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Request2Action

Relevant data for local authorities

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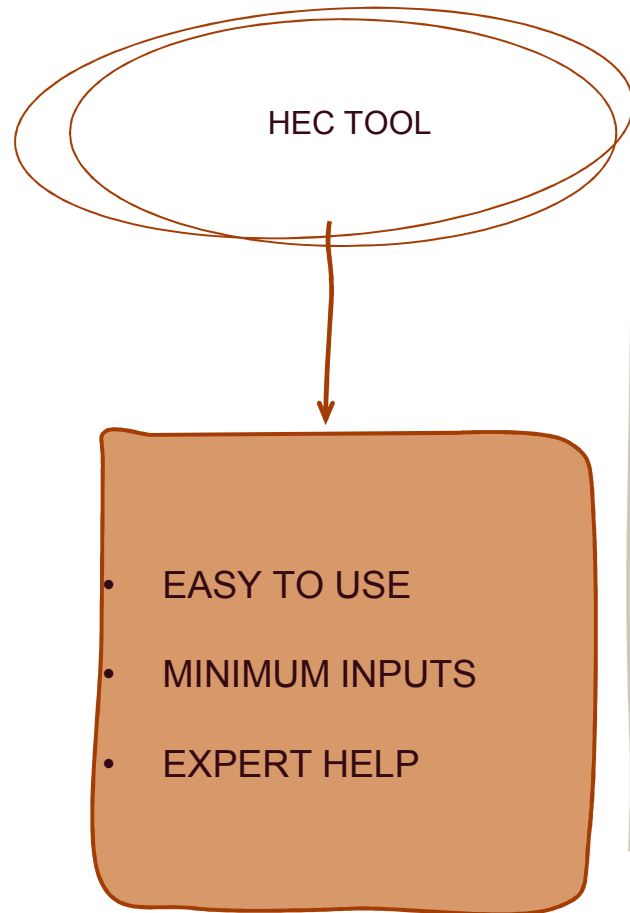
Institut for energy passive houses, PIO Keramoprojekt

Trenčín, Slovakia





SIEA pilot actions





Local authorities & missing data for efficient retrofits

Real-life survey: Questionnaire

- Survey focused on real life-barriers for deep energy/low-carbon retrofits via **Questionnaire**
- **Two main parts in the Questionnaire:**
 - **A - Availability of information & data about building stock**
 - **B - Experiences with existing retrofit support schemes**
- Prepared for digital fill



Dotazník: Identifikácia prekážok pri realizácii energetickej efektívnych sanácií budov a iných opatrení zameraných na dosahovanie energetických úspor na úrovni samospráv

A. Prístup k informáciám a relevantným dátam ohľadom prevádzky budov

1. V prípade, že by ste uvažovali o obnove energeticky nevhodných budov patriacich do Vášho majetku?
 - a. Ste schopný ich sami identifikovať?
 Áno Nie
 - b. Máte vypracovaný plán / stratégiu energetickej obnovy Vašich nehnuteľností?
 Áno Nie
2. Máte informácie o tom, že by náklady napr. na vykurovanie po realizácii kvalitnej významnej obnovy objektu mohli klesnúť aj o viac ako 85%?
 Áno Nie



4. Sú vám známe hodnoty spotreby energií ktoré sú dosiahnuteľné v porovnateľných budovách?
 - a. Ukazovatele hospodárnosti rekonštrukcie do štandardu energetickej pasívnych budov resp. budov s takmer nulovou potrebou energie? Znamená to najmä referenčné potreby tepla/chladu/el. energie/TÚV v [kWh/m2/rok]?
 Áno Nie
 - b. Referenčné ukazovatele účinnosti dostupných technológií pre energeticky pasívne budovy a budovy s takmer nulovou potrebou energie? [%]
 Áno Nie
5. Disponujete evidenciou majetku s dostupnými dátami o základných objemových a kapacitných parametroch Vašich budov v digitálnej forme?
 - a. Rok výstavby resp. poslednej významnej obnovy objektu





