

SUBREGION C

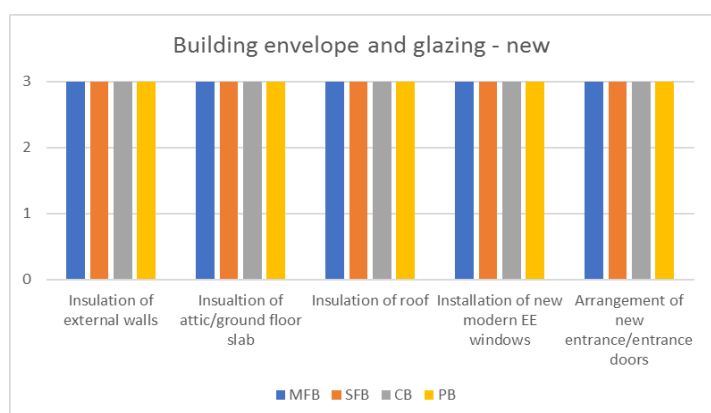
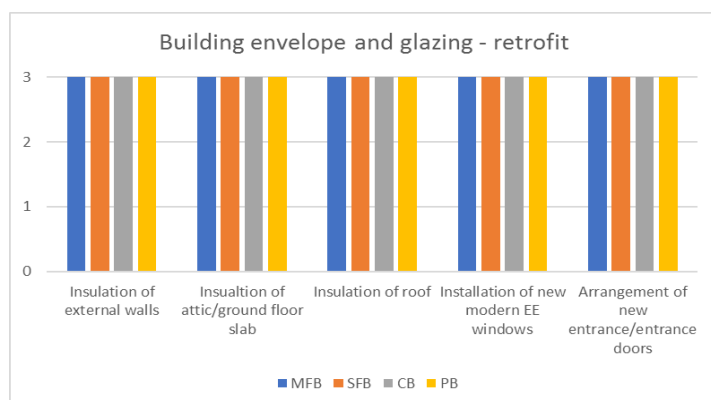
Armenia
Azerbaijan
Belarus
Georgia
Kazakhstan
Kyrgyzstan
Republic of Moldova
Russian Federation
Tajikistan
Turkmenistan
Ukraine
Uzbekistan



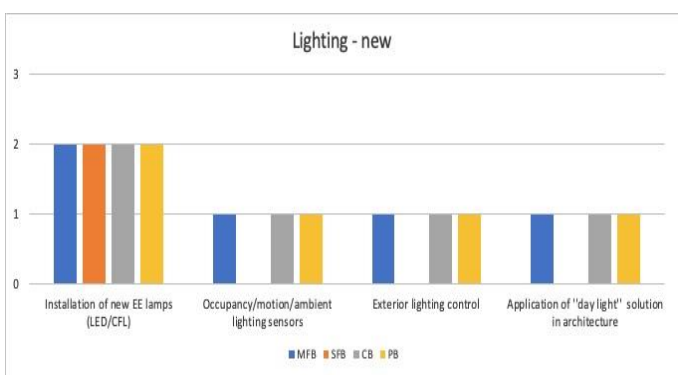
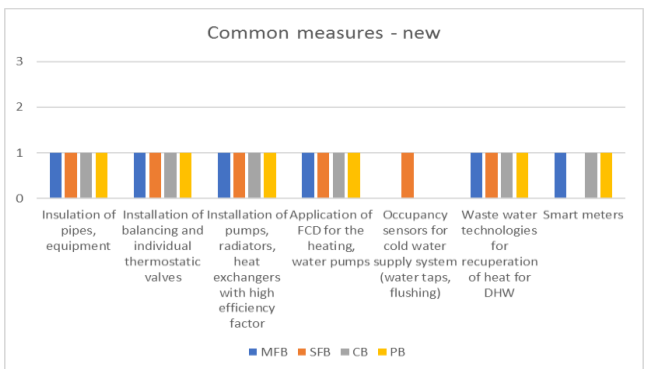
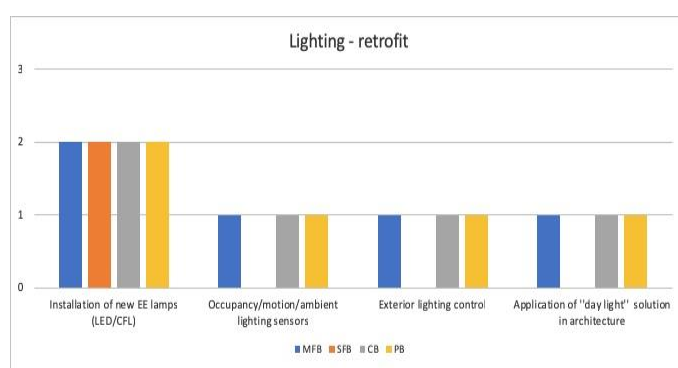
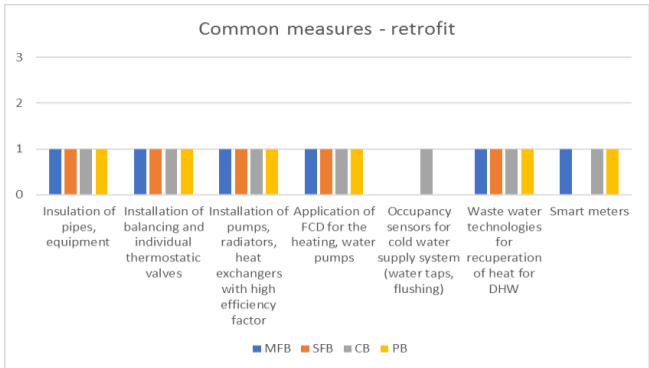
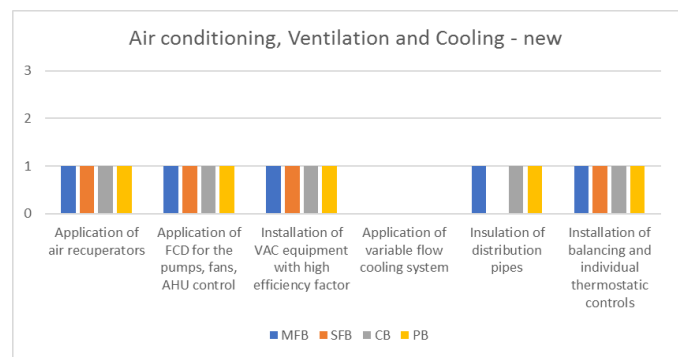
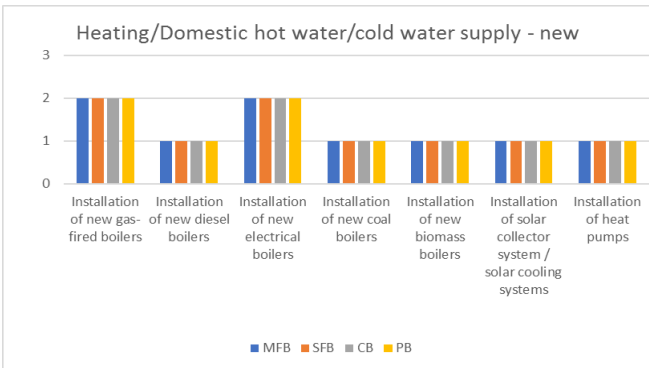
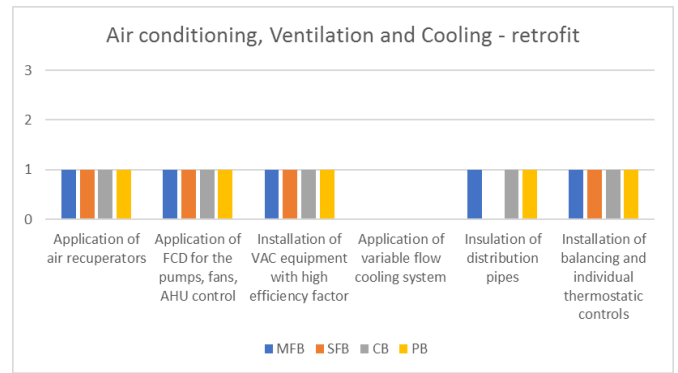
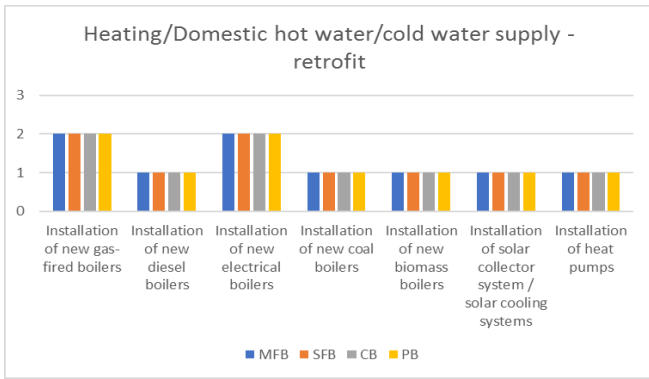
ARMENIA

