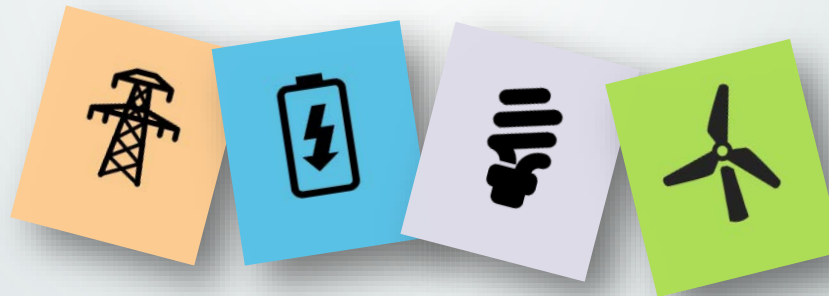




16th ENERGY EFFICIENCY COORDINATION GROUP MEETING

ENERGY PERFORMANCE OF BUILDINGS DIRECTIVE IMPLEMENTATION STATUS

PROGRESS AND CHALLENGES



Denis TUMURUC

Deputy Head of Energy Policies Department
Ministry of Economy and Infrastructure

ENERGY EFFICIENCY

PRIMARY LEGAL FRAMEWORK⁽¹⁾

Law on Adherence of the RM to
the Treaty establishing the
Energy Community

Law No.117 of 23.12.2009

- Law on energy efficiency
(to be substituted)
- **Law on the energy
performance of buildings**
- Law on heat and cogeneration
promotion
- Law on eco design
- Law on energy labelling

No.142 of 02.07.2010

No. 128 of 11.07.2014

No. 92 of 29.05.2014

No. 151 of 17.07.2014

No. 44 of 02.07.2014

ENERGY EFFICIENCY SECONDARY LEGAL FRAMEWORK⁽²⁾

- | | |
|--|---------------------------|
| • National Energy Efficiency Program 2011-2020 | GD No. 833 on 10.11.2010 |
| • National Energy Efficiency Action Plan 2016-2018 | GD No. 1471 on 31.12.2016 |
| • Regulation on energy services | GD No. 1093 of 31.12.2013 |

Secondary legislation

- *for the implementation of the Law on energy efficiency*
- *for the implementation of the Law on heat and cogeneration promotion*
- *for the implementation of the Law on energy performance of buildings*
- *for the implementation of the Law on eco labelling*
- *for the implementation of the Law on eco-design*

EPB FRAMEWORK IN PLACE⁽¹⁾

ROMANIAN	ENGLISH	STATUS
Hotărârea Guvernului nr. 896 din 21.07.2016 pentru aprobarea Regulamentului privind procedura de certificare a performanței energetice a clădirilor și a unităților de clădiri	Regulation on the <u>procedure for the certification</u> of the energy performance of buildings and building units	Approved
Hotărârea Guvernului nr. 1325 din 12.12.2016 pentru aprobarea Regulamentului privind inspecția periodică a sistemelor de încălzire din clădiri	Regulation on the <u>periodic inspection of heating systems</u> in Buildings	Approved
NCM M.01.01:2016 „Performanța energetică a clădirilor. Cerințe minime de performanță energetică a clădirilor”	MBN M.01.01: 2016 "Energy Performance of Buildings. <u>Minimum energy performance requirements for buildings</u> "	Approved
NCM M.01.02:2016 „Performanța energetică a clădirilor. Metodologia de calcul al performanței energetice a clădirilor”	MBN M.01.02: 2016 "Energy Performance of Buildings. <u>Methodology for calculating the energy performance of buildings</u> "	Approved
NCM M.01.04:2016 „Metodologia de calcul al nivelurilor optime din punctul de vedere al costurilor, al cerințe minime de performanță energetică a clădirilor și a elementelor acestora”	MBN M.01.04: 2016 " <u>Methodology for calculating cost-optimal levels</u> , minimum energy performance requirements for buildings and their components";	Approved
CP M.01.01:2016 „Auditul energetic al clădirilor”	CP M.01.01: 2016 " <u>Energy audit of buildings</u> "	Approved