Local authorities & missing data for efficient retrofits Questionnaire – Questions sets

- **12 Questions sets –Topics (A1-A10,B)** covering wide range of building stock condition data

Set no.	Téma sady otázok (SK)	Question set focus [ENG]
A1	Povedomie o nevyhovujúci budovách v správe	Awareness about unfit building stock in ownership
A2	Referenčné dáta - potenciál	Reference Data - saving potential
A3	Celková ener.hospodárnosť- merná spotreba	Overall Energy Efficiency Data - spec.consumption
A4	Referenčné údaje budov nZEB/TNB	Reference data of comparable nZEB building
A5	Bilancie a kapacitné údaje budovy	Building geometry and capacity Data
A6	Teplotechnické údaje o obálke budovy	Building envelope Data
A7	Efektivita technológií TZB	HVAC efficiency
A8	Monitoring&targeting	Monitoring&targeting
A9	Štruktúra dát o spotrebe	Consumption Data structure
A10	Dáta o prevádzke budovy	Facility operation Data
A11	Archivácia informácií o spotrebe	Consumption data collection, storage and availability
B	Prístup k existujúcim podporným schémam	Awareness about existing retrofit subsidies&policies



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Questionnaire - Questions

- **43 Questions** in 12 Question sets focused on comprehensive survey
- Professionally assembled in collaboration with Institut for Passive Houses, Slovakia



Q.No	Otázka [SK]	Question [EN]
1a	Schopnosť identifikácie	Self-ability to identify unfit Bld.
1b	Plán obnovy budov v správe	Retrofit plan for building stock
2	Perspektívy úspor	Savings potential
3a	B.DataMP-Tepla	B.DataSC-Heat
3b	B.DataMP-Chladu	B.DataSC-Cool
3c	B.DataMP-El.energie	B.DataSC-E.eletricity
3d	B.DataMP-TUV	B.DataSC-HeatWater
4a	ReferenčnéDáta-MP-TNB	ReferenceB.Data-SC-nZEB
4b	ReferenčnéDáta-Účinnosti	ReferenceB.Data-EE
5a	B.Data:Geom-Vek	B.Data:Geom-Age
5b	B.Data:Geom-Objem	B.Data:Geom-Volume
5c	B.Data:Geom-PodlažnáPlocha	B.Data:Geom-FloorArea
5d	B.Data:Geom-NettoPlocha	B.Data:Geom-NettoArea
5e	B.Data:UčelBudovy	B.Data:Purpose

5f	B.Data:KapacityBudovy	B.Data:Capacity
5g	B.Data:PovodnáPD	B.Data:Documentation
6a	B.DataTT:Upriem.	B.DataTQ:Uaverage
6b	B.DataTT:Uok	B.DataTQ:Uw
6c	B.DataTT:n50	B.DataTQ:n50
6d	B.DataTT:Tep.Mosty	B.DataTQ:ThermalBridges
7a	B.DataTech:VýrobaTepla	B.DataTech:HeatProdEff
7b	B.DataTech:VýrobaChladu	B.DataTech:CoolingProdEff
7c	B.DataTech:E.energia	B.DataTech:ElectricityEff
7d	B.Data:Vzduchotesnosť	B.Data:EnvelopeAirtightness
7e	B.Data:Vzduchotesnosť	B.Data:Thermography
8a	MetodikaMonitorovania	Monitoring Methodology
8b	ProcesMonitorovania	Monitoring process
8c	Zodpovedná osoba	Responsible person
9a	Sledovanie faktúr	Bill registration