OVERVIEW

In Armenia the Technical regulation on ES and EE in residential multi-apartment buildings under construction as well as in objects being constructed (reconstructed, repaired) at the expense of state means, passed into effect in 2018. These norms and rules defined e.g. different measures on buildings envelope insulation. Nowadays there are no obligatory requirements to the energy efficiency of air-conditioning, ventilation and cooling systems, which in turn affect on the application level of these technologies.



	Armenia							
	Retrofit				New construction			
	MFB	SFB	CB	PB	MFB	SFB	CB	PB
3.1 Building envelope and glazing								
Insulation of external walls	3	3	3	3	3	3	3	3
Insulation of attic/ground floor slab	3	3	3	3	3	3	3	3
Insulation of roof	3	3	3	3	3	3	3	3
Installation of new modern EE windows	3	3	3	3	3	3	3	3
Arrangement of new entrance/entrance doors	3	3	3	3	3	3	3	3
3.2 Heating/Domestic hot water/cold water supply								
3.2.a Improvement of decentralized heating source								
Installation of new gas-fired boilers	2	2	2	2	2	2	2	2
Installation of new diesel/oil boilers	1	1	1	1	1	1	1	1
Installation of new electrical boilers	2	2	2	2	2	2	2	2
Installation of new coal boilers	1	1	1	1	1	1	1	1
Installation of new biomass boilers	1	1	1	1	1	1	1	1
Installation of solar collector system / solar cooling systems	1	1	1	1	1	1	1	1
Installation of heat pumps	1	1	1	1	1	1	1	1
3.2.b Improvement of centralized heating source								
Improvement of Centralized Heating Source	1	1	1	1	1	1	1	1
3.2.c Common measures								
Installation of pipes, equipment	1	1	1	1	1	1	1	1
Installation of balancing and individual thermostatic valves	1	1	1	1	1	1	1	1
Installation of pumps, radiators, heat exchangers with high efficiency factor	1	1	1	1	1	1	1	1
Application of FCD for the heating, water pumps	1	1	1	1	1	1	1	1
Occupancy sensors for cold water supply system (water taps, autoflush)	0	0	1	0	0	1	0	0
Waste water technologies for recuperation of heat for DHW	1	1	1	1	1	1	1	1
Smart meters	1	0	1	1	1	0	1	1
3.3 Air conditioning, Ventilation and Cooling								
Application of air recuperators	1	1	1	1	1	1	1	1
Application of FCD for the pumps, fans, AHU control	1	1	1	1	1	1	1	1
Installation of VAC equipment with high efficiency factor	1	1	1	1	1	1	1	1
Application of variable flow cooling system	0	0	0	0	0	0	0	0
Insulation of distribution pipes	1	0	1	1	1	0	1	1
Installation of balancing and individual thermostatic controls	1	1	1	1	1	1	1	1
Solar cooling systems	0	0	0	0	0	0	0	0
3.4 Appliance								
EE appliance	3	3	3	3	3	3	3	3
3.5 Lighting								
Installation of new EE lamps (LED/CFL)	2	2	2	2	2	2	2	2
Occupancy/motion/ambient lighting sensors	1	0	1	1	1	0	1	1
Exterior lighting control	1	0	1	1	1	0	1	1
Application of "day light" solution in architecture	1	0	1	1	1	0	1	1

