

Project references of ELANIT Consulting

Year	Client	Project title	Project description	ELANIT Project scope
2020-2021	GE Grid Solutions SAS - France	IT Business Consultant support for the Market System delivery of Transmission System Operator of Cyprus	Delivery of a Balancing Market Management system to the Transmission System Operator of Cyprus by General Electric. The electricity market solution consists of a Forward Market & Auctions of balancing reserve, a Balancing Market with Integrated Scheduling Process and a Real-time Balancing Market according to EU requirements, a Day-ahead Market (power exchange) and related financial Settlements.	- preparation of Statement of Work for Forward Market & Auctions, for Day-ahead Market and for Balancing Market - business analyst tasks to understand client business requirements, to specify tasks for software developers and testers and to train system users
2020	MEKH Hungarian Energy and Public Utility Regulatory Authority - Hungary	Study: Obstacles of Investments in battery and hydrogen based Electricity Storage projects	Based on a detailed comparison of German and Hungarian regulation, the study identifies main regulatory obstacles of large scale battery based electricity storage projects and proposes concrete steps to eliminate these obstacles. The study also provides the results of an industry-wide survey about battery and hydrogen based electricity storage. A market analysis provides data on alternative electricity storage technologies. A detailed calculation for the return of investment is provided under actual Hungarian regulatory environment to characterize actual storage investment conditions.	Preparation of the entire study
2020	GE Grid Solutions SAS - France	IT Business analyst support for ADMIE Balancing Market Project	Delivery of a Balancing Market Management system and related Financial Settlement system to the Greek Transmission System Operator. The Balancing Market consists of an Integrated Scheduling Process according to EU requirements and a Real-time Balancing Market with optimisation of activated balancing services.	Business analyst tasks to understand client business requirements, to specify tasks for software developers and testers and to train system users
2019	GE Grid Solutions SAS - France	IT business support for NOIS project	Delivery and continuous development of a Market Information System for the 4 Nordic Transmission System Operators and the Nordic Regional Security Coordination. Upgrading the design notes and test documentation due to the new business requirements resulting from handling multiple NEMOs (Nominated Electricity Market Operator), testing new functionalities.	Business analyst tasks to understand client business requirements and to specify tasks for software developers and testers. Specification of new multiple NEMO business processes and data exchanges.
2019	Magyar Biomix - Hungary	Investment analysis of a large scale battery storage application connected to a solar power plant	Analysis of a large scale battery storage application supporting a solar power plant. Introduction to the Hungarian support schemes for renewable electricity generation. Creation of detailed business models and scenarios on the Hungarian electricity market using a time series model. Calculation of return of investment. Mapping the permitting and installation process of a battery storage unit.	Preparation of the entire study
2018-2019	ALTEO Deutschland - Germany	Identifying business opportunities of ALTEO in Germany	Analysis of the German EEG (renewable energy) law and the ancillary services market. Creation of business models and scenarios: battery storage providing primary reserves, wind power plant, solar power plant, biogas plant. Mapping the permitting and installation process of a battery storage unit. Developing a time series model for providing primary reserves with a battery storage.	Preparation of the entire study
2019	Sequester - Hungary	Investment analysis of large scale battery storage applications under Hungarian regulatory environment	Analysis of several large scale battery storage applications from investment point of view. Creation of detailed business models and scenarios for business cases: provision of primary reserves, market arbitrage. Developing a time series model for providing primary reserves services with a battery storage. Calculation of return of investment. Mapping the permitting and installation process of a battery storage unit.	Preparation of the entire study
2019	Center for University-Industry Cooperation of Technical University of Budapest (BME FIEK) / MVM Zrt. - Hungary	Study and development of a prototype software solution for Pre-intraday cooptimized electricity market model	Study of a pre-intraday cooptimized power market model including the potential integration into the Hungarian market. As part of the study, development of a pre-intraday IT solution supporting the cooptimized market operation consisting of a market management application and a market solver engine.	Business analyst tasks on the market application part of the pre-intraday IT solution: determining business requirements, functional specification, coordinating with developers, testing.
