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MINISTRY OF FINANCE

INNO PROVEMENT

Market price assessment methodologies

- Thematic paper -

Translating Industry 4.0 to improved SME policy instruments targeting innovation

Project code: PGI05280

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1. Executive Summary

The thematic paper on market price assessment methodologies sums up the experience and practices of the INNO PROVENT project partners.

With 8 partners from 7 regions INNOPROVEMENT aims at improving SME PIs targeting innovation activities and adapting them to requirements set by I4.0. This overall objective will increase the share and number of SMEs successfully implementing I4.0 related innovation projects in the partners' regions and countries. 7 thematic issues are explored by partners through intense experience exchange:

- 1) Innovation in software development;
- 2) Effectiveness of public money used to support industrial R&D under I4.0;
- 3) Introducing I4.0 to traditional industries;
- 4) Definition of I4.0 public policy initiatives;
- 5) Adjusting calls to I4.0 requirements;
- 6) Market price assessment methodologies;
- 7) Definition of an I4.0 maturity evaluation matrix.

Market price assessment of budget items is a relevant issue for managing authorities and intermediary bodies. Industry 4.0 related projects often include higher than average IT costs (software and app development, software, hardware and database purchases, etc), in which overpricing is a more frequent issue than in other cost types. In the case of overpriced projects budget items do not reflect market prices. In such cases, part of the grant is unduly approved/paid to the beneficiary. With the use of effective market price assessment methodologies overpricing can be reduced and/or eliminated. The paper introduces a number of practices from the project partners' experience.

The transnational thematic meeting that focused on the market price assessment issue was organised by Ministry of Finance online on 3-4 November 2020 due to the pandemic. Based on partner contribution the thematic host compiled the thematic paper.

The thematic paper is a living document and can be updated if further relevant information comes up that is worth including in it. The thematic paper is published on the homepage of INNO PROVENT.

2. Introduction

2.1 Project summary

Industry 4.0 (I4.0) affects innovation activities of companies throughout Europe to a dynamically increasing extent. Failing to turn production or service provision adapted to I4.0 results in losing clients and markets. In our project they are primarily SMEs that we intend to assist so that they can better address the challenges this new paradigm imposes to increase their competitiveness.

Figure 1: Basic project data

Full project title	Translating Industry 4.0 to improved SME policy instruments targeting innovation
Partnership	<ul style="list-style-type: none">▪ 8 partners▪ 7 Managing Authorities and/or Intermediary Bodies▪ 1 advisory partner from Hungary
Project budget	<ul style="list-style-type: none">▪ Total project budget: EUR 1,767,677▪ ERDF funding: EUR 1,481,043.45 (funding rate: 84%)▪ Contribution of partners: EUR 286,633.55
Duration	<ul style="list-style-type: none">▪ Phase 1 – project implementation: June 2018 – May 2021▪ Phase 2 – monitoring of action plan implementation: June 2021 – May 2023
Funding programme and programme specific objective	<ul style="list-style-type: none">▪ Interreg Europe▪ Improving innovation delivery policies

Partners' experience suggests that policy instruments (PIs) targeted to SME innovation often struggle to support I4.0 related projects efficiently. With 8 partners from 7 regions INNOVEMENT aims at improving SME PIs targeting innovation activities and adapting them to requirements set by I4.0. This overall objective will increase the share and number of SMEs successfully implementing I4.0 related innovation projects in the partners' regions and countries.

7 thematic issues are explored by partners through intense experience exchange:

- 1) Innovation in software development;
- 2) Effectiveness of public money used to support industrial R&D under I4.0;
- 3) Introducing I4.0 to traditional industries;
- 4) Definition of I4.0 public policy initiatives;
- 5) Adjusting calls to I4.0 requirements;
- 6) Market price assessment methodologies;
- 7) Definition of an I4.0 maturity evaluation matrix.

Sharing transferable good practices from these 7 thematic issues is central among project activities. Using the outcomes partners elaborate action plans to improve their PIs. Improvements of the addressed PIs (mainly calls for proposals) will take place primarily at the level of management of the instruments.

The composition of the partnership contributes substantially to durability of project results since the 7 action plans will be elaborated by MAs and IBs directly responsible for the management of the addressed PIs. INNOPROVEMENT's approach ensures 4 levels of learning.

2.2 Relevance of the subject

As introduced in the application from of the INNO PROVEMENT project, it is primarily SMEs that our partnership intends to assist so that they can better address the challenges of Industry 4.0. Our partners observe that ICT technologies become indivisible part of innovation projects implemented by SMEs incl. software and app development, software, hardware and database purchases let them be the core part of the project or just efficient tools contributing to the project objectives. The trend can be clearly traced in the daily operations of MAs/IBs responsible for ESIF policy instruments (PI) targeting the innovation of SMEs, as well: a considerably high and further growing stake of project proposals submitted by SMEs for funding fall under the I4.0 domain.

At the same time partners' experience suggests that policy instruments targeted to SME innovation often struggle to support such projects efficiently. Challenges in the field include:

- tailored design of call for proposals,
- defining innovation in the field of app and software development;
- market price assessment of budget items in submitted project proposals;
- effective use of hardware and software, etc.

Policy instruments (mainly in the form of open calls for proposals) that do not tackle these challenges bring along frustration both to MAs/IBs (failure to meet OP objectives, audit risks,

absorption issues: under and oversubscription of funds, low quality project proposals) and to potential/actual SME beneficiaries (too strict constraints on eligible costs, incomprehensible objectives of calls, inexplicable budget cuts).

As explained above market price assessment of budget items is a relevant issue for managing authorities and intermediary bodies. Industry 4.0 related projects often include higher than average IT costs (software and app development, software, hardware and database purchases, etc), in which overpricing is a more frequent issue than in other cost types. In the case of overpriced projects budget items do not reflect market prices. In such cases, part of the grant is unduly approved/paid to the beneficiary. With the use of effective market price assessment methodologies overpricing can be reduced and/or eliminated