EPB FRAMEWORK IN PLACE⁽²⁾

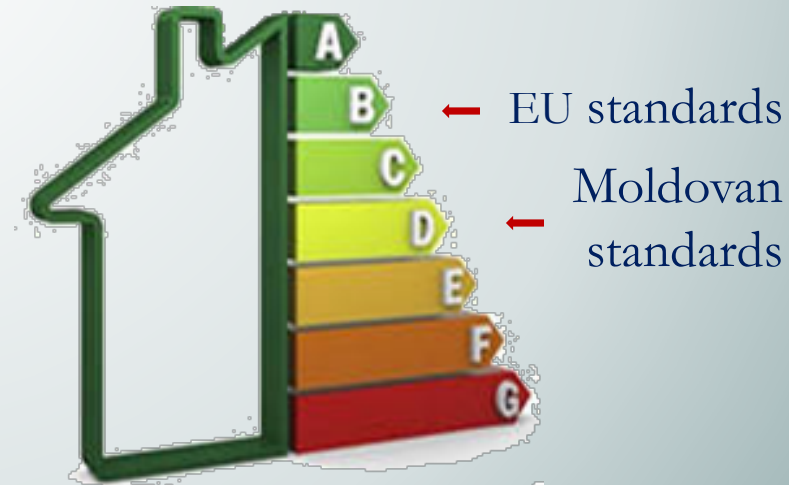
ROMANIAN	ENGLISH	STATUS
Proiectul Hotărârii Guvernului Regulament privind inspecția periodică a sistemelor de climatizare din clădiri (care este în curs de finalizare)	draft Regulation on the <u>periodic inspection of air conditioning systems in buildings</u> (which is being finalized)	Draft
CP E.04.05:2016 “Protecția contra acțiunilor mediului ambient Proiectarea protecției termice a clădirilor”	Practical building code CP E.04.05:2016 on <u>design of thermal protection of buildings</u>	Draft
MBN NCM E.04.01:2016 “Protecția termică a clădirilor”	MBN NCM E.04.01:2016 on <u>design of thermal protection of buildings</u>	Draft
CP G.04.0X:2017 “Instalații termice, de ventilare și condiționare a aerului. Proiectarea izolației termice a utilajului și a conductelor”	CP G.04.0X:2017 Practical building code on <u>design of thermal insulation of pipes and equipment</u>	Draft
Foaie de Parcurs, Pentru Eficienta Energetica a Cladirilor	Practical building code on <u>design of Passive Houses</u>	Draft

THE RoMs BUILDING STOCK *STATUS-QUO*



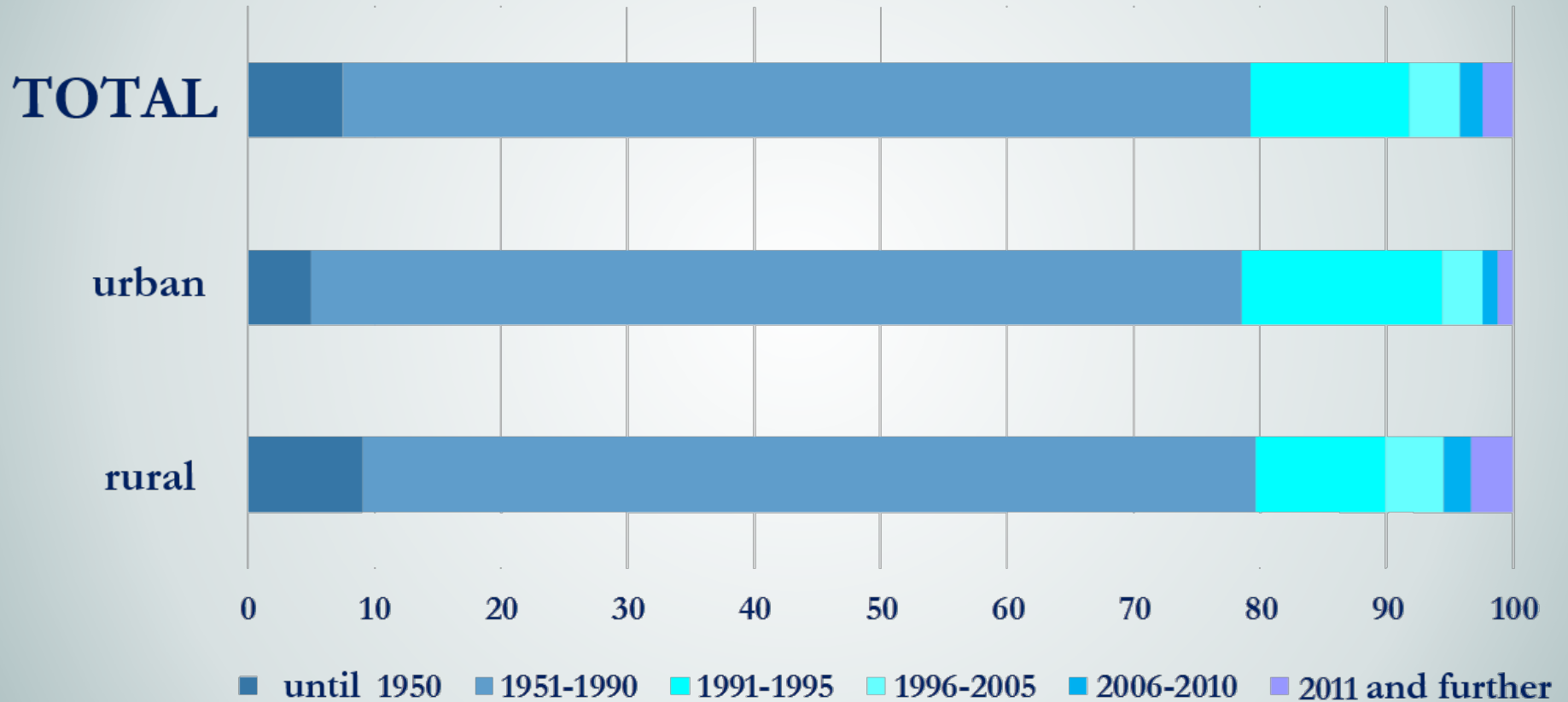
- the main part of the building stock doesn't comply with EE in buildings standards, being 20-60 years old
- 45% of the country energy consumption goes to building

