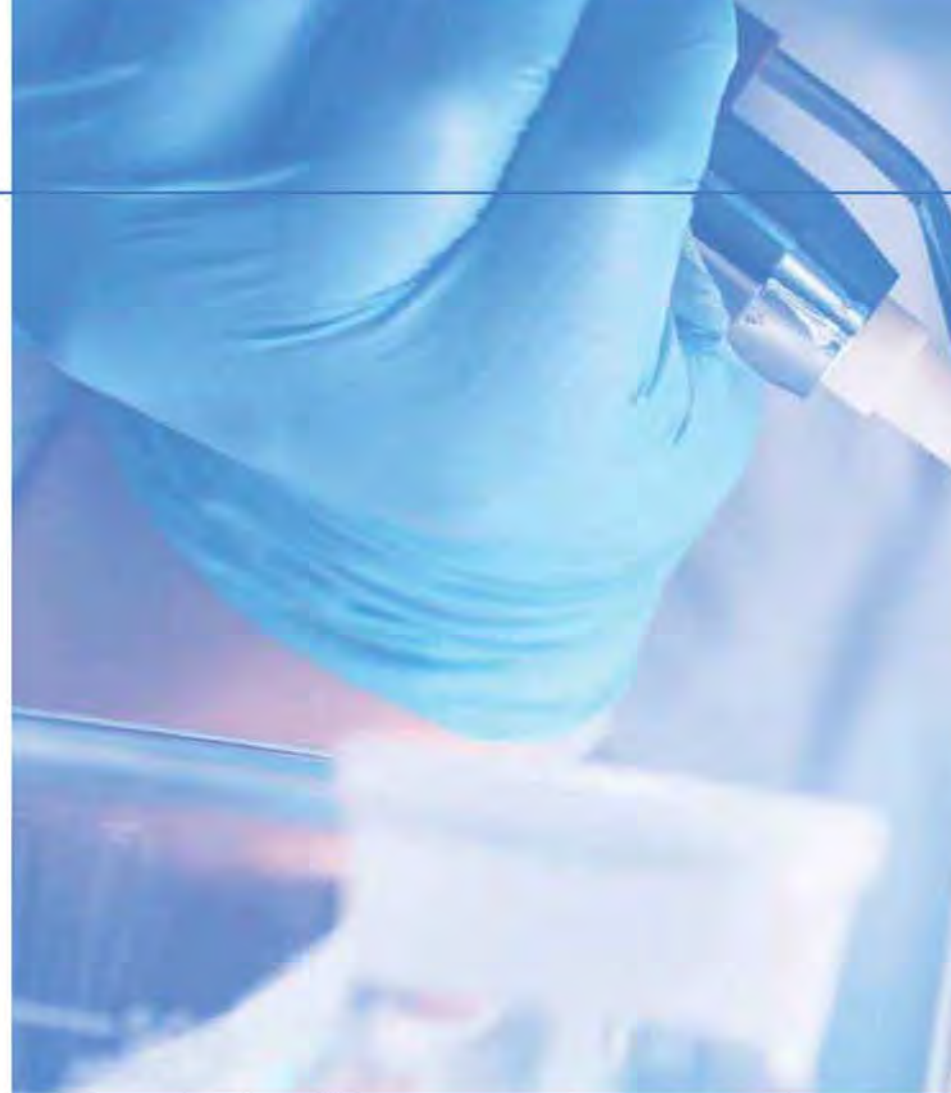
**ARRANGEMENT OF R&D CONSORTIUMS, CAPACITY MANAGEMENT**

**CARRYING OUT RESEARCH PROJECT WORKS**



### REFERENCES:

Metal recovery from waste through biohydrometallurgy methods **National Research, Development and Innovation Office** • The phenomenon and study methods of bacterial adhesion - **BME department of Sanitary and Environmental Engineering** • Local experimentation and cooperation in result evaluation on Eger Industrial Park Lot no. 9847. real estate TPH polluted premises - **Gallavit Ltd.** • Professional supervision of experimental operation of arsenic removal equipment, designed by AZENON - **Zenon Systems Ltd.** • Feasibility study of biogas district heating supply system - **Zalavíz Plc.** • Modelling presentation of success of new technology for the remediation of Szekszárd shooting range water reserve- **Mid-Transdanubia Water Directorate** • Study of heavy metal















Our colleagues regularly give presentations, lectures to national and international experts of the water sector and educational institutions on the fields of water technology, water management, water sector management in Hungarian and English. Many of our senior experts are guest speakers at universities at home and abroad. Our company devotes great attention to the support of professional development of young colleagues (thesis consultancy, drawing up opponency).

## ORGANIZING AND IMPLEMENTING THEMATIC PROFESSIONAL COURSES IN WATER MANAGEMENT

### LECTURES IN WATER TECHNOLOGY AT SCIENTIFIC LEVEL

#### SPECIAL EDUCATIONAL TASKS

#### REFERENCES:

Aquatic habitat rehabilitation lecture – **Hungarian Vocational Training Society** • Educational tasks in drainage systems – **Körös-Consult Ltd.** • National Competence Survey (OKM) carrying out coding tasks – **Education Authority National Public Education Evaluation and Exam Office** • Environmental protection in the EU – lecture program recommendation **ISO CONSULT Ltd.**







# PUBLIC UTILITY ASSET EVALUATION

Our company is a member of the Public Utility Asset Evaluation Cluster (KÉK), therefore we provide high level services with the cluster's own development software TIKÁ, in the whole spectrum of public utility asset evaluation. Rolling development plans, based on asset assessment experts' reports are indispensable for all water utility systems, the production of these require serious engineering work. Our company undertakes the processing of asset assessments, that comply with the content and format requirements of the Water Utility Supply Act, and the production of an output document from which the rolling development plan is easy to be produced.