Figure 2: Market price assessment methodologies

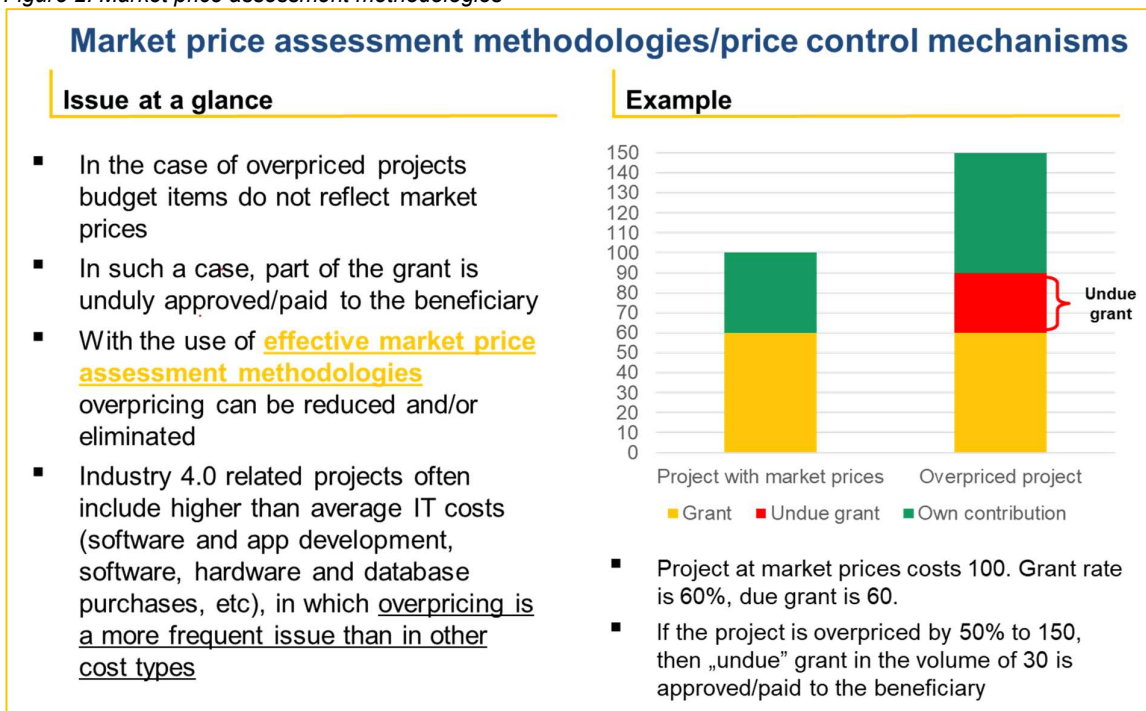
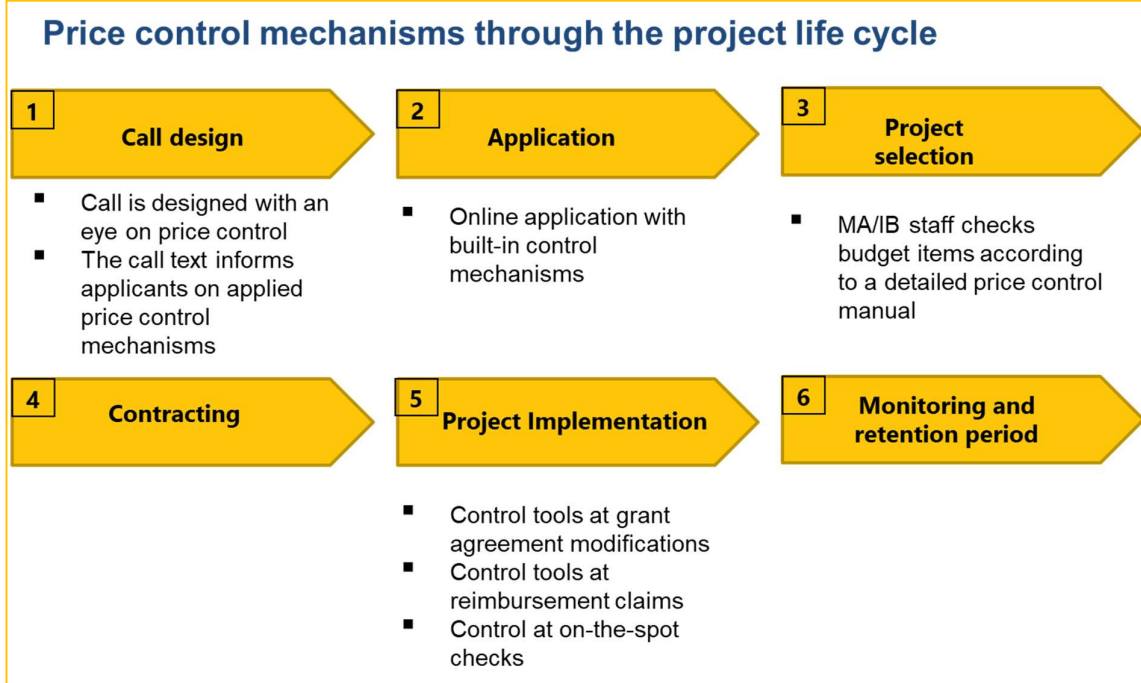


Figure 3: Price control mechanisms through the project life cycle



3. Methodology

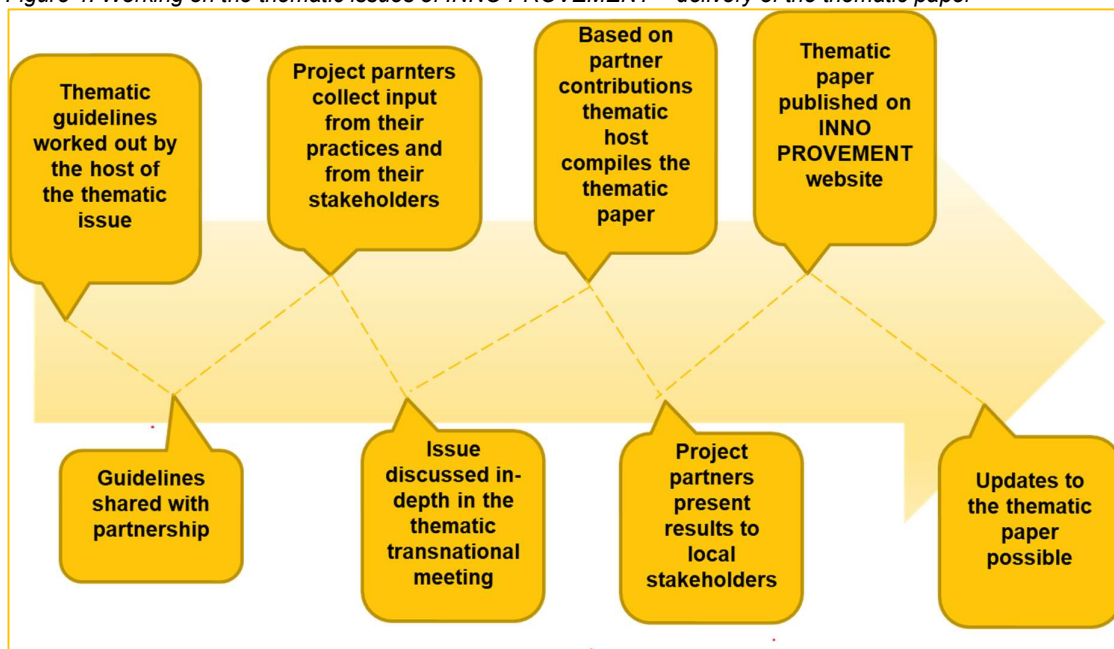
The seven thematic issues of the project are explored along the same structure in INNO PROVEMENT. The “host” of the thematic issue works out guidelines that give a comprehensive overview on the subject. As it is the Ministry of Finance, Hungary that hosts the subject of market price assessment, it provided guidelines to project partners. The guidelines present the thematic issue in detail so that project partners have a good understanding of the issue, they can collect relevant input from their practices and ask for inputs from local stakeholders. The guidelines have been prepared based on interviews with key staff members at the Ministry of Finance, furthermore a preparatory workshop was organised to collect relevant input.

This way, the guidelines help project partners get prepared for the transnational thematic meetings. The transnational thematic meeting offers the main opportunity to share and discuss partners’ contributions, practices. On the transnational thematic meetings each project partner contributes to the thematic issue. The transnational thematic meeting that focused on the market price assessment issue was organised by Ministry of Finance online on 3-4 November 2020 due to the pandemic. Based on partner contribution the thematic host compiles the thematic paper and shares it with project partners. Project partners present results and conclusions of the thematic paper to their local stakeholders.