- almost 75% of the buildings sector energy consumption is used for heating purposes
- current construction standards of the Republic of Moldova corresponds to D class



BREAKDOWN OF THE BUILDING STOCK

BY YEARS OF CONSTRUCTION AND AREA



EVOLUTION OF THE U-VALUE REQUIREMENTS

Building element	U value, W/m ² K							
	SniP II-3-79		NCM G.04.04-99		NCM E.04.01-2006		New regulation /under EPB Law/	
	Residenti al and social build.	Public and admin. build.	Residenti al and social build.	Public and admin. build.	Residenti al and social build.	Public and admin. build.	Residenti al and social build.	Public and admin. build.
Wall	1,19-1,26-	1,04-1,96	0,35-0,43-	0,36-0,5	0,36-0,48	0,42-0,56	0,32	0,34
Roof	0,79 - 0,83-	1,04-1,96	0,25-0,29	0,31-0,37	0,24-0,31	0,31-0,42	0,20	0,28
Roof slab /on unheated spaces/	1,04-1,96	1,04-1,96	0,28-0,33	0,37-0,44	0,27-0,36	0,37-0,5	0,20	0,2
Windows and doors	1,88-5,55-	2,08-6,66	2,38	2,56	2,22-3,33	2,5-3,33	≤1,7 2.2	≤1,7 2.2