9b	Štruktúra spotreby	Consumption structure
9c	Väzba na prevádzku	Ties to the specific operations
9d	Krížová kontrola odpočtov	Cross control of deduction cons.
10a	Doba prevádzky	Operating hours
10b	Užívateľský komfort/spokojnosť	User satisfaction feedback
10c	Štruktúra spotreby el. energie	Electricity consumption structure
10d	Racionalita prevádzky	Operation optimization
11a	Archivácia faktúr	Archiving billing
11b	Písomná evidencia spotrieb	Written evidence - paper
11c	Digitálna tabuľka	Written evidence - digital table
11d	Informačný systém CAFM	Information system CAFM
B1	Zaujímate sa systematicky	Systematic interest
B2	Dostatočné informácie	Sufficient information
B5	Náročná príprava žiadosti o podporu	High-demanding preparation of Retrofit subsidy project

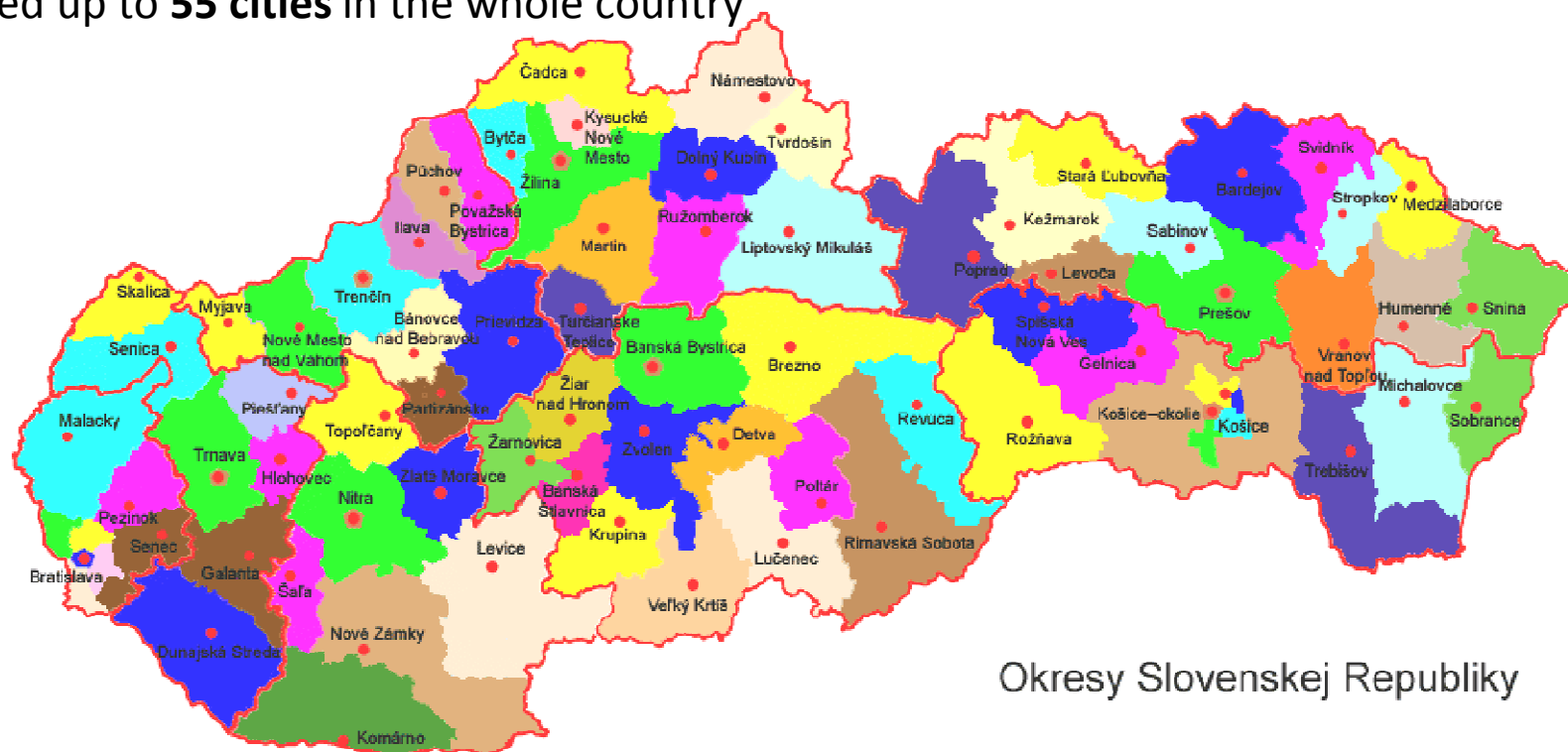


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Real-life survey: Target group

Target group and Distribution of Questionnaire:

- Questionnaire has been distributed to municipalities -local authorities in partnership with „The Union of Towns and Cities of Slovakia“
- Delivered up to **55 cities** in the whole country





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Real-life survey: Analysis of answers

Survey outputs:

- 40 Questionnaire filled (> 72%) - **38 of them fully completed**
- Answers collected and statistically analyzed via advanced data methodology
- Database & graphical representation of answers and results – data analysis