The thematic paper is a living document and can be updated if further relevant information comes up that is worth including in it. The thematic paper is published on the homepage of INNO PROVEMENT.

The Ministry of Finance involved an external subcontracted expert in the elaboration of the thematic issue and in the compilation of the thematic paper.

Figure 4: Working on the thematic issues of INNO PROVEMENT – delivery of the thematic paper



4. Market price assessment methodologies in the INNO PROVEMENT regions

Being the core of the thematic paper, this chapter presents partner contributions for the market price assessment methodologies. The chapter starts out with the Hungarian practices put forward by the Ministry of Finance for the INNO PROVEMENT partnership. As described in the Methodology chapter the further subchapters build from reflexions and contributions of INNO PROVEMENT partners with regards to the subject. The contributions from partners have been presented and discussed during the thematic transnational meeting on 3-4 November 2020.

4.1 Hungary

The market price assessment tools presented by the Ministry of Finance include various examples from a project life cycle. Not all tools are put forward as good practices but rather as experience and useful learning for the partnership.

4.1.1 3 bids

The 3-bid methodology has been the primary tool for the justification of the market price prescribed by the managing authority in its calls. Applicant organisations needed to submit three bids to each external service budget line and had to use the bid with the most favourable price for budgeting. The tool proved to be efficient in controlling prices and has been abandoned recently by the Managing Authority for the sake of other tools presented in subsequent subchapters.

Figure 5: 3 bids method

3 bids

Tool description

- Applicant must submit at least 3 bids to justify the market price of a budget item and must select the cheapest bid for budgeting
- Very often only one bid from a pre-selected supplier and two false bids
- Difficulty of comparability of bids (if technical content is not fully equivalent)
- Checking the 3 bidders produces a lot of workload to MA staff

Relevant cost types

- Purchase of machinery, equipment, hardware, software
- External services

Bid 1 50	Bid 2 45	Bid 3 40
		Bid 3 40

Our conclusion

- For many years this method has been used as a primary tool in price control
- It has received lots of remarks from EC audits
- By now we are not using this method

4.1.2 Public procurement

In 2015, the scope of the public procurement law was extended substantially to include procurements of relatively moderate size of SMEs if the SME had a winning project proposal in many of the innovation and technology development calls. The tool, however, did not prove an efficient tool for market control due mainly to the fact that SMEs were not used to running public procurements and made lot of mistakes in the procedures. This caused a substantial delay in the implementation of the projects and brought in increasing error rates that the Managing Authority wanted to avoid. After two years, the law has been altered to increase minimum procurement limits and so SMEs were not obliged any longer to carry out public procurements.

Figure 6: Public Procurement

Public procurement

Tool description

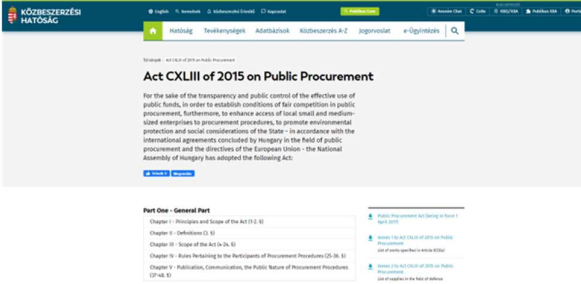
- Scope of public procurement law extended to SME beneficiaries and to moderate value purchases of equipment, machinery, external services
- As such SMEs have to go through all the processes with long deadlines including checks, potential legal appeals, etc.

Relevant cost types

- Purchase of machinery, equipment, hardware, software
- External services

Our conclusion

- SMEs cannot implement public procurements properly
- It slows down project implementation significantly
- It increases irregularities



The screenshot shows the official website of the Hungarian Public Procurement Authority (Közbeszerzési Hatóság). The main heading is 'Act CXLI of 2015 on Public Procurement'. Below the heading, there is a brief description of the act's purpose: 'For the sake of the transparency and public control of the effective use of public funds, in order to establish conditions of fair competition in public procurement, furthermore, to enhance access of local small and medium-sized enterprises to procurement procedures, to promote environmental protection and social considerations of the tender - in accordance with the international agreements concluded by Hungary in the field of public procurement and the directives of the European Union - the National Assembly of Hungary has adopted the following Act.' Below this, there is a table of contents for 'Part One - General Part' with chapters on Principles and Scope, Subsidies, State of the Act, Rules Pertaining to Participants, and Publication/Communication.

4.1.3 Market research, market analysis

As alternative to the 3-bid method, the MA started using market research and market analysis for the justification of market prices. The market research is more general than the 3-bids. It is up to the applicant to justify the price of the concerned budget item. In many cases a google search results is adequate and the print screen of the search is provided as proof of evidence. Additionally, applicants are entitled not to choose the cheapest available solution provided they give satisfactory justification for their choice. The method has proved a success so far through the simplification of the market price justification both for the applicants and for the managing authority.

Figure 7: Market research, market analysis

Market research, market analysis	
Tool description	Relevant cost types
<ul style="list-style-type: none">▪ Applicants are required to carry out a market research to justify the market price of a budget item▪ The justification and supporting documents have to be filled in the online application form▪ Applicant can argue against using the cheapest available solution if justified well	<ul style="list-style-type: none">▪ Purchase of machinery, equipment, hardware, software▪ External services
Our conclusion	Examples:
<ul style="list-style-type: none">▪ The method is a good alternative to the 3-bid system▪ It is less burdensome both for the applicants and for the assessors▪ It reduces possibilities for mistakes in the procedure	<ul style="list-style-type: none">▪ For standardised products printscreens of from homepages of manufacturers/distributors/merchants are acceptable▪ Printscreens from homepages of foreign suppliers are also acceptable

4.1.4 Relative cost ceiling compared to total eligible costs

The managing authority often includes relative cost ceilings to certain cost-types projected to total eligible costs in various innovation and technology development calls. Typical cost-types to fall under this regime are external services, communication activities, infrastructure development. Application of the tool has brought mixed results: it works well with specific cost types like overhead and communication costs but only if the project size is limited. In the case of big projects tight ceilings on these cost types result in high absolute values therefore an additional limit on this absolute value will be needed, too.

Figure 8: Relative cost ceiling compared to total eligible costs

Relative cost ceiling compared to total eligible costs	
Tool description	Relevant cost types
<ul style="list-style-type: none">▪ The call imposes a maximum percentage on a cost type in terms of total eligible costs▪ Applicants are not able to budget more on the specific cost item than allowed by the call	<ul style="list-style-type: none">▪ Staff costs▪ Purchase of machinery, equipment▪ Infrastructure development▪ External services▪ Communication costs▪ Travel▪ Overhead costs
Our conclusion	Examples:
<ul style="list-style-type: none">▪ The tool works well with specific cost types (like overhead, communication) and if project size is limited▪ In the case of big projects even small percentage values for specific cost types can result in too high absolute values therefore often an absolute maximum value is often established in the call▪ It can complicate project modifications because the change in one type of costs can bring along changes in other cost types	<ul style="list-style-type: none">▪ External services cannot exceed 30% of total projects costs▪ Overhead costs cannot exceed 0.5% of total costs▪ Compulsory communication activities cannot exceed 1% of total eligible costs and cannot exceed EUR 10,000

4.1.5 Capped unit cost prices

Capped unit cost prices mean that for certain cost types the unit cost is maximised. Budget items exceeding the unit costs are eligible only till the unit cost ceiling. Typical example for this tool is wage costs, or infrastructure development costs. In the experience of the Ministry of Finance in Hungary, this tool works well. Fine-tuning of the cap is advantageous, that is for example different unit cost ceiling to be used for top researchers and for research assistants.