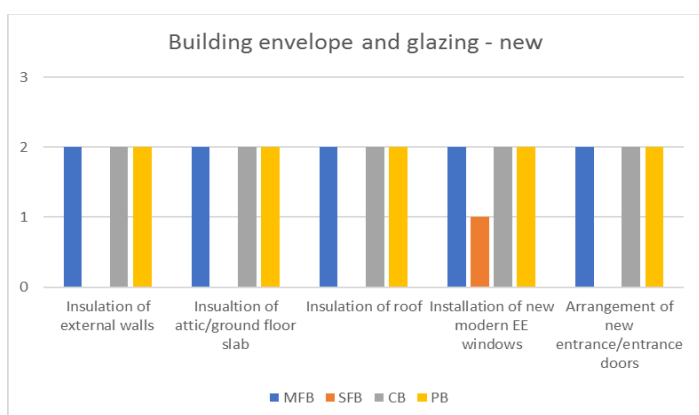
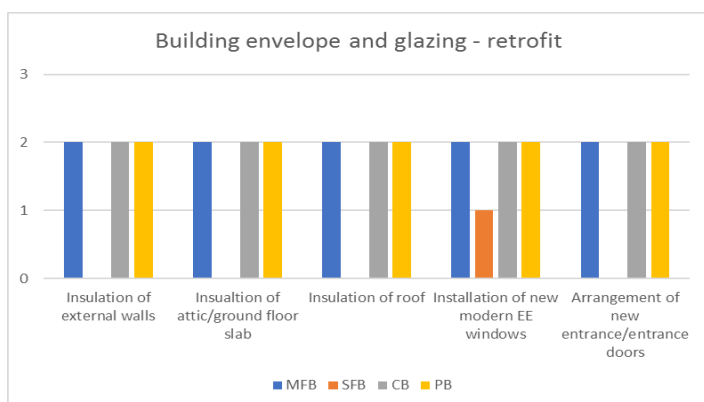




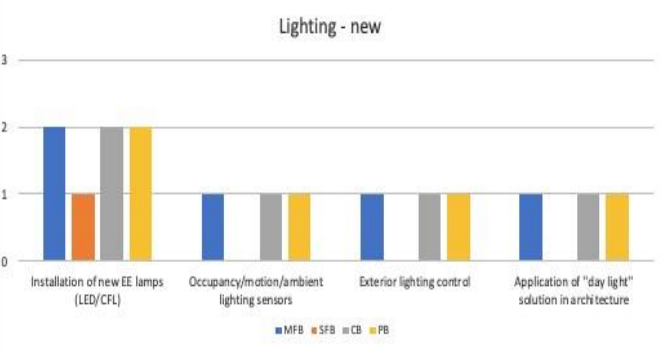
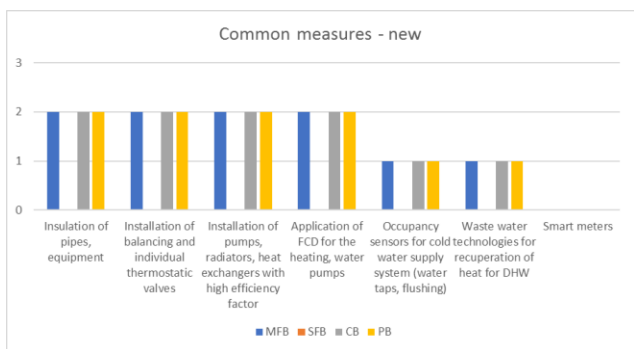
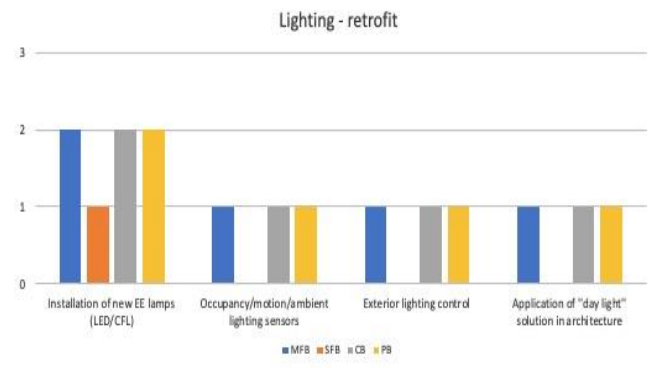
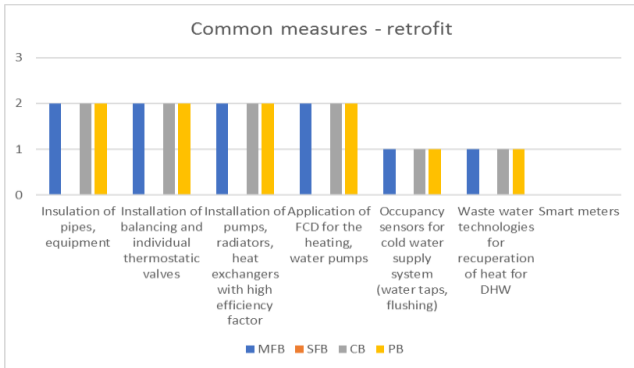
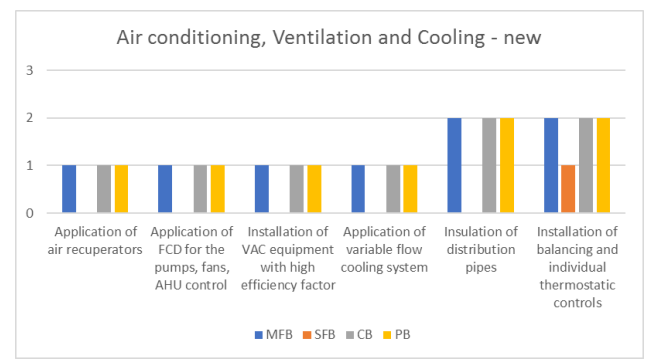
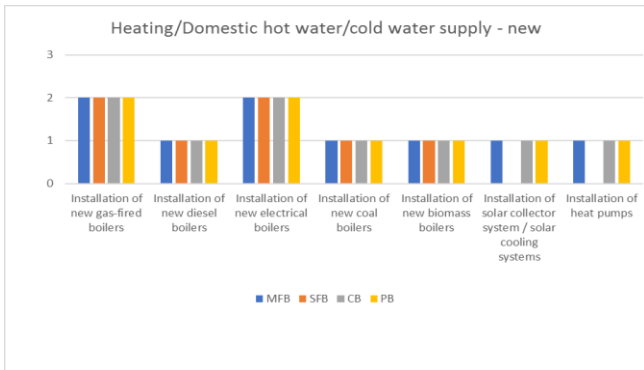
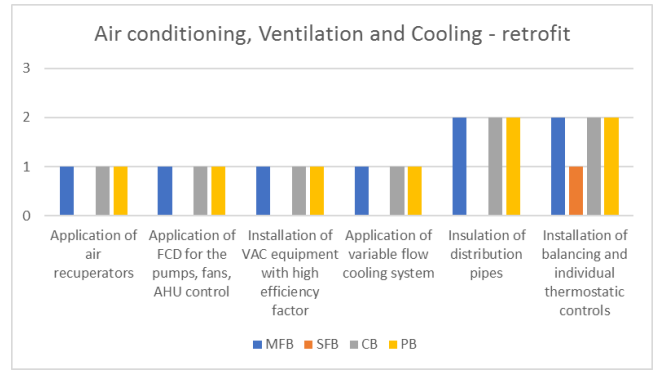
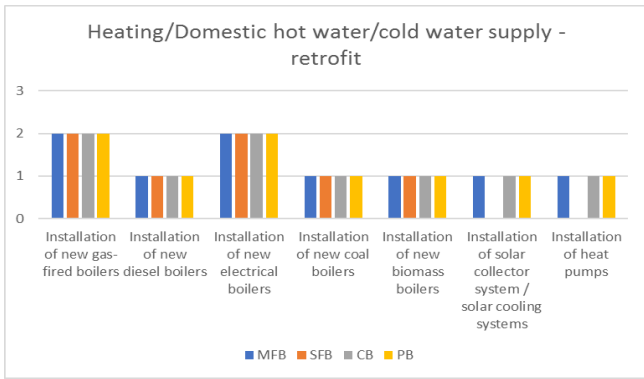
AZERBAIJAN