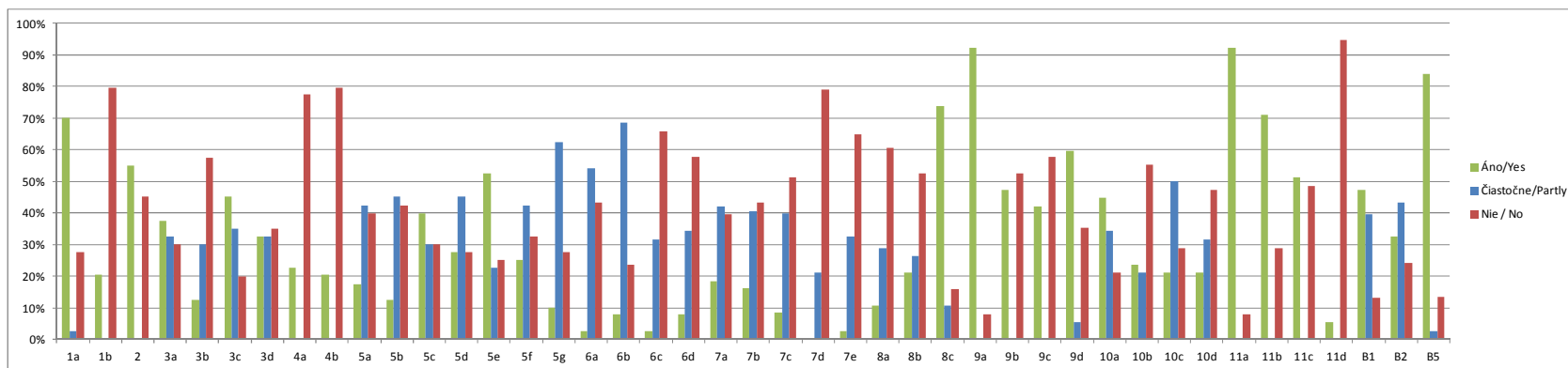
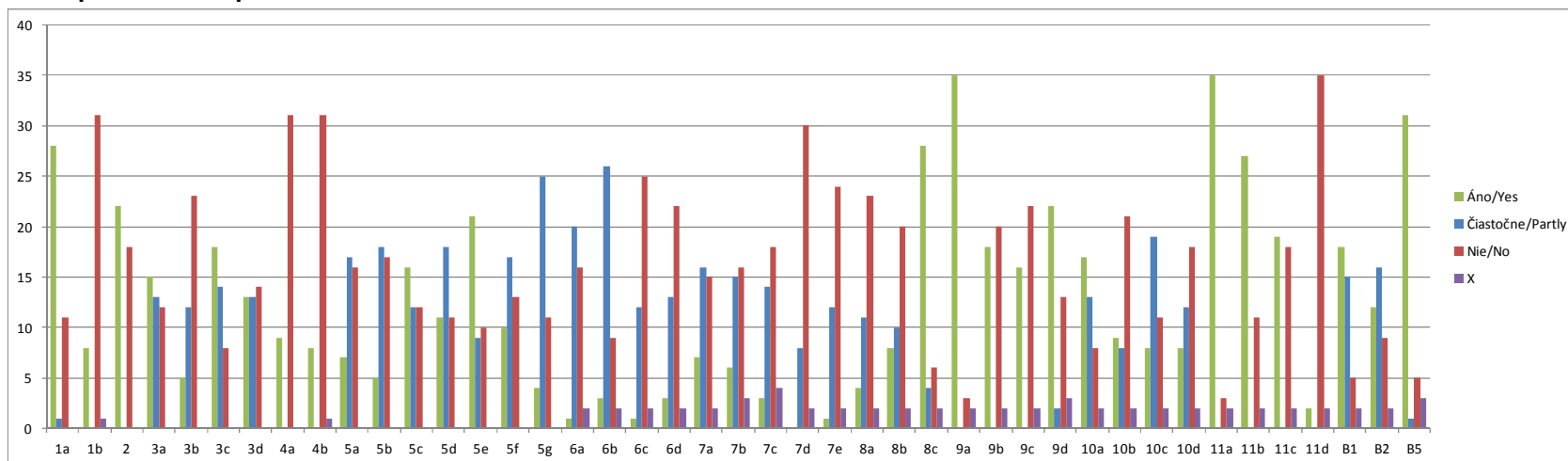
Obec	Velkosť obc	1a	1b	2	3a	3b	3c	3d	4a	4b	5a	5b	5c	5d	5e	5f	5g	6a	6b	6c	6d	7a	
Bajtava	D	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Bardonovo	D	N	N	A	N	N	A	N	N	A	N	N	N	N	N	N	N	C	C	C	C	N	N
Bratislava	M	A	A	A	A	C	A	C	N	A	C	C	A	C	A	C	C	C	C	N	C	A	A
Brezova Pod Bradlom	MM	A	N	A	N	A	A	N	N	X	C	C	C	C	C	N	C	X	X	X	X	X	X
Čechy	D	N	N	N	C	A	C	C	N	N	N	A	A	C	C	C	A	N	C	C	N	N	N
Dubnica nad Vahom	MM	A	A	A	A	C	A	A	A	A	A	A	A	A	A	A	C	C	C	C	N	A	A
Dubník	D	A	N	A	C	C	C	C	A	A	N	N	N	A	A	N	N	C	C	C	C	C	C
Holic	MM	N	N	A	C	N	C	C	N	N	N	N	N	N	N	N	N	C	C	N	C	C	C
Hurbanovo	MM	N	N	N	C	N	A	C	N	N	A	C	A	C	A	A	C	N	N	N	N	N	C
Chteľnica	D	N	N	N	C	N	A	C	N	N	C	C	C	C	A	C	C	N	C	N	N	N	C
Kamenica nad Hronom	D	N	N	A	C	N	C	N	N	N	N	N	N	N	N	N	N	X	X	X	X	X	X