Figure 9: Capped unit cost prices

Capped unit cost prices	
Tool description	Relevant cost types
<ul style="list-style-type: none">▪ Maximum unit costs are established in the call text▪ Budget items exceeding the unit costs are eligible only up until the unit cost ceiling▪ In certain cases maximum values are introduced to limit eligible quantities (e.g. no of consultant days to a certain task)	<ul style="list-style-type: none">▪ Staff costs▪ Purchase of machinery, equipment▪ Infrastructure development▪ External services▪ Communication costs▪ Travel▪ Overhead costs
Our conclusion	Examples:
<ul style="list-style-type: none">▪ Unit cost prices work well but<ul style="list-style-type: none">➢ Single unit cost prices may need to be differentiated to reflect differences in quality (e.g. wage of researchers vs. Technicians)➢ It needs a well-documented solid underlying methodology at the MA/IB that can be referred to in the case of external audits	<ul style="list-style-type: none">▪ For staff costs maximum gross monthly wages (including employer's charges) fixed in calls (EUR 5500 for researchers, developers, EUR 2000 for technician/other supporting staff)▪ For external services the max daily consulting rates are daily rated of the National Chamber of Engineers (EUR 320/day)

4.1.6 Preselected suppliers (supplier white list)

The managing authority has started to use this method recently. The tool means that applicants can only choose such products and services that are provided by preselected suppliers. The suppliers get selected in a separate procedure by the MA or by its agent. Selection of the suppliers follows a transparent and qualitative assessment. The selection for suppliers is continuously open and the database of suppliers is constantly maintained. So far, the Ministry of Finance has good experience on using this method, although it is crucial that the number of suppliers in the database must be high so that competition is not constrained.

Figure 10: Preselected suppliers

Preselected suppliers (supplier white list)

Tool description

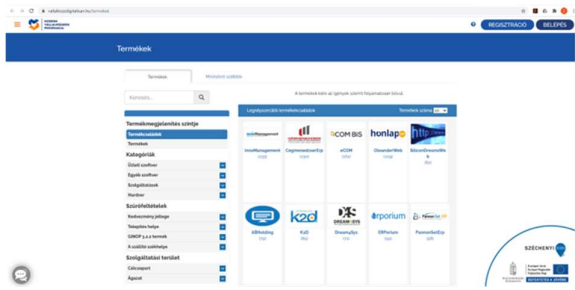
- Applicants can only choose products/services that are offered by preselected suppliers
- Suppliers get selected through a continuously open call
- Selection is done by the Hungarian Chamber of Commerce
- With regards to consultancy services, the maximum eligible cost is the average price of suppliers listed in the database

Relevant cost types

- Purchase/rental of management information systems
- Hardware purchase
- Consultant services

Our conclusion

- Works well in controlling prices
- Selection of suppliers must be done in a clear, transparent way and must be well documented
- To avoid constraints on competition it is a requirement that a broad list of suppliers must be available
- The database needs continuous maintenance



4.1.7 E-procurement tool

The e-procurement tool is a built-in function in the online application portal for SMEs and other applicant organisations. Procurement of beneficiaries are entered in the tool, which then are published on a dedicated website. Procurements can be searched in a number of ways by interested suppliers. The e-procurement tool in Hungary is on a voluntary basis, therefore not many beneficiaries are using it. The IT platform itself is rather in its pilot version now and would need further developments.

Figure 11: E-procurement tool

E-procurement tool

Tool description

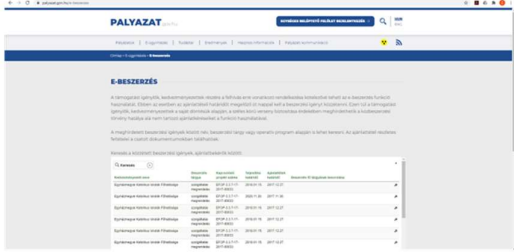
- It is a built-in function in the online application portal
- Procurements of beneficiaries can be published in the tool
- Procurements can be searched in a number of ways
- Only very limited number of calls make the use of the tool compulsory but any beneficiary can use it on a voluntary basis
- As of now the tool is not used in the Economic Development Operational Programme calls including Industry 4.0 related calls

Our conclusion

- It is a useful tool for the purchase of standardised products, services
- The IT platform still needs a lot of development
- If voluntary, beneficiaries avoid using the tool

Relevant cost types

- Purchase of machinery, equipment, hardware, software
- External services



4.1.8 Compulsory price calculator

The compulsory price calculator is an excel tool that is available to the applicants as part of the call documents. Budgeting of the project proposal is done through this price calculator. The calculator is used for the introduction of management information systems and e-commerce solutions. The applicant enters business data and specific information on the management information system and the calculator determines the maximum eligible cost for the applicant. Based on the experience of the Ministry of Finance, Hungary the tool eliminates overpricing efficiently. It is important, however that the tool is constantly updated and maintained.

Figure 12: Compulsory price calculator

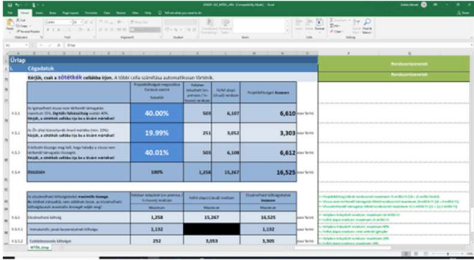
Compulsory price calculator

Tool description

- It is an excel tool available for applicants as part of the call documents, it is a compulsory annex to be filled in
- Used for the introduction of management information systems, e-commerce
- The calculator is developed using statistical data, data from previous EU-co-financed projects, prices observed in the market
- Data to be entered by the applicant:
 - ✓ Business data (revenue, number of employees, etc)
 - ✓ IT systems to be introduced
 - ✓ Integration of systems
- Results: Maximum eligible costs that can be applied for by the SME in the call

Relevant cost types

- Purchase of management information systems
- Purchase/rental of cloud-based services



Our conclusion

- The tool eliminates overpricing
- The tool has to be maintained and updated regularly with fresh market data

4.2 Czech Republic

In the practices of the Ministry of Industry and Trade in the Czech Republic, the projects must meet the binary criterion of Cost-effectiveness in the project evaluation phase assessed by external experts with relevant expertise. The applicants are required to provide indicative offers of potential suppliers of HW, SW, materials, services, etc.

Experts assess if the budget or the budget lines are not overpriced and if all the budget items are necessary and effective for the implementation of the project. The experts can propose to cut the budget if some of the budget items exceeds the market price or if there is insufficient justification of the necessity or effectiveness of the item. The assessment relies on the expertise of the external experts and the provided indicative offers.

There is no special database or procedure for checking the market prices with the exception of construction costs, wages and unique patents and know-how. For construction costs there are special pricing systems, which contain the guiding prices of the construction works.

Wages can be checked against the statistics of average wages according to regional and sectoral differences. In case of unique patents/know-how/licences the applicant needs to provide a special document with a price assessment confirmed by state appointed assessors.

