

• Source (reference)	Cost-benefit study of Wind Tunnel (WT)
• Sector	Basic System - Weather Observation
• Sub-sector	Calibration of equipments (anemometers)
• Case Study Name	
• Case Study Summary	HMS has meteorological network with 100 automatic equipments including anemometers. Regular calibrations of wind speed and direction tools are necessary for ISO 9001 rules. Investment was included in the medium term strategic plan of HMS.
• Case Study Description	
○ Location of study	Hungary, Budapest, HMS.
○ Tools employed / analysis methods	Description of demands, alternatives, cost and benefits.
○ Description of application	<p>Precise wind data are essential for good weather forecast and alarms. False data has harmful indirect effect on economy.</p> <p>Trajectory models of air pollutants needs correct wind data for e.g. nuclear alarms system.</p> <p>Windenergy sector has demand on good quality wind data, which are the basic of cost benefits studies for investors.</p>
○ Outcomes of application	<ul style="list-style-type: none"> <li>• more precise anemometers,</li> <li>• better weather forecast,</li> <li>• more reliable trajectory modeling for nuclear alarm system,</li> <li>• wind energy applications,</li> <li>• calibration service for outsiders.</li> </ul>
○ Cost/Benefits	<p>Cost: price of equipment, delivery, installation, training, rebuilding, staff, operation: (184 kEUR)</p> <p>Benefits: (indirect) more valuable data, better basic info for e.g. insurance companies, climate studies, more possibilities and income from different projects, calibration of anemometers for partner institutions, and enterprises.</p>
• Characteristics of the Case Study	At that time it was the single WT in the country.
○ Consultation mechanisms	As an alternative solution in early stage my

	<p>colleagues negotiate with Slovakian Hydrometeorological Institute about the possibilities of rented calibration.</p> <p>Further consultation happened in the framework of public procurement with international firms.</p>
○ Structural interface	WT is big and noisy equipment, so it needs quite a large room. It is connected with a PC. Staff was trained, there was no need for new employee.
○ Delivery mechanism	Result of calibration printed as a report.
○ Feedback mechanism	Better data quality (input), better products (output).
○ Review Mechanism	
○ Other Relevant Information	
● Project Logistics	
○ Resources Used	financed by HMS
○ Data Requirements	no
○ Economic Expertise Required	Benefit study before the investment and after the first year. (Made by Gábor Kis-Kovács)
● Lessons learned	<p>Lots of technical problems arose.</p> <p>WT is ideal for calibration of HMS anemometers, but there is no business (demand) for outsiders.</p>
● Best Practice Advice	<p>It is easy to handle and fast to use.</p> <p>It is worth to accredit the laboratory.</p>
● Possible future advances	In case of better marketing it might be profitable.
● Comments	
● URL	
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