Kežmarok	MM	A	X	N	C	N	C	C	N	N	C	C	C	C	A	C	C	C	C	N	N	A	A
Komárno	MM	A	N	A	C	N	C	N	N	N	C	C	C	C	C	C	C	N	N	N	N	N	N
Košice-Luník IX	M	A	N	N	A	N	C	A	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C
Košice-Sidlisko KVP	M	A	N	N	N	N	N	N	N	N	N	N	N	N	N	C	C	N	C	N	N	N	N
Košice-Opátske	M	A	N	A	C	C	C	C	N	N	C	C	C	C	C	C	C	N	C	N	N	N	N
Kysucké Nove Mesto	MM	A	A	N	N	N	N	N	N	N	N	N	N	N	A	N	N	N	N	N	N	N	N
Lucenec	M	N	N	A	A	N	A	N	N	N	C	C	C	C	A	C	N	C	C	N	N	N	N
Martin	M	A	A	N	A	C	A	A	N	N	C	C	A	A	A	C	C	C	C	N	N	N	C
Bratislava Dúbravka	M	A	N	N	N	N	N	N	N	N	N	C	A	C	A	C	C	N	C	N	N	N	N
Palárikovo	D	A	N	A	A	N	A	N	N	N	C	N	C	C	C	A	A	C	C	C	C	C	C
Podolinec	D	A	N	A	N	A	A	A	N	N	A	A	A	A	N	C	C	C	C	N	A	A	A
Prešov	M	C	N	A	C	C	C	C	A	A	C	C	C	C	C	C	C	C	C	N	C	C	C
Prievidza	M	A	A	A	A	A	A	A	A	N	C	C	A	A	A	A	C	C	A	A	C	A	A