The Ministry of Industry and Trade applies market price control in the project selection phase, before the approval. During project implementation, rules for tenders apply. The applicants

need to open a tender for bids for purchases above 20 000 EUR. In case the funding rate is below 50% of eligible costs, the threshold for tenders is 74 000 EUR.

In the future, it would be good if there was an online tool for price comparison. If one of the budget items is overpriced in the project proposal, the external experts will cut the amount exceeding the market price. If the sum of all overpriced (or not justified) items exceeds 50% of the total eligible costs, the project did not meet the binary cost-effectiveness criterion and is rejected.

4.3 Region of Thessaly (Greece)

4.3.1 Public procurement

Public procurement is legislated in Greece by Law 4412/2016 on “Public works, supplies and services contracts” implementing Public Procurement Directive 2014/24/EU and Special Sectors Directive 2014/25/EU and via Law 4413/2016 on “Award and execution of concessions (Directive 2014/23/EU).

The current legal framework aims to ensure that the award of public contracts and concessions is subject to the principles of the internal market and, in particular, of freedom of movement of goods, freedom of establishment and freedom to provide services as well as the principles deriving therefrom such as equal treatment, non-discrimination, mutual recognition, proportionality and transparency.

4.3.2 National System of Electronic Public Procurement (ESIDIS)

General Secretariat of Commerce (GSG) of the Ministry of Economy, Development & Tourism operates the National System of Electronic Public Procurement (ESIDIS), an Electronic Public Procurement System (ePPS), through which all public sector bodies carry out electronically the tenders with estimated value over EUR 60,000 without VAT (article 36, law 4412/2016).

The system supports processes such as drawing up and publishing a tender notice, submitting bids, evaluating them, drawing up and concluding the contract. It also monitors the execution of contracts, including procedures such as online ordering, electronic invoicing and electronic payment. The system additionally gives all public bodies the opportunity to apply new techniques in contract award procedures, such as electronic auctioning, dynamic purchasing systems, competitive dialogue and framework agreement. It is obligatory for all public entities from 30.04.2017 onwards.

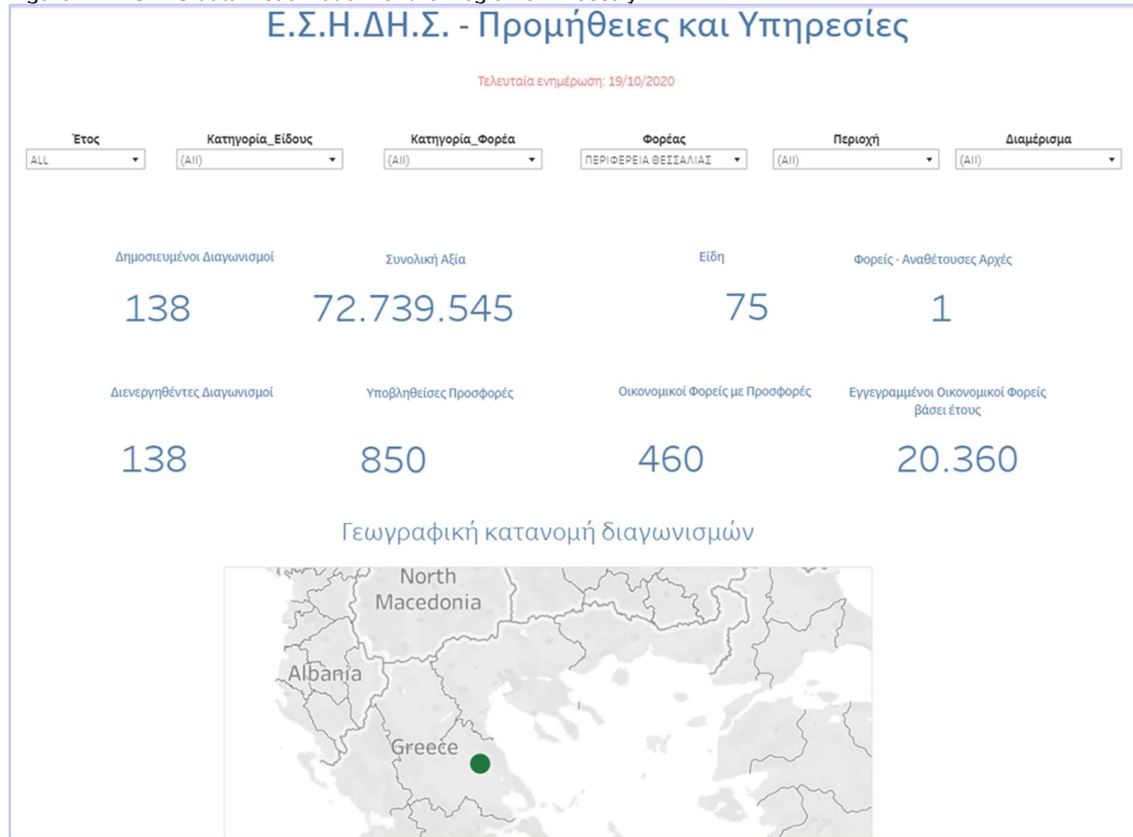
Figure 13: ESIDIS platform – promitheus.gov.gr

The screenshot shows the website interface for the ESIDIS platform. At the top, there is a search bar and navigation links. The main header includes the logos of the Ministry of Development and Economic Cooperation, the European Union, and the Operational Program 'Digital Convergence' (ΕΣΠΑ 2007-2013). The main content area features a large graphic with the text: "Οπτικοποίηση δεδομένων (data visualization) Ηλεκτρονικών Διαγωνισμών ΕΣΗΔΗΣ (Προμηθειών, Υπηρεσιών και Δημοσίων Έργων) και Συμβάσεων ΚΗΜΔΗΣ". Below this, a red headline reads: "ΠΙΣΤΟΠΟΙΗΣΗ ΤΕΧΝΙΚΗΣ ΔΥΣΛΕΙΤΟΥΡΓΙΑΣ ΤΟΥ ΥΠΟΣΥΣΤΗΜΑΤΟΣ ΕΣΗΔΗΣ ΔΗΜΟΣΙΑ ΕΡΓΑ". The article text states: "Σας πληροφορούμε ότι διαπιστώθηκε τεχνική δυσλειτουργία του υποσυστήματος ΕΣΗΔΗΣ Δημόσια Έργα σήμερα Παρασκευή 23/10/2020 και από 14:45. Λεπτομέρειες ανακοίνωσης (pdf)". A red link "ΣΥΜΦΩΝΙΕΣ - ΠΛΑΙΣΙΟ ΕΤΟΥΣ 2020" is visible. Below that, another red link "ΣΗΜΑΝΤΙΚΗ ΕΝΗΜΕΡΩΣΗ" is present. The left sidebar contains various navigation links under the heading "Γενικές Πληροφορίες".

ESIDIS Funding and results:

- The cost for the system’s design and implementation amounts to EUR 9,630,421.66 and was co-funded by ERDF “Digital Convergence” Operational Programme 2007-2013.
- In 2019:
 - 7,560 bidding procedures were carried out, with a total value of 3,917 billion euros
 - 22,126 bids were submitted by 5,436 economic operators.
- In 2020 (data until October 2020):
 - 5,737 bidding procedures were carried out, with a total value of 3,836 billion euros,
 - 16,666 bids were submitted by 4,741 economic operators.