## PRODUCTION OF GEODETIC SURVEYS

### REPLACEMENT, CORRECTION AND DIGITALIZATION OF MISSING PUBLIC UTILITY MAPS (E-UTILITY)

### IDENTIFICATION OF CERTAIN OBJECTS, OBJECT GROUPS

### MAKING INVENTORIES

### REVIEW OF OBJECTS

### CONCLUSION OF CONSISTENCY INDEXES AND REPLACEMENT VALUES

### DEFINITION OF REAL VALUES OF CERTAIN ELEMENTS

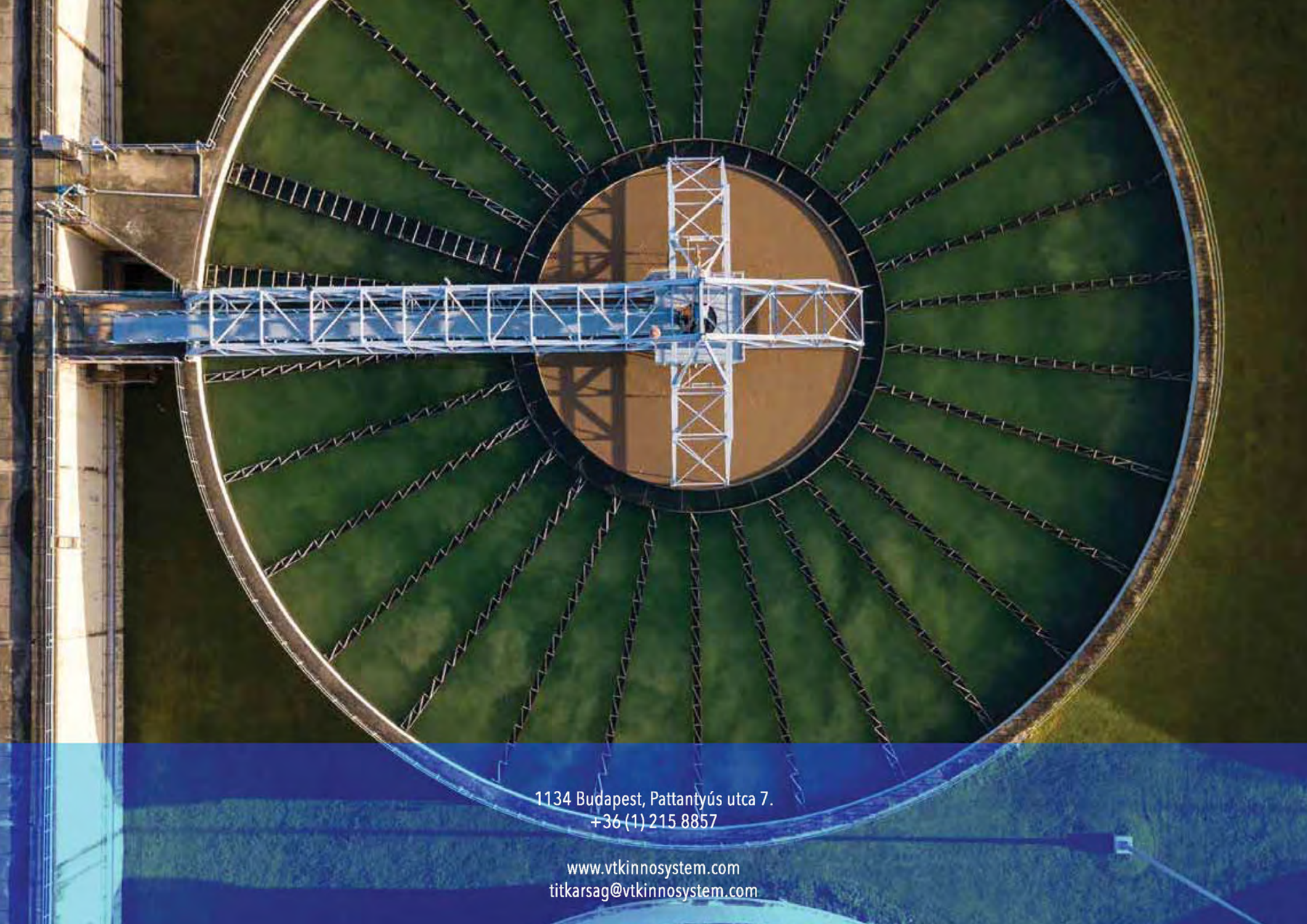
### PRODUCTION OF FULL-SCALE INVENTORIES



## REFERENCES:

Water management and water quality improvement of Ráckeve (Soroksár)-Danube branch; asset assessment of new wastewater assets after the implementation of the removal of pollutants from the foreshore project - **RSD Foreshore Local Government Association** • Public utility asset assessment tasks at Balatonőszöd, Balatonszemes, Balatonlelle, Balatonboglár, Balatonfenyves, Fonyód, Balatonmárfiafürdő, Balatonkeresztúr, Balatonberény, Balatonszentgyörgy, Vörs settlements - **BDL Environmental, Design, Service Ltd.** • Public utility asset assessment of Kehidakustány, Zalaszentlászló, Vindornyaszlós as well as Zalacsány and Túrje settlements' existing sewer systems and existing WWTP, operated by North Zala Water and Wastewater Disposal Plc. - **Zalavíz Plc.** • Public utility asset assessment within the framework the construction of the sewer system and wastewater treatment at Nagydorog project - **Kapos Innovation Consultant**





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