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Real-life survey: Analysis of answers

Graphical representation of Questionnaire results:





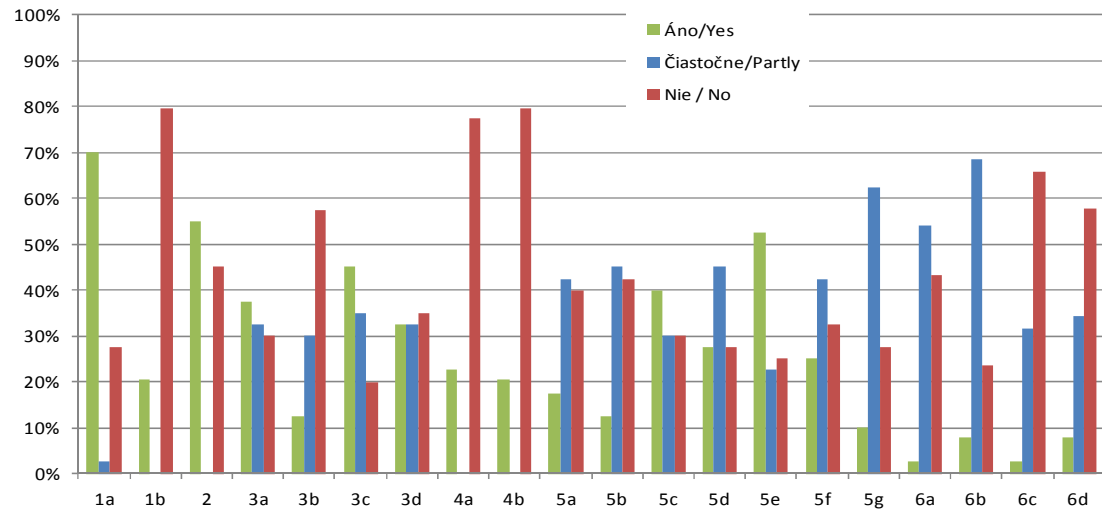
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Real-life survey: Analysis of answers

Part 1: Q1a – Q6d

Main shortcomings:

- A. Q 1b: 80% NO retrofit strategy
- B. Q 4a-b: 78% NO comparable and reference nZEB data
- C. Q 6a-d: only 5% YES to Availability of data about Thermal envelope quality



Question set focus [ENG]
Awareness about unfit building stock in ownership
Reference Data - saving potential
Overall Energy Efficiency Data - spec.consumption
Reference data of comparable nZEB building
Building geometry and capacity Data
Building envelope Data