Figure 14: ESIDIS data visualization for the Region of Thessaly



4.3.3 Central Electronic Public Procurement Registry (KIMDIS)

The Central Electronic Public Procurement Registry (KIMDIS) is an information system - part of ESIDIS - for the registration of data by public bodies, ie by contracting authorities and contracting entities, for the purpose of collecting, processing and publishing data on public procurement, services and procurement, for projects with a budget value of € 1,000 or more, excluding VAT.

KIMDIS operates and is supported by the Directorate for Development and Support of the National Electronic System of Public Procurement (ESIDIS) of the General Secretariat of Commerce and Consumer Protection and is governed by the new provisions for KIMDIS of Law 4412/2016.

Figure 15: KIMDIS platform

4.3.4 Benefits of ESIDIS & KIMDIS

Both platforms (ESIDIS and KIMDIS) assist public entities throughout Greece (Region of Thessaly included) through the modernization of procedures and the following benefits:

- Automation, acceleration, simplification, standardization of processes
- Support, implementation and use of new models and practices
- Improving transparency, publicity and equal treatment of stakeholders in public procurement with more complete and real-time information and an open system that accessible to all
- Increasing competitiveness
- Reduction of public procurement costs
- Reduction of cost and process time
- Reduction of costs for participation in tenders for interested organizations (suppliers)

4.3.5 Market price control

Regarding services the public authorities follow the Regulation of estimated fees for studies and/or technical and scientific support (Government Gazette B'2519/20.07.2017) in order to calculate the budget of the tender during the stage of call design. In cases of equipment procurement, the public authorities perform a market research at the stage of call design in order to define the budget, based on the specific characteristics of the equipment:

- Online market research (desktop). Applicable when price is available.
- Request from a supplier/ chamber or association (through email) to provide the price of the specific equipment for the needs of the estimation of the budget of the tender.
- Search on KIMDIS of similar equipment (procured or contracted) through CPV search.

Proposals for improvement on equipment procurement:

- At the stage of call design, the public authority sets the technical specifications and the budget of the procured equipment. Market research might cause delays on procurement in cases where there is inadequate information of the price of the equipment (i.e. ICT equipment).
- The estimation of the budget is a critical step during the call design phase in order to avoid deviations on procured items' price that could result in objections of the published tender from interested suppliers.
- Proposed solution:
 - Integration of ESIDIS and KIMDIS through Business Intelligence systems in order to perform automated market research on equipment items based on procured and contracted budget of previous tenders.
 - Development of an online catalogue of equipment items based on current market prices.

4.4 Marche Region (Italy)

In Marche Region's good practice: *"ROP MARCHE-ERDF14-20 call - Manufacturing and work 4.0: Axis 1 - Action 1.3 Support to company innovation processes and the use of new digital technologies in the Marche SMEs"* attention is focused on the coherence of the investment with I4.0 goals. Investments proposed had to be in line with the investment areas indicated in the "National Industry 4.0 Plan" . The project is rejected if investments were not coherent with one or more item of that list (no cutting or reduction of budget items).

- Investment areas indicated in the "National Industry 4.0 Plan" Industrial automation:
 - Smart and Digital Factories
 - Flexible production systems
 - Fast production
 - Design and development of multifunctional, modular and configurable products
 - Design of high quality products through innovative digital technologies for modeling and simulation of the product and of the production system
 - Integrated design (simultaneous product-process-system design, for example foreseeing the subsequent phases of the life cycle from the design stage such as disassembly and recycling of materials)
 - Implementation of the labeling system for product traceability

With regards to the market price assessment issue, questions have been submitted to the stakeholder group for discussion. As a result, the stakeholder group made proposals:

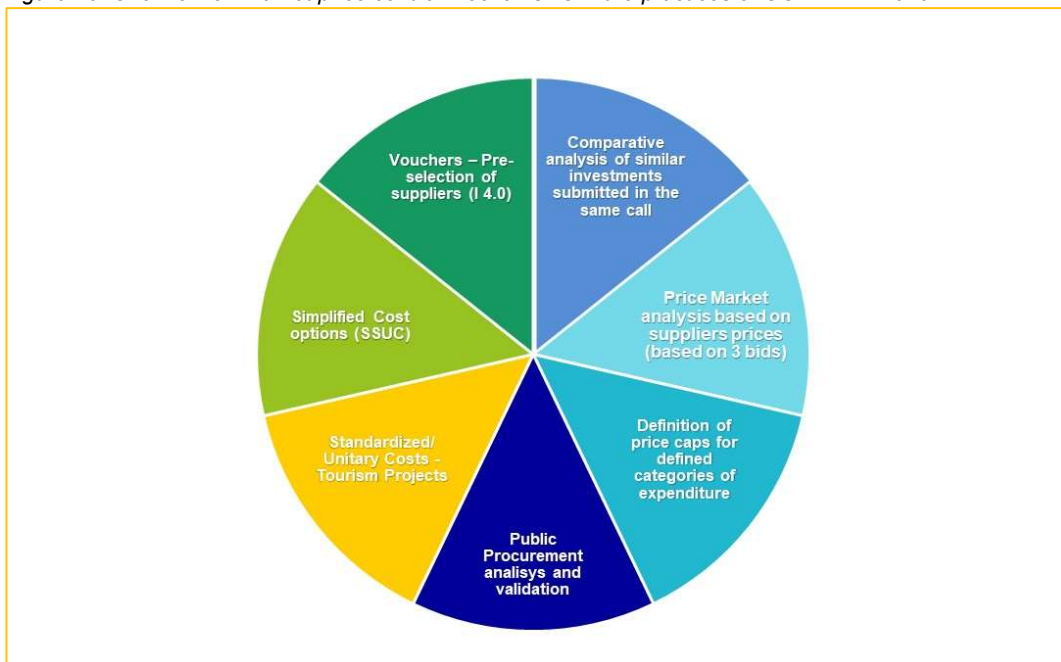
- Elaborate efficient methods for market price control according to project size.
 - Small projects' needs:
 - simple and quick administrative procedures
 - expertise to focus on the on the right investment
 - Small projects' solutions:
 - simplify procedures when PUBLIC SUPPORT is small

- grant technical expertise provided by Innovation Managers (selected from the central public register of Innovation Managers).
 - Big projects' needs:
 - evaluation on effectiveness of the project (cost/benefit approach)
 - ongoing tutoring mechanisms
 - Big projects' solutions:
 - provide PUBLIC SUPPORT for granting continuous tutoring by experts for an effective achievement of the goals set by the project. Tutoring could be provided by the same experts that evaluated the proposal or by Innovation Managers* selected from the national public register.
- Suggestions to Marche Region policy makers:
 - Regional Plan for I 4.0 (Regional Law n.25/2018)
 - Include in the I 4.0 regional plan for the next programming period, an innovative project evaluation system that takes into consideration the mechanisms proposed here
 - Reforming the Regional Law for the evaluation of research innovation and technological transfer projects (Regional Law n. 16/2008)
 - regulate evaluation systems ex ante, in itinere and ex post.
 - for large projects, provide a tutoring system by a pool of experts to support (rather than control) Project Managers during the implementation of the projects.