2019	MVM (Hungarian Electricity Works) Zrt. - Hungary	Regulatory options for the curtailment of solar power plants	Study analysing the potential regulatory tools for the curtailment of solar power plants in the Hungarian power market based on the actual German regulation.	Preparation of chapters of a study describing the German regulatory environment for the curtailment of solar power plants
2018	Municipality of Békéscsaba - Hungary	Feasibility study of Békéscsaba Smart Grid	Feasibility study of a smart grid system on the premises of a sport complex. The sport complex is the target location of three major development projects: expansion of the sport infrastructure, geothermal heating and the smart grid system. The planned smart grid system includes a solar power plant, a battery storage unit and a smart grid center. The sport venues will be connected as consumers. The main challenge of the project is harmonising the three projects both in time and space.	Participating in the preparation of all parts of a feasibility study
2018	Budapest Power Plant - Hungary	Impact of the European balancing market integration on the Hungarian market	For this project the final version of the ENTSO-E balancing network code was summarized, and the current state of the first implementation projects were described. The market rules of certain balancing markets (Germany, Romania, Slovakia, Czech Republic etc.) were described as well, and the current price levels were analysed. The available balancing capacities of these countries and their reserve demand was shown, along with the cross-border capacities that could be used for the exchange of balancing energy with Hungary.	Preparation of the entire study
2018	NKM DSO - Hungary	Strategy for the development of the distribution network	Strategy for the development of the distribution network of NKM, taking into account the effects of the large scale solar power plant development in its service area.	Low voltage network model calculation
2017	MEKH Hungarian Energy and Public Utility Regulatory Authority - Hungary	Implementation strategy of Demand Side Response for the Hungarian electricity market	Based on a comprehensive insight into the international DSR market regulation as well as the actual status of the Hungarian electricity market, the report gives detailed analysis of the market model concepts for the implementation of Demand Side Response (DSR) and proposes an implementation model. Moreover, the study estimates the available DSR capacity in the country, provides details of the necessary technical infrastructure needed to operate DSR services and analyses the potential effects of DSR products on the day-ahead energy market.	Preparation of the entire study

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2017	Project company - Hungary	Development of a smart grid center	The aim of this project is to develop a Smart Grid Center which is capable of managing a balancing circle, of trading energy on organised markets, of providing balancing services for the TSO and of managing its own energy balance in real time. Gas generators, diesel engines, consumers, renewable generators or energy storage devices will be able to join the center. This IT solution will be utilized in multiple smart grid projects in Hungary.	Development of the business cases and the use cases of the system
2017	Crown Wine House - Hungary	Solar Power Plant Permit	A 20 MW solar power plant project required a permit for its operation and an application for the feed-in-tariff during the preparation phase of the project.	Compiling the permits and creating the business model
2016	MAVIR Hungarian Independent Transmission Operator - Hungary	Analysis of the current balancing market rules and performance	The Hungarian Transmission System Operator reviews the balancing market framework every few years, trying to identify possible changes to the rules that would lower the cost of balancing for the TSO. In this study, analysis of the bids and results from the quarterly and weekly tenders for primary, secondary and tertiary reserves for the 2015-16 period was conducted in order to identify possible cost savings. The study had two main focus: how larger power plants taking part in the tenders influence the market price of balancing reserves and the reserve supply, and how the procured capacity should optimally be divided between the quarterly and weekly tenders by the TSO.	Preparation of the entire study
2016	MVM Partner - Hungary	European market modelling software tool	In the framework of this project a European electricity market modelling software solution was developed for the largest Hungarian energy company. The goal of this tool is to predict the market price for each country, the merit order list of the power plants and the volume of cross border trades for each cross border connection. The tool is based on the MATLAB MATPOWER optimal power flow solver, and uses data from various public and private sources: power plant data, consumption of countries, cross border capacities, fuel prices, operation and maintenance costs, CO2 costs and parameters of generation technologies.	Function specification of the software tool and collection and preparation of the input data.
2015	ÉMI Non-Profit Company for Quality Control and Innovation in Building - Hungary	Final study of the Concerto micro grid project	Building on the previous study of ELANIT for ÉMI, the microgrid model is updated, taking into account the available registered measurement data. Further development options are identified. Preparation of the required technical documents to close the Concerto project.	Preparation of the entire study.
2015	ALTEO Group - Hungary	Effects of the Network Code on Electricity Balancing on the Hungarian reserve market	ALTEO provides balancing services to the Hungarian TSO utilizing a Virtual Power Plant. The Network Code on Electricity Balancing will open up national markets and cross-border activation will be mandatory for all countries. The study aims to analyze how the Hungarian reserve market will change after the Network Code entry into force.	Preparation of the entire study.
2015	GSE Georgian State Electrosystem - Georgia	SCADA/EMS system upgrade	In preparation of the upcoming electricity market liberalization in Georgia the local TSO is planning to upgrade its SCADA/EMS system. For this purpose the capabilities of the current system had to be mapped, and an RFI procedure for the new system had to be carried out.	Mapping the functionality of the current SCADA/EMS system in operation.