OVERVIEW

Despite the absence of the clear requirements in the legislation, the complexes of energy efficiency measures, such as buildings envelope insulation and installation of energy saving windows are frequently applied within the new construction and retrofit of the residential and public buildings. At the same time implementation of such technologies, as LED is not widely spread yet. The centralized heat- and hot water supply is also not widely implemented, which leads to the application of various boilers units (mostly gas-fired).



	Azerbaijan							
	Retrofit				New construction			
	MFB	SFB	CB	PB	MFB	SFB	CB	PB
3.1 Building envelope and glazing								
Insulation of external walls	2	0	2	2	2	0	2	2
Insulation of attic/ground floor slab	2	0	2	2	2	0	2	2
Insulation of roof	2	0	2	2	2	0	2	2
Installation of new modern EE windows	2	1	2	2	2	1	2	2
Arrangement of new entrance/entrance doors	2	0	2	2	2	0	2	2
3.2 Heating/Domestic hot water/cold water supply								
3.2.a Improvement of decentralized heating source								
Installation of new gas-fired boilers	2	2	2	2	2	2	2	2
Installation of new diesel/oil boilers	1	1	1	1	1	1	1	1
Installation of new electrical boilers	2	2	2	2	2	2	2	2
Installation of new coal boilers	1	1	1	1	1	1	1	1
Installation of new biomass boilers	1	1	1	1	1	1	1	1
Installation of solar collector system / solar cooling systems	1	0	1	1	1	0	1	1
Installation of heat pumps	1	0	1	1	1	0	1	1
3.2.b Improvement of centralized heating source								
Improvement of Centralized Heating Source	1	0	1	1	1	0	1	1
3.2.c Common measures								
Insulation of pipes, equipment	2	0	2	2	2	0	2	2
Installation of balancing and individual thermostatic valves	2	0	2	2	2	0	2	2
Installation of pumps, radiators, heat exchangers with high efficiency factor	2	0	2	2	2	0	2	2
Application of FCD for the heating, water pumps	2	0	2	2	2	0	2	2
Occupancy sensors for cold water supply system (water taps, autoflush)	1	0	1	1	1	0	1	1
Waste-water technologies for recuperation of heat for DHW	1	0	1	1	1	0	1	1
Smart meters	0	0	0	0	0	0	0	0
3.3 Air conditioning, Ventilation and Cooling								
Application of air recuperators	1	0	1	1	1	0	1	1
Application of FCD for the pumps, fans, AHU control	1	0	1	1	1	0	1	1
Installation of VAC equipment with high efficiency factor	1	0	1	1	1	0	1	1
Application of variable flow cooling system	1	0	1	1	1	0	1	1
Installation of distribution pipes	2	0	2	2	2	0	2	2
Installation of balancing and individual thermostatic controls	2	1	2	2	2	1	2	2
3.4 Appliance								
EE appliance	2	2	2	2	2	2	2	2
3.5 Lighting								
Installation of new EE lamps (LED/ CFL)	2	1	2	2	2	1	2	2
Occupancy/motion/ambient lighting sensors	1	0	1	1	1	0	1	1
Exterior lighting control	1	0	1	1	1	0	1	1
Application of "day light" solution in architecture	1	0	1	1	1	0	1	1