Q.No.	Otázka [SK]	Question [EN]
1a	Schopnosť identifikácie	Seability to identify unfit Bld.
1b	Plán obnovy budov v správe	Retrofit plan for building stock
2	Perspektívny úspor	Savings potential
3a	B.DataMP:Tepla	B.DataSC-Heat
3b	B.DataMP:Chladu	B.DataSC-Cool
3c	B.DataMP:Elenergie	B.DataSC-Electricity
3d	B.DataMP:TUV	B.DataSC-HeatWater
4a	ReferenčnéData-MP-TNB	ReferenceB.Data-SC-nZEB
4b	ReferenčnéData-Úžnosti	ReferenceB.Data-EE
5a	B.Data:Geom-Vek	B.Data:Geom-Age
5b	B.Data:Geom-Objem	B.Data:Geom-Volume
5c	B.Data:Geom-PodlažnáPlocha	B.Data:Geom-FloorArea
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5e	B.Data:UčelBudovy	B.Data:Purpose
5f	B.Data:KapacityBudovy	B.Data:Capacity
5g	B.Data:PovodnáPD	B.Data:Documentation
6a	B.DataTT:Upriem.	B.DataTQ: Uverage
6b	B.DataTT:Uok	B.DataTQ: Uw
6c	B.DataTT:n50	B.DataTQ: n50
6d	B.DataTT: Tep.Mosty	B.DataTQ: ThermalBridges



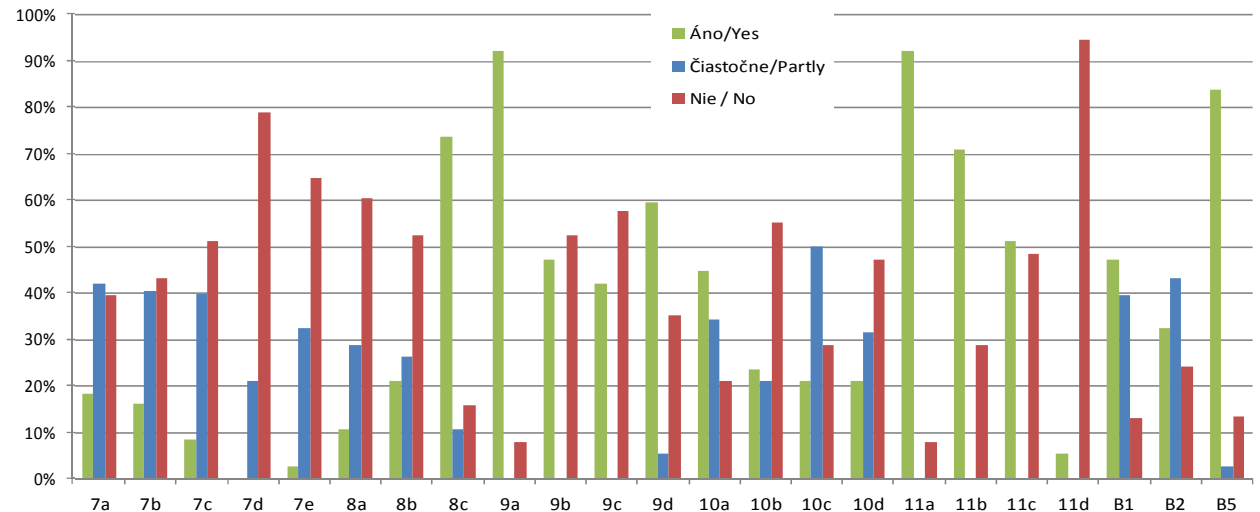
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Real-life survey: Analysis of answers

Part 2: Q7a – B5

Main shortcomings:

- D. **Q 7a-e:** only 30% Yes to HVAC efficiency data !
- E. **Q 7d:** 78% NO to Envelope Airtightness data !
- F. **Q 8a:** 64% NO to Systematic Energy monitoring methodology
- G. **Q11c:** 50 % No Digital collection of Consumption data! In 95% no CAFM SW.
- H. **B5:** 85% YES to Highly-demanded and difficult to prepare retrofit project !