improved by 70%

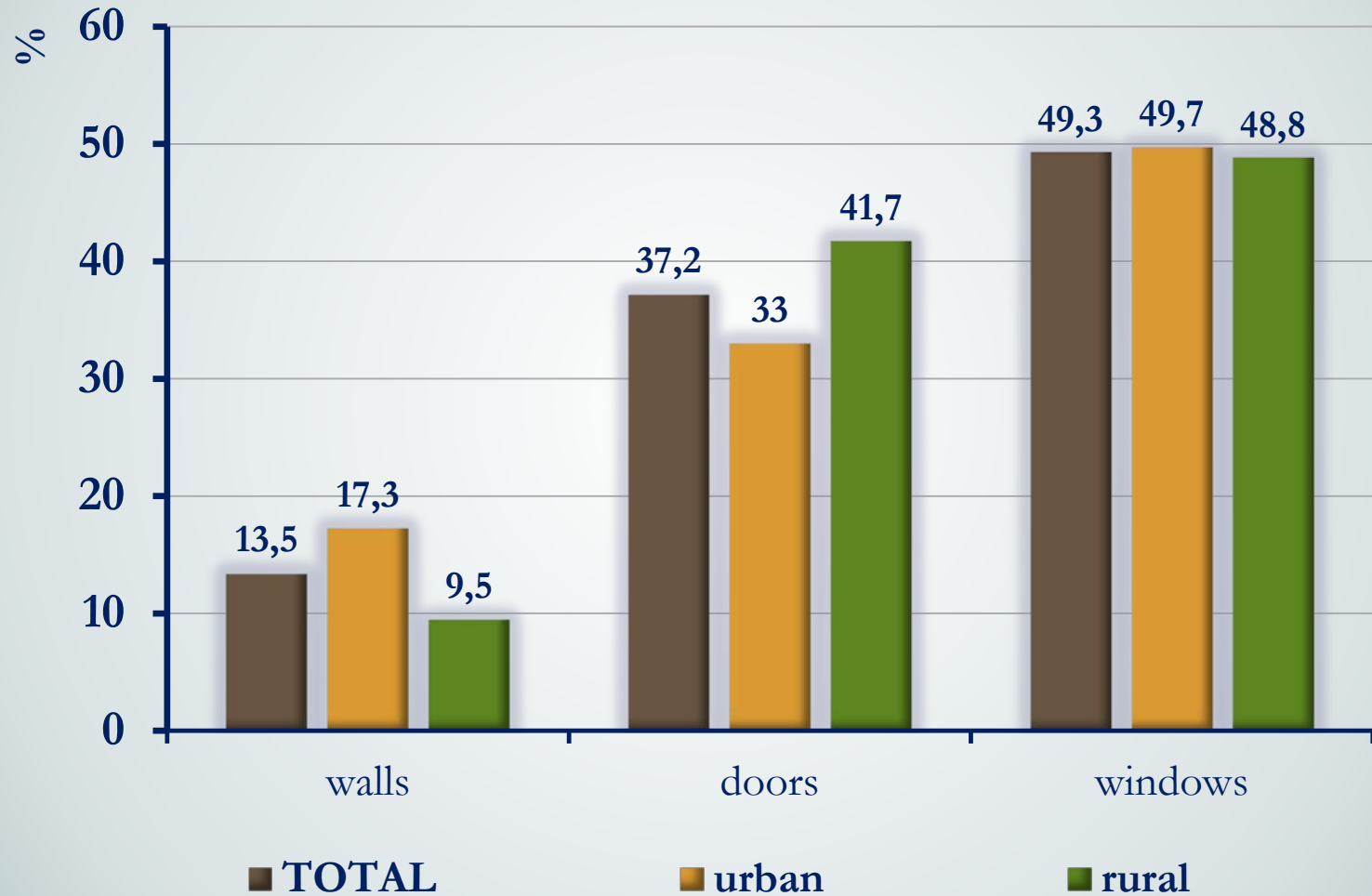
BUILDINGS ENERGY PERFORMANCE CLASSIFICATION

ACCORDING TO THE REGULATION IN FORCE

	Type of building	Buildings energy performance classification, kWh/m ² yr.							Actual values
		A	B	C	D	E	F	G	
heating	Unifamilial houses	≤ 47	47-93	94-190	191-287	288-359	360-431	> 431	~125
	Multi-store buildings	≤ 22	22-44	45-102	103-159	160-199	200-239	> 239	~145
	Offices buildings	≤ 25	25-49	50-94	95-138	139-173	174-207	> 207	~200
	Social. Educational buildings	≤ 25	25-50	51-102	103-154	155-193	194-231	> 231	~180

Note: The **actual values** of buildings specific energy consumption for **heating purpose** are caused by *energy poverty* phenomenon, being by 30-50% less than normative/required consumption