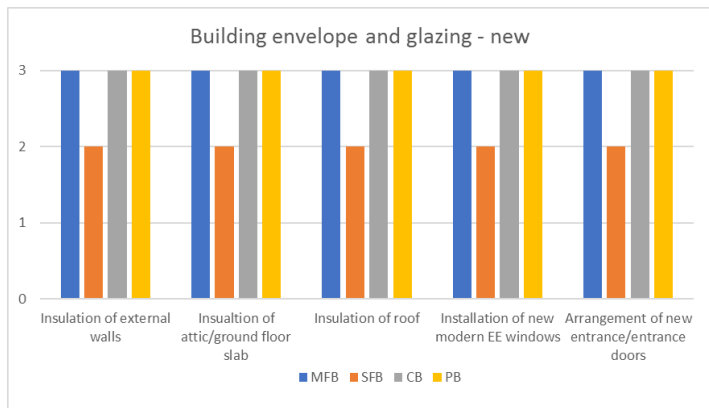
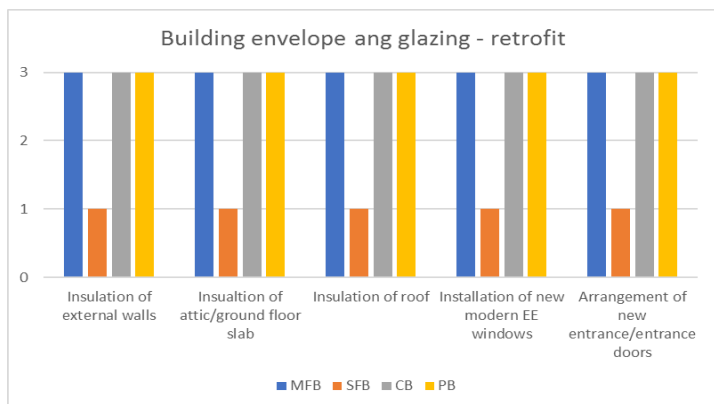




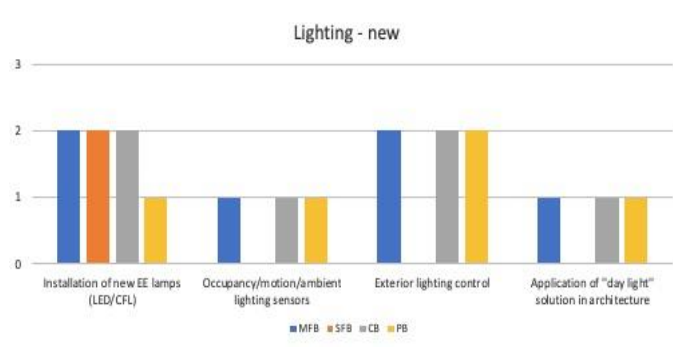
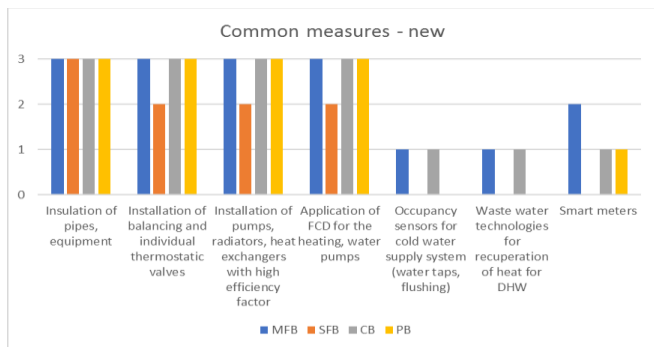
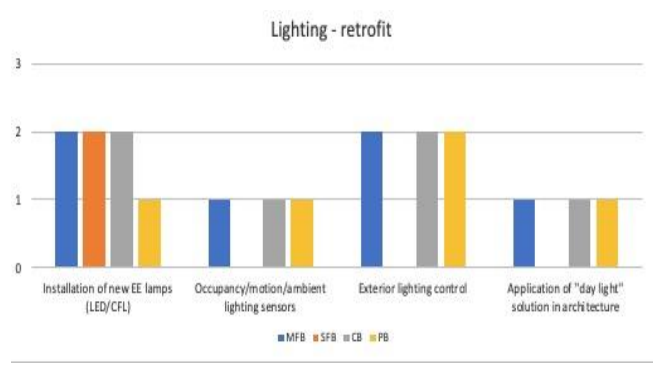
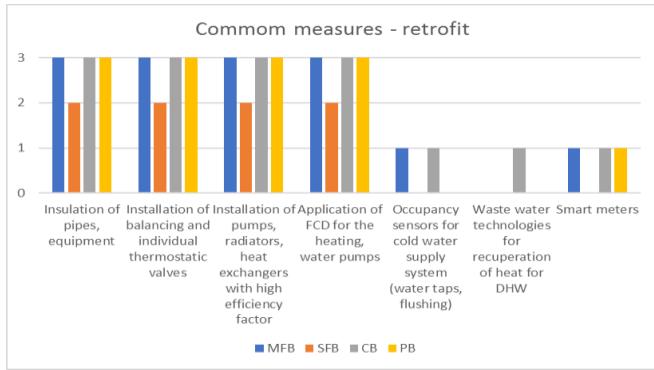
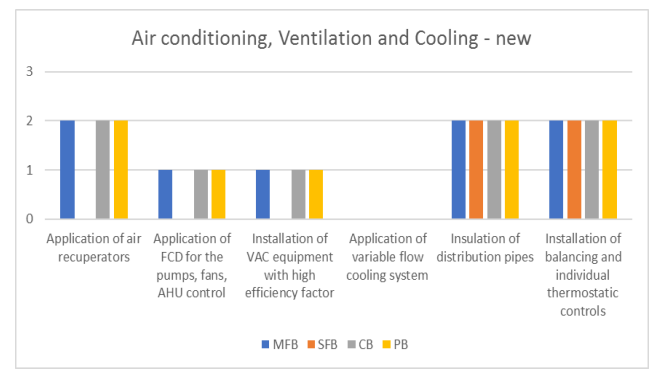
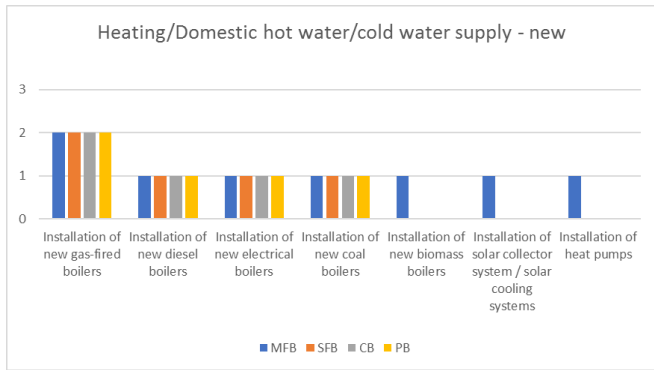
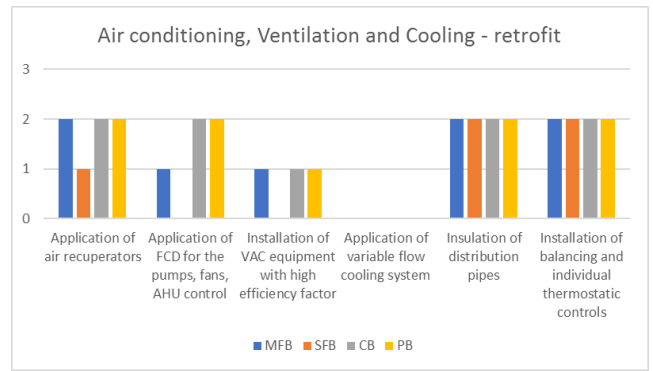
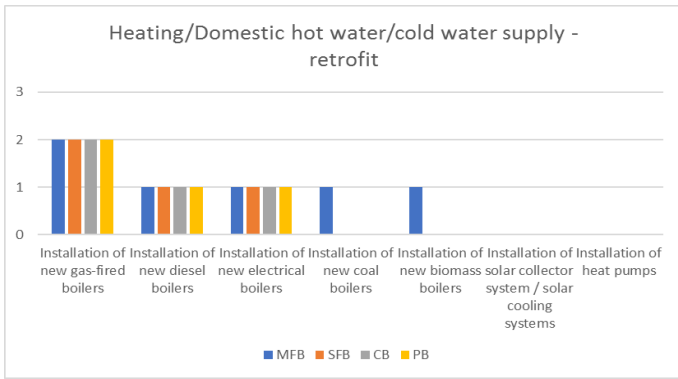
BELARUS