4.5 Portugal

4.5.1 Overview on market price control mechanisms

Figure 16: Overview on market price control mechanisms in the practices of COMPETE 2020



MA COMPETE 2020 has in current use 7 types of market price control mechanisms. Except for Public Procurement and Standardized Unitary Costs - Tourism Projects, all other types are applicable to Industry 4.0 projects, without adaptations. In spite of the specific costs associated to I 4.0 Projects, these methodologies can be equally applied to other types of projects. Pre-selection of suppliers methodology is applied in conjunction with price caps to I4.0 Voucher projects.

4.5.2 Training projects

Calls state that the projects must be oriented to improving qualifications of workers and management alike. Also state that supported training should be directed to new methodologies and I 4.0. Applicable SCO's (Simplified Costs Options) is the Standard Scales of Unit Costs (SSUC). Two main Expenditure categories were identified:

- Trainees salaries;
- Training costs (include Trainers and support costs);

SSUC methodology implies only the verification and validation of the Training time, but not of the expenses, reducing the administrative effort.

These methodologies are applied essentially in the project implementation phase, notwithstanding their application in other phases, namely in the application (explanation of the suppliers selection criteria) and selection phase (validation of the submitted criteria). Increase the application of SCO's (either lump sum, SSUC or flat rates) in order to reduce the administrative costs by simplifying the verification procedures i.e. changing the focus from administrative verifications to project results.

If an investment is overpriced, it can be adjusted to market price or the project can be considered not eligible depending on the breadth of the overpriced items on the global project. If the overpriced items are essential for the implementation of the project, then the impact of correcting to market prices, can put at risk it's approval.

4.6 Lodz Region (Poland)

Market price control mechanisms:

- Guidelines on eligibility of expenditure under the European Regional Development Fund, European Social Fund and Cohesion Fund for 2014-2020
- Programme guidelines for the eligibility of expenditure within the framework of the Regional Operational Programme for Łódzkie 2014-2020
- Public Procurement Law

Contracts under the projects:

- Estimated order value above 50 000 PLN net: the contract must ensure transparency and fair competition and equal treatment of contractors. The above requirements are met by applying the provisions of the Public Procurement Law
- Estimated order value below 50 000 PLN net: order on the basis of a documented market research

Expenditure limits for Sub-measure II.3.1:

- expenditure incurred on project preparation: eligible up to 3,5% of eligible expenditure,
- direct expenses related to the project management and maintenance may not exceed a total of 5% of eligible expenses - a total of no more than 20 000 PLN per month,
- expenses related to the purchase of undeveloped or developed real estate: eligible up to 10% of the project eligible expenses,
- expenditure related to investments aimed at increasing energy efficiency: eligible up to 30 % of the eligible expenditure of the project.

Market research:

- confirms that a given service, delivery or construction work will be performed at market price
- in order to confirm the market research it is necessary to document the analysis of prices/prices of potential contractors together with the analysed price lists. The price lists can be obtained:
 - from the contractors' websites or
 - by making the description of the subject of the contract together with the price inquiry on the beneficiary's website or
 - by sending price inquiries together with the description of the subject of the contract to potential contractors, etc.

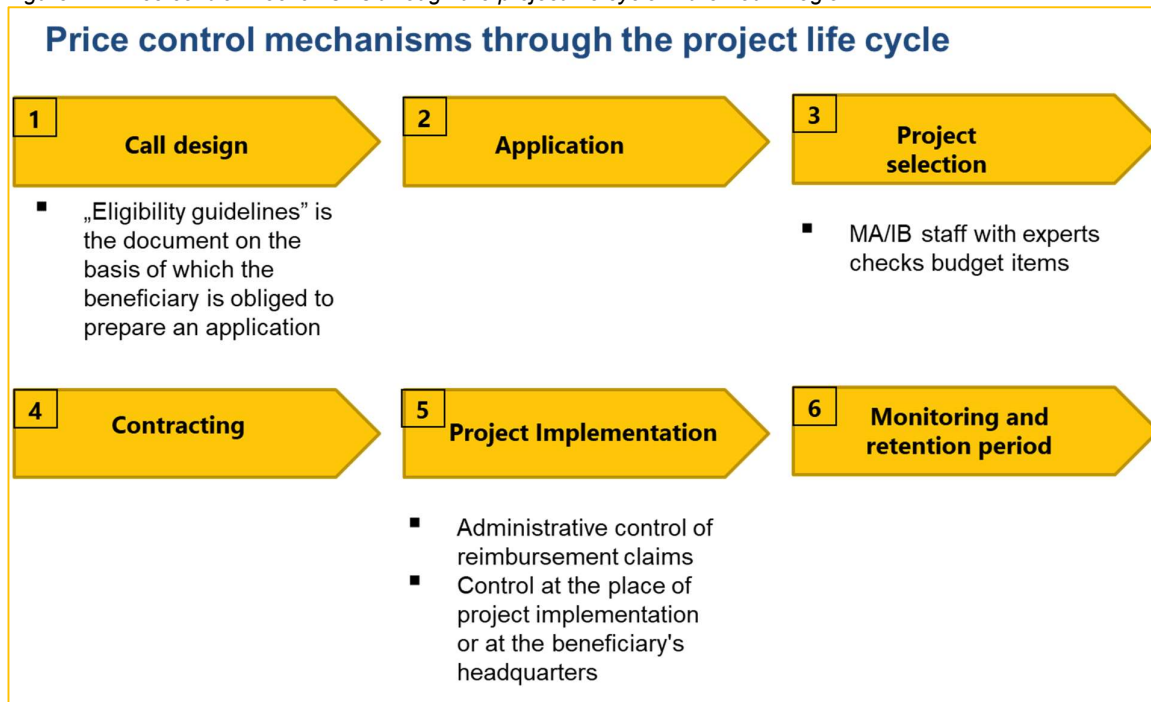
Verification of the application - Sub-measure II.3.1 - Innovations in SMEs:

- Estimation of investments in the projects is carried out at the stage of substantive evaluation of the projects by two experts (members of the Project Evaluation Committee).
- When submitting an application for co-financing, the applicant obligatorily encloses the project budget, in which he presents planned expenses within the project.
- The experts, on the basis of data in the budget on expenses, i.e. description of the expense, justification of incurring the expense and methodology of cost estimation, carry out a calculation whether the indicated net value of the expense (eligible cost) is equal to the market price or is it overstated

Verification of the application - Sub-measure II.3.1 - Innovations in SMEs:

- During the calculation the experts also use the data contained in the technical annex to the application, which is an extract from the technical documentation or functional-utility program / specification of the purchased equipment / specification of the purchased services / cost estimate / calculation of materials and construction works.
- On the basis of technical parameters included in the above mentioned annex and on the basis of the planned undertaking within the project, the experts estimate the price using their experience in the given industry, data contained in the Internet and on the basis of available offers.
- Next, the experts state whether the expenditure and its value is justified and adequate to the project objective.

Figure 17: Price control mechanisms through the project life cycle in the Lodz Region



Non-price criteria for offer evaluation:

- A common practice in public procurement in Poland is to use the criteria for evaluating offers on a 60/40 basis, where 60% is price and 40% non-price criteria.
- This was caused by numerous cases of offers with abnormally low price and, consequently, low quality of the subject matter of the contract.
- Setting the weight of the price above 60% (and thus also 100%) is possible after meeting two conditions:
- specifying in the description of the subject of the order the quality standards relating to all important features of the subject of the order and
- showing how the life cycle costs were included in the description of the subject of the order

Non-price criteria for offer evaluation – examples:

- quality, including technical parameters, aesthetic and functional properties;

- social aspects, including the professional and social integration of disabled persons or unemployed, accessibility for disabled persons;
- environmental aspects, including energy efficiency of the subject-matter of the contract;
- innovative aspects;
- organisation, professional qualifications and experience of persons assigned to perform the contract, if they can have a significant impact on the quality of the performance of the contract;
- after-sales service and technical assistance, delivery terms, such as delivery date, method of delivery and delivery time or period of realisation.