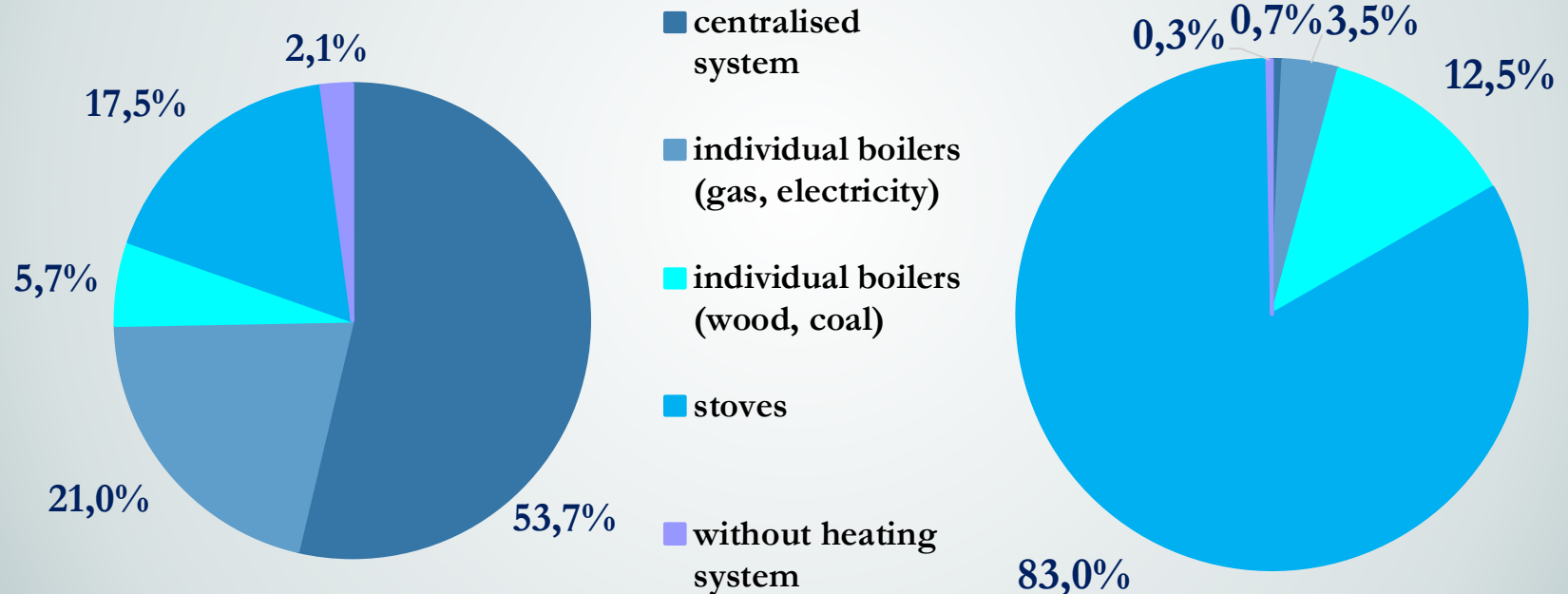
BREAKDOWN OF THE BUILDINGS EE MEASURES BY AREA OF INTERVENTION



BREAKDOWN OF THE BUILDINGS HEATING SYSTEMS BY TYPE OF HEATING SYSTEMS

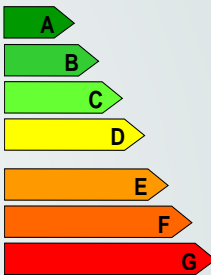
URBAN AREA

RURAL AREA



MAIN PILLARS OF THE MOLDOVAN LAW ON ENERGY PERFORMANCE OF BUILDINGS

1. Buildings energy performance certification
2. Minimum energy performance requirements
3. Cost-optimal level of energy performance of buildings
4. Inspection of ventilation systems
5. Inspection of conditioning systems
6. Promotion of nZEB concept
7. National informational system on energy performance of buildings
8. Promotion of efficient use of energy in the building stock

Cod poștal localitate		Nr. înregistrare la Consiliul Local		Data înregistrării	
z z l l a a		z z l l a a		z z l l a a	
Certificat de performanță energetică	Performanța energetică a clădirii			Notare energetică:	
	Sistemul de certificare: Metodologia de calcul al Performanței Energetice a Clădirilor elaborată în aplicarea Legii			Clădirea certificată	Clădirea de referință
	Eficiență energetică ridicată				
				C	B
	Eficiență energetică scăzută				
	Consum anual specific de energie [kWh/m²an]				
	Indice de emisii echivalent CO ₂ [kg _{CO2} /m²an]				
	Consum anual specific de energie [kWh/m²an] pentru:			Clasă energetică	
				Clădirea certificată	Clădirea de referință
	Încălzire:				
Apă caldă de consum:					
Climatizare:					
Ventilare mecanică:					
Iluminat artificial:					
Consum anual specific de energie din surse regenerabile [kWh/m²an]:					
Date privind clădirea certificată:					
Adresa clădirii:			Suprafața încălzită utilă:m ²		
Categorie clădire:			Suprafața construită desfășurată:m ²		
Regim de înălțime:			Volumul încălzit util al clădirii:m ³		
Anul construirii:					
Scopul elaborării certificatului energetic:					
Programul de calcul utilizat:, versiunea:					
Date privind identificarea evaluatorului energetic pentru clădire:					
Specialitatea (c, i, ci)	Numele și prenumele	Seria și Nr. certificat de atestare	Nr. și data înregistrării certificatului în registrul evaluatorului	Semnătura și ștampila evaluatorului	
.....	