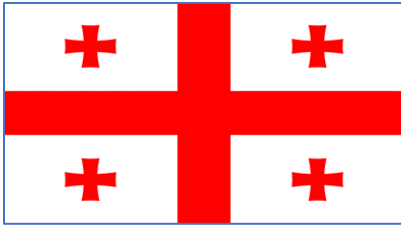
OVERVIEW

Implementation of the various insulation technologies for buildings envelope while new construction and retrofit is almost across the board in Belarus. The regulatory framework in this field defines the implementation of these technologies both by new construction and capital repairs of the residential and public buildings. However, walls insulation and installation of the modern energy saving windows are being seldom applied by the retrofit of the private single-family buildings.



	Belarus							
	Retrofit				New construction			
	MFB	SFB	CB	PB	MFB	SFB	CB	PB
3.1 Building envelope and glazing								
Insulation of external walls	3	1	3	3	3	2	3	3
Insulation of attic/ground floor slab	3	1	3	3	3	2	3	3
Insulation of roof	3	1	3	3	3	2	3	3
Installation of new modern EE windows	3	1	3	3	3	2	3	3
Arrangement of new entrance/entrance doors	3	1	3	3	3	2	3	3
3.2 Heating/Domestic hot water/cold water supply								
3.2.a Improvement of decentralized heating source								
Installation of new gas-fired boilers	2	2	2	2	2	2	2	2
Installation of new diesel/oil boilers	1	1	1	1	1	1	1	1
Installation of new electrical boilers	1	1	1	1	1	1	1	1
Installation of new coal boilers	1	0	0	0	1	1	1	1
Installation of new biomass boilers	1	0	0	0	1	0	0	0
Installation of solar collector system / solar cooling systems	0	0	0	0	1	0	0	0
Installation of heat pumps	0	0	0	0	1	0	0	0
3.2.b Improvement of centralized heating source								
Improvement of Centralized Heating Source	1	0	1	1	1	0	1	1
3.2.c Common measures								
Insulation of pipes, equipment	3	2	3	3	3	3	3	3
Installation of balancing and individual thermostatic valves	3	2	3	3	3	2	3	3
Installation of pumps, radiators, heat exchangers with high efficiency factor	3	2	3	3	3	2	3	3
Application of FCD for the heating, water pumps	3	2	3	3	3	2	3	3
Occupancy sensors for cold water supply system (water taps, autoflush)	1	0	1	0	1	0	1	0
Waste water technologies for recuperation of heat for DHW	0	0	1	0	1	0	1	0
Smart meters	1	0	1	1	2	0	1	1
3.3 Air conditioning, Ventilation and Cooling								
Application of air recuperators	2	1	2	2	2	0	2	2
Application of FCD for the pumps, fans, AHU control	1	0	2	2	1	0	1	1
Installation of VAC equipment with high efficiency factor	1	0	1	1	1	0	1	1
Application of variable flow cooling system	0	0	0	0	0	0	0	0
Insulation of distribution pipes	2	2	2	2	2	2	2	2
Installation of balancing and individual thermostatic controls	2	2	2	2	2	2	2	2
3.4 Appliance								
EE appliance	3	3	3	3	3	3	3	3
3.5 Lighting								
Installation of new EE lamps (LED/CFL)	2	2	2	1	2	2	2	1
Occupancy/motion/ambient lighting sensors	1	0	1	1	1	0	1	1
Exterior lighting control	2	0	2	2	2	0	2	2
Application of "day light" solution in architecture	1	0	1	1	1	0	1	1