2015	Vértes Power Plant - Hungary	Feed-in-Tariff for electricity generation based on RDF/SRF fuels in Hungary	A major Hungarian coal power plant will be shut down in the near future, because the operation of the mine supplying the plant with coal is also being shut down. It would be possible to keep the plant going using RDF and SRF fuels produced from waste. To create a business model it must be examined how electricity generated from these fuels can be supported by the current Hungarian Feed-in-Tariff system. This system is subject to change in the near future because Feed-in-Tariff is no longer considered an accepted form of state aid by the European Commission as described in their communication about "Guidelines on State aid for environmental protection and energy 2014-2020". The study also examines how the transformation of this system will effect the project at the power plant.	Preparation of the entire study.
2015	Company involved in data center projects - Hungary	Energy storage in data centers	R&D project about all aspects of data center establishment and operation consisting of multiple studies. This study was examining how energy storage devices could be utilized in data centers.	Literature research about the properties of available energy storage technologies and their typical utilization in data centers for demand response.
2015	ISD Portolan - Hungary	Utilization of electricity produced by regenerative braking systems of cranes	As part of a planned upgrade of a port at the Danube river, it was examined how the company operating the cranes could sell the electricity generated by the regenerative braking systems of the cranes.	Preparation of the entire study.
2014	MAVIR Hungarian Independent Transmission Operator - Hungary	Procurement and activation of cross-border balancing services	The ENTSO-E Network Code on Electricity Balancing makes it mandatory for TSOs to exchange balancing services with neighbouring countries. The Hungarian TSO with this study examined how this change will effect the Hungarian ancillary services market.	Detailed analysis of the related Network Codes. Overview of the European cross-border balancing pilot projects
2014	Project company for an e-mobility project - Hungary	E-mobility project	The study examines the possibility of using electrical buses for public transportation in small Hungarian cities and their agglomeration.	Data collection about the vehicles and the target area of the project, and preparation of a chapter about the process of connecting DC fast chargers to the distribution network.
2014	ALPIQ Csepel Kft. - Hungary	Support for creation of corporate strategy regarding the reserve market	The study presents the Hungarian reserve market, and introduces the ENTSO-E Network Codes.	Involved in all parts of the project.
2014	MVM Partner - Hungary	Feasibility study of a virtual power plant	Virtual power plants (VPP) provide an opportunity for smaller power plants to participate in the reserve market from where they are usually excluded. MVM Partner decided to create a VPP in order to expand its market share and required a feasibility study for it which included the business model based on the analysis of the Hungarian reserve market.	Involved in all parts of the project.
2014	KOM Központi Okosmérés Zrt. - Hungary	Smart metering pilot project	The Hungarian Government decided to create a smart metering pilot project independent from the pilots previously realized by the DSOs. For this purpose a feasibility study and detailed tender documentations had to be written.	Participating in tasks related to the technical tender documentation for the procurement and installation of the smart meters and system integration.

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2013	GDF Suez - Hungary	Reserve Market Strategy of Dunamenti Power Plant	Preparing a study for GDF SUEZ in Hungary to optimize the operation and possible development of its power plant units so as to maintain their economically effective operation and maximize the business opportunities defined by the regulation.	Involved in all parts of the project.
2013	MAVIR Hungarian Independent Transmission Operator - Hungary	SCADA/EMS system upgrade	In order to upgrade its SCADA/EMS system the Hungarian TSO issued a Request for Information (RFI) and a Request for Quotation (RFQ). Based on the RFQ one company was invited to make an offer for the system upgrade. Delivery of the system is currently underway.	ELANIT participated in the technical specification of the system during the RFI and RFQ phase, in the analysis and evaluation of the offers submitted. Later ELANIT took part in analysing the system documentation submitted by the selected company, checking the compliance with the requirements. Support in the negotiations with the vendor.
2013	FŐTÁV Budapest District Heating Company - Hungary	Market potential for natural gas fired engines in Hungary	Preparing a feasibility study on the possible ways of selling produced electricity by several natural gas-fired small-scale gas engines (small scale CHP) operated by a district heat supplier.	Preparation of the entire study.
2013	ÉMI Non-Profit Company for Quality Control and Innovation in Building - Hungary	Feasibility study of a micro grid	Preparing a feasibility study for a micro grid including small scale energy producers based on waste and renewable energy sources, as well as office buildings. The assignment was part of an EU funded Concerto project (PIMES).	Preparation of the entire study.