THE EPB LAW IMPLEMENTATION IN THE RoM

NEXT STEPS TOWARDS EPD LAW IMPLEMENTATION

1. EPB law secondary legislation
 - Minimum energy performance requirements (last 3 components)
 - Cost optimal level for MEPSs
 - Regulation on EPB specialists certification
 - National plan on nearly zero energy buildings (nZEB)
 - National program for improving the energy performance of public buildings
2. Inventory of the building stock
3. EPB law supporting activities:
 - Study on the most appropriate fiscal and financial incentives for supporting energy performance of buildings
 - Renewable energy sources integration into buildings (feasibility studies)
4. Creation of the national EPB portal (incl. the software and registers)

THE ROADMAP FOR EPB LAW IMPLEMENTATION⁽¹⁾

No	Description of activity	Phase I					
Phases		Phase I					
4	Energy performance certification (EPC)						
4.1	Review existing definition of form and content of the energy performance certificate and implement missing items	■					
4.2	Development of a report template as annex which is integral part of the		■				
5	Inspection of heating systems						
5.1	Development form and content for the inspection report (report template)		■				
6	Inspection of air conditioning systems						
6.1	Approval of draft governmental decision on inspection of air conditioning	■					
6.2	Development form and content for the inspection report (report template)		■				
8	Independent Control System (ICS)						
8.1	Definition of the independent control system for certificates and inspection reports of heating and air conditioning systems		■	■			
9	Registry of independent experts and companies						
9.1	Development of method of registration of companies		■	■			
9.2	Development of authorisation procedures for energy evaluators, inspectors of heating systems and inspectors of air conditioning systems		■	■			
11	National Institution for Sustainable Buildings						
11.1	Merge of <i>FAEE</i> and <i>AEE</i> to the new <i>NISE</i>	■	■	■			

The Roadmap for EPB Law implementation was developed in frame of the EU4Energy Governance activity "Gap analysis of the implementation of Law No 128/2014 on Energy Performance of Buildings and update of the existing drafts of secondary legislation in Moldova

THE ROADMAP FOR EPB LAW IMPLEMENTATION(2)

No	Description of activity	Phases						
		Phase II						
1	Minimum energy performance requirements based on cost optimum							
1,1	Definition of additional specifications as basis for the calculation of cost-optimal level for <i>MEPs</i> according to <i>MBN CostOpt</i>							
1,2	Development of a report on cost-optimality of <i>MEPs</i>							
1,3	Setting <i>MEPs</i> for all building categories and all building services based on results of cost-optimality calculations.							
2	Minimum energy performance requirements of technical building systems and energy from RES							
2.1	Setting <i>MEPs</i> for the technical buildings system mechanical ventilation, cooling and lighting							
2.2	Specifications/ report template for analysing the feasibility of using alternative systems is missing.							
2.3	Minimum requirements for the share of energy from RES							
3	Methodology for the calculation of energy performance of buildings							
3.1	Review of existing calculation methodology of MBN Meth and identifying gaps to new series of European EPB standards							
3.2	Development of updated methodology according to new European EPB standards based on existing scope of the regulation							
3.3	Development of methodology for calculation of the energy performance of buildings including all the technical building systems							
3.4	Development of a methodology to calculate the minimum amount of energy from renewable sources							
3.5	Development of methodology for calculation of the energy performance of buildings including the influences of RES							
3.6	Compiling of all new elements in a draft regulations for calculating the energy performance of buildings							
7	Nearly Zero Energy Buildings							
7.1	Definition of nearly zero-energy building.							
7.2	National plan to increase the number of nearly zero-energy buildings							
9	Registry of independent experts and companies							
9.3	Development of training procedures and training of energy evaluators, inspectors of heating systems an inspectors of air conditioning systems							
9.4	Development of procedures for examination and examination commission of the professional competence already established							
10	Building Stock Inventory							
10.1	Development of a national concept for implementation of the Building Stock Inventory							

The Roadmap for EPB Law implementation was developed in frame of the EU4Energy Governance activity "Gap analysis of the implementation of Law No 128/2014 on Energy Performance of Buildings and update of the existing drafts of secondary legislation in Moldova

THANK YOU!