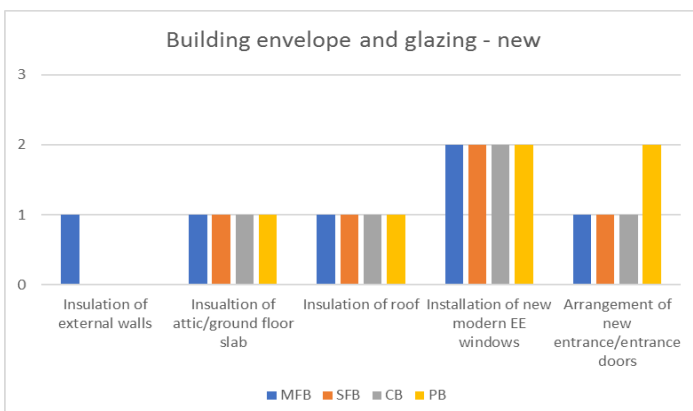
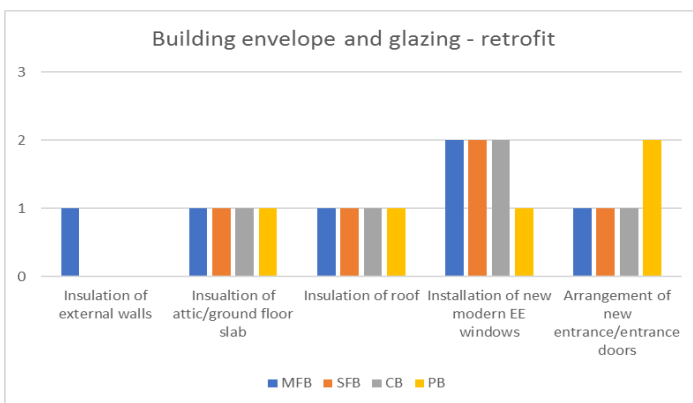




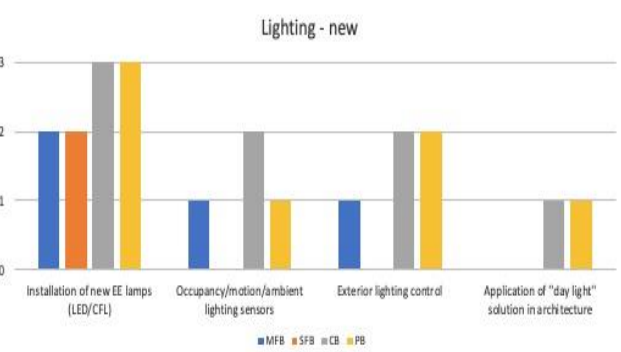
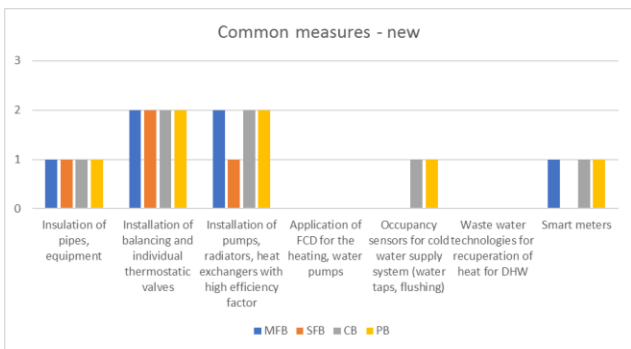
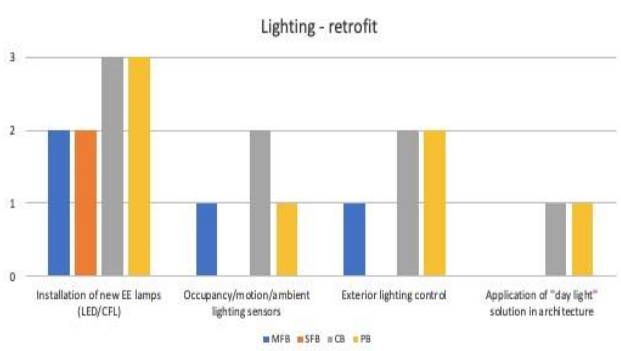
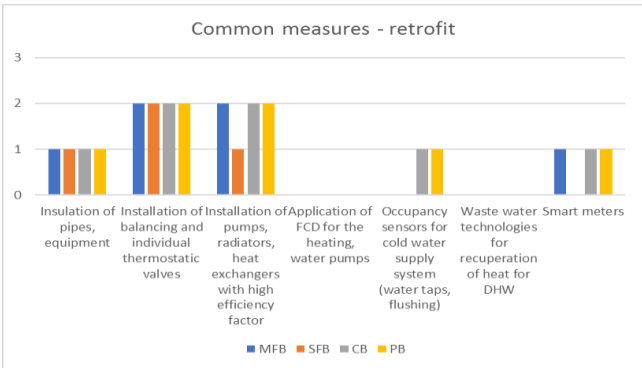
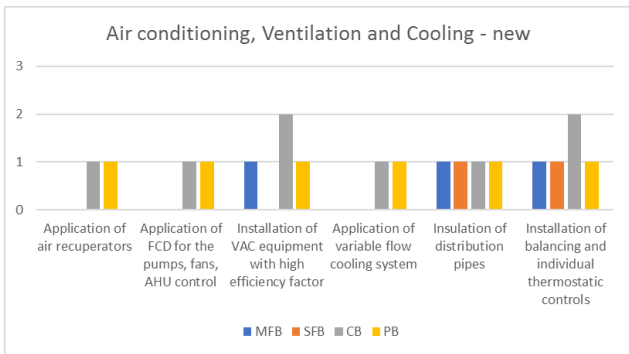
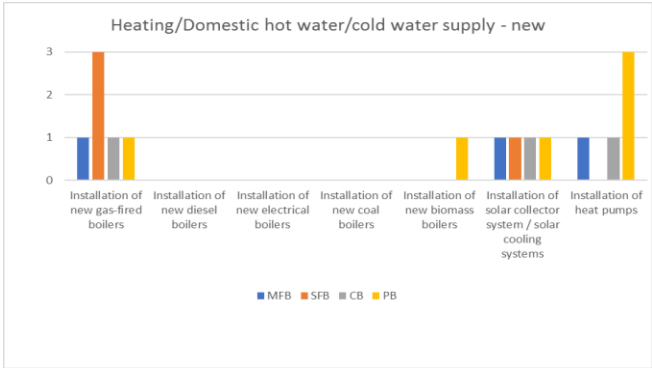
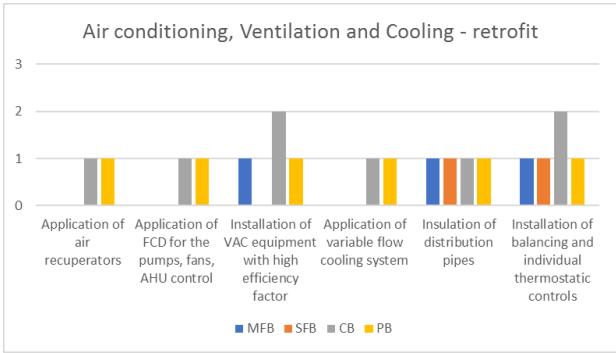
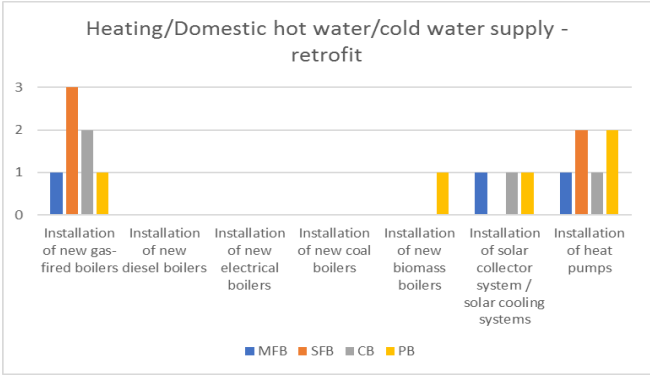
GEORGIA