HVAC efficiency
Monitoring&targeting
Consumption Data structure
Facility operation Data
Consumption data collection, storage and availability
Awareness about existing retrofit subsidies&policies

Question	Topic
7a	B.DataTech:VýrobaTepla
7b	B.DataTech:VýrobaChladu
7c	B.DataTech:E.energia
7d	B.Data:Vzduchotesnosť
7e	B.Data:Vzduchotesnosť
8a	MetodikaMonitorovania
8b	ProcesMonitorovania
8c	Zodpovedná osoba
9a	Sledovanie faktúr
9b	Štruktúra spotreby
9c	Väzba na prevádzku
9d	Križová kontrola odpočtov
10a	Doba prevádzky
10b	Užívateľský komfort/spokojnosť
10c	Štruktúra spotreby el. energie
10d	Racionalita prevádzky
11a	Archivácia faktúr
11b	Písomná evidencia spotrieb
11c	Digitálna tabuľka
11d	Informačný systém CAFM
B1	Zaujímame sa systematicky
B2	Dostatočné informácie
B5	Náročná príprava žiadosti o podporu





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Real-life survey: Conclusions

Main identified deficiencies/barriers for effective decision making in Retrofit process:

(Our, up to date conclusions)

1. Lack of useful and **Bulding retrofit strategies**
2. Lack of relevant and trustful energy efficiency data of **comparable nZEB building**.
(Energy demand & consumption kWh/m²/y , retrofit cost €/m², operation cost €/m²/y)
3. Lack of **relevant data about thermal envelope quality and technology efficiency of existing buildings in stock** (U values, Heat and cool production efficiency, etc.)
4. Lack of **Energy monitoring and targeting implementation!**
5. Low adoption of **Systematic energy consumption data collection and storage** (few Digital storage of Consumption data and only 2 municipalities with some CAFM SW, etc.)
6. **Highly demanding, difficult and uncertain process of preparation retrofit projects with EU fonds contribution.**



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Real-life survey: Conclusions

Identified deficiencies/barriers for effective decision making in Retrofit

▶ proposed ACTION within R2A project

- | | |
|---|--|
| 1. Lack of <u>Building energy retrofit strategies</u> | ▶ To inform, encourage to prepare usefull Energy strategies. |
| 2. Lack of relevant and <u>trustful reference data of comparable nZEB building.</u> | ▶ Provide relevant informations with reference nZEB/Passive house efficiency data in public building |
| 3. Lack of <u>relevant data about Thermal envelope quality and technology efficiency</u> of existing buildings in stock | ▶ EPC are full of these data! -> do EPC! Learn how to find relevant data in it! Use them in desicion making proces! |
| 4. Lack of systematic <u>Energy monitoring and targeting implementation!</u> | ▶ Provide basic informations and recommendations about EM&T. |
| 5. Low adoption of <u>Systematic energy consumption data collection and storage.</u> | ▶ To encourage to do first steps. Prepare free template table for Consumption database. (XLS platform) |
| 6. Highly demanding, dificult and uncertain proces of prepatation retrofit projects with EU funds contribution. | ▶ Encourage to intensively communicate with imple-mentation agencies in phase of project preparation, and use free <u>Energy counselling service of SIEA.</u> |



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R2A: Next steps

Proposed next steps in for Local authorities/ Municipalities :

1. To provide demaded informations with focus on:

- Energy strategies
- Reference nZEB/Passive house efficiency data in public building incl. cost,
 - kWh/m², €/m²
- Info how find relevant building stock data in EPC-s, and how to use them
- Possibilities of Deep Step-by-step retrofit (EuroPHit)
- Base information about CAFM systems for Energy monitoring&targeting

Form of information: Printed information leaflet, web-page,...?

2. To prepare free template for Consumption database-spreadsheet:

- All energies and bills evidency
- Basic statistics
- Correct data structure, ready for export to database systems , cloud dB etc.

Form: Spreadsheet template base on XLS platform –common in municipal offices



Thanks for your attention

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