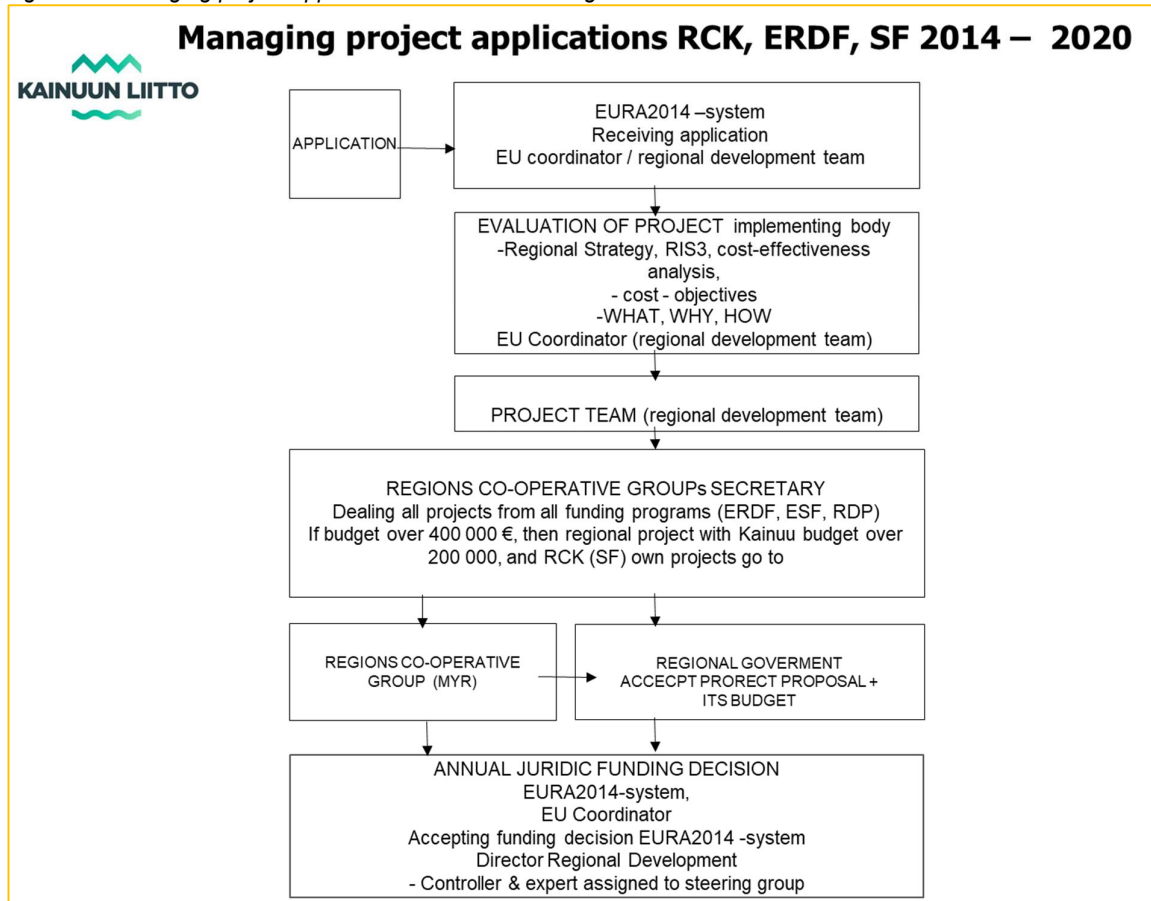
Market environment - general principles:

- In times of recession, when supply is greater than demand and unemployment becomes a social problem - contractors (to stay in the market) offer abnormally low prices and then drastically cut costs (understating the quality of products, hiring employees on "junk" contracts and not paying subcontractors) - the application of quality and social criteria is essential to achieve the best value for money and protect disadvantaged groups.
- In a period of economic boom, when there is a lot of work (both for contractors and subcontractors and employees) - contractors choose the best orders (not necessarily public) and offer high prices (taking into account the risks, high salaries of employees and not insignificant costs of subcontractors) - the application of non-price criteria may not be necessary and may lead to further price increases which are anyway above the contracting authorities' budgets.

In case one of the budget items is overstated at the project selection stage then the substantive criterion will be considered as not met if the noncompliant, unintentional or overestimated expenditure exceeds 20% of the total eligible costs. If the expenses indicated by the Applicant as eligible and inconsistent with the eligibility rules, inexpedient or overstated, do not exceed 20% of the total eligible costs, it is possible to correct the application for co-financing in this scope, i.e. the Applicant is called upon to remove the expense or reduce the value of the cost.

4.7 Kainuu Region (Finland)

Figure 18: Managing project applications in the Kainuu Region



Risk monitoring, that the following risks are not happening:

- Avoidance of the necessary competition procedure (has to follow public procurement law)
- Unreported conflicts of interest or bribes
- Risk monitoring, that the following risks are not happening:
 - Avoidance competitive procedure in order to favor a particular tenderer in obtaining or maintaining a contract:
 - Shared procurement
 - Unjustified choice of a single supplier
 - By not organising a tendering procedure
 - Extending the contract in an irregular manner

Risk monitoring, that the following risks are not happening:

- Incorrect pricing: the tenderer manipulates the competitive process by failing to identify certain costs in its tender.
- Manipulation of invoices
- Non - delivery or replacement of products
- Amendment of an existing agreement
- Exaggeration of staff qualifications or activities
- Incorrect labour costs

5. Conclusions

The partnership of INNO PROVEMENT perceives the issue of market price assessment with regards to Industry 4.0 projects differently due to a number of factors:

- Difference in addressed policy instruments: some of our partners deal with nation wide, large programmes that serve thousands of SMEs typically through open calls, whereas some other partners work with regional programmes with moderate number of potential applicants
- Differences in cultural embeddedness: project partner come from across Europe and bring substantially different experience in managing projects

Partners provided valuable contributions to this thematic subject that is probably due to an extent to the different perceptions of the thematic issue. As for Hungary, for a long time the major tool for price control was the „3 bids method” that was much criticised by external audits. By now it has largely been abandoned by alternative methods. Earlier, market prices were checked almost only at project selection phase, these days checks are carried out during grant agreement modifications and reimbursement claims. At long (1 year plus) and big (EUR 2 million +) projects price check at the project selection phase is less relevant but it is very important during project implementation. An additional important learning is that specific cost types need different approaches that is why a portfolio of tools is needed.

Ministry of Industry and Trade in the Czech Republic concluded that it would be good if there was an online tool for price comparison in the coming years.

COMPETE 2020 intends to increase the application of SCO's (either lump sum, SSUC or flat rates) in order to reduce the administrative costs by simplifying the verification procedures i.e. changing the focus from administrative verifications to project results. The approach is fully shared by the Ministry of Finance, Hungary.