OVERVIEW

In Georgia there are no regulatory framework, adopted on the national level. There are also no specific requirements to the energy efficient labelling of the household appliances. But despite the facts, mentioned above, installation of LED lamps is obligatory for all commercial and public buildings.



	Georgia							
	Retrofit				New construction			
	MFB	SFB	CB	PB	MFB	SFB	CB	PB
3.1 Building envelope and glazing								
Insulation of external walls	1	0	0	0	1	0	0	0
Insulation of attic/ground floor slab	1	1	1	1	1	1	1	1
Insulation of roof	1	1	1	1	1	1	1	1
Installation of new modern EE windows	2	2	2	1	2	2	2	2
Arrangement of new entrance/entrance doors	1	1	1	2	1	1	1	2
3.2 Heating/Domestic hot water/cold water supply								
3.2.a Improvement of decentralized heating source								
Installation of new gas-fired boilers	1	3	2	1	1	3	1	1
Installation of new diesel/oil boilers	0	0	0	0	0	0	0	0
Installation of new electrical boilers	0	0	0	0	0	0	0	0
Installation of new coal boilers	0	0	0	0	0	0	0	0
Installation of new biomass boilers	0	0	0	1	0	0	0	1
Installation of solar collector system / solar cooling systems	1	0	1	1	1	1	1	1
Installation of heat pumps	1	2	1	2	1	0	1	3
3.2.b Improvement of centralized heating source								
Improvement of Centralized Heating Source	1	2	2	1	1	2	2	1
3.2.c Common measures								
Insulation of pipes, equipment	1	1	1	1	1	1	1	1
Installation of balancing and individual thermostatic valves	2	2	2	2	2	2	2	2
Installation of pumps, radiators, heat exchangers with high efficiency factor	2	1	2	2	2	1	2	2
Application of FCD for the heating, water pumps	0	0	0	0	0	0	0	0
Occupancy sensors for cold water supply system (water taps, autoflush)	0	0	1	1	0	0	1	1
Waste water technologies for recuperation of heat for DHW	0	0	0	0	0	0	0	0
Smart meters	1	0	1	1	1	0	1	1
3.3 Air conditioning, Ventilation and Cooling								
Application of air recuperators	0	0	1	1	0	0	1	1
Application of FCD for the pumps, fans, AHU control	0	0	1	1	0	0	1	1
Installation of VAC equipment with high efficiency factor	1	0	2	1	1	0	2	1
Application of variable flow cooling system	0	0	1	1	0	0	1	1
Insulation of distribution pipes	1	1	1	1	1	1	1	1
Installation of balancing and individual thermostatic controls	1	1	2	1	1	1	2	1
3.4 Appliance								
EE appliance	2	2	2	2	2	2	2	2
3.5 Lighting								
Installation of new EE lamps (LED/CFL)	2	2	3	3	2	2	3	3
Occupancy/motion/ambient lighting sensors	1	0	2	1	1	0	2	1
Exterior lighting control	1	0	2	2	1	0	2	2
Application of "day light" solution in architecture	0	0	1	1	0	0	1	1

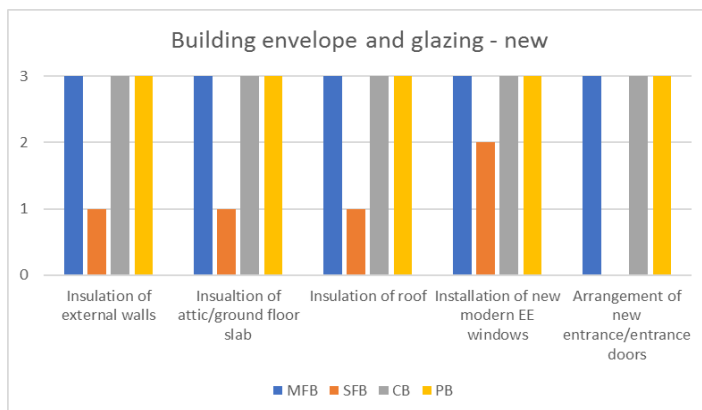
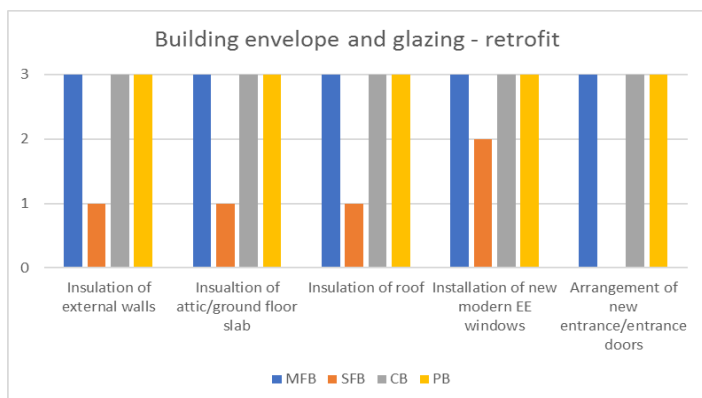