2012	A.W.E. - Hungary	Application of energy storage solutions on the power market	Preparing a study on the possible applications of battery-based energy storage solutions on the electricity markets. The study gives an overview on the possible storage applications throughout the whole value chain of electricity, examines the market potential of energy storage solutions based on international surveys, and gives model based net present value calculations for selected storage applications including sensibility analysis of results	Preparation of the entire study.
2012	MAVIR Hungarian Independent Transmission Operator - Hungary	STORAGE pilot project	Preparing a study on the application of battery-based energy storage system for the provision of secondary reserve.	Preparation of certain parts of the study related to the general framework of secondary reserve procurement and activation in Hungary, the analysis of actually reserved and activated volumes and related costs based in historical data.
2012	MAVIR Hungarian Independent Transmission Operator - Hungary	ICT Strategy	In cooperation with other consulting companies an Information and Communication Technology strategy was developed for MAVIR. An important part of the document related to the IT application portfolio of MAVIR and the strategic statements related to it. The strategy document constitutes a mid-term basis for the future development of the whole ICT system of MAVIR.	Preparation of the application portfolio of MAVIR by collecting necessary data, categorizing the information, preparing recommendations for the ICT strategy related to the IT applications.
2012	MEKH Hungarian Energy and Public Utility Regulatory Authority - Hungary	Smart grids in Hungary	Under the framework of the project a study was prepared to analyse the consequences of smart grid initiatives for the Hungarian power system, and to identify the possible steps the Hungarian energy companies should make in this regard. High level smart grid pilot project plans were identified according to market roles. International and national developments in smart grids were summarised.	Preparation of certain parts of the study: international review of smart grid developments, description of proposed pilot projects.
2011	MAVIR Hungarian Independent Transmission Operator - Hungary	The effects of smart grid initiatives on power system operations in Hungary	Under the framework of the project a study was prepared to analyse the consequences of smart grid initiatives for the operation of the power system, and to identify the possible steps the Hungarian Transmission System Operator should make in this regard. High level smart grid pilot project plans were developed such as the set-up of a data centre for the collection and management of smart metering data, and application of battery-based energy storage system for secondary reserve purposes.	Preparation of certain parts of the study: international review of smart grid developments, analysis of possible battery-based energy storage solutions for the challenges in the provision of secondary reserve.
2011	MAVIR Hungarian Independent Transmission Operator - Hungary	Preparation for the EMS/SCADA system upgrade	The aim of the project was to draw a long-term vision for MAVIR's EMS/SCADA system before the next system upgrade project starts. The report examined the EMS product road map of the actual system vendor, evaluated the IT system support capabilities both internal and external of MAVIR, analysed the pros and contras of a potential change of the system vendor, and made a deep insight into the consequences of the upgrade for the related 3rd party software tools. The report gave a high level schedule and budget plan for the planned upgrade.	Preparation of the complete report, interviews with MAVIR, possible EMS system vendors (Siemens Austria, ALSTOM, ABB) and 3rd party software vendors.
2011	MAVIR Hungarian Independent Transmission Operator - Hungary	IT action plan for maintaining business continuity	The aim of the project was to list the relevant IT actions needed to keep the business continuity for the Hungarian Power System Operator. The report examines the actual IT system in terms of business continuity and identifies the necessary steps to ensure the necessary level of security.	Preparation of the survey on the actual status, and recommendations for keeping business continuity for certain applications.
2011	EDF Hungary - Hungary	Strategic workshop	A workshop was organised for the local and central management of EDF Hungary in order to identify the long term strategic view on the Hungarian branch. The task included the organisation, the technical lead of the workshop and the preparation of discussion areas potentially interesting for EDF using local market knowledge and EDF companies in Hungary.	Technical lead of certain parts of the workshop and the preparation of discussion areas potentially interesting for EDF.
2010	MAVIR Hungarian Independent Transmission Operator - Hungary	IT application review	The aim of the project was to draw a detailed overview on the high number of IT applications used by the TSO, in order to identify rationalization potential.	Preparation of the study by collecting necessary data based on specific template, categorizing the information, preparing recommendations for the IT department. The resulted database was an essential tool for IT system developments and in implementing new functional requirements.
2010	MAVIR Hungarian Independent Transmission Operator - Hungary	Analysis and strategy for the procurements of ancillary services in Hungary	A study was performed to analyse the actual functioning of markets for the procurement of ancillary services (reserve capacity for balancing energy, voltage-var control, black start, etc.) for Hungarian Transmission System Operator. The study was a preparation activity for the decision of improving the market rules related to the ancillary services products.	Preparation of the study dealing with and proposing solution to actual Hungarian problems in the ancillary services markets. Benchmark of international practice served also as a tool for defining a long term view on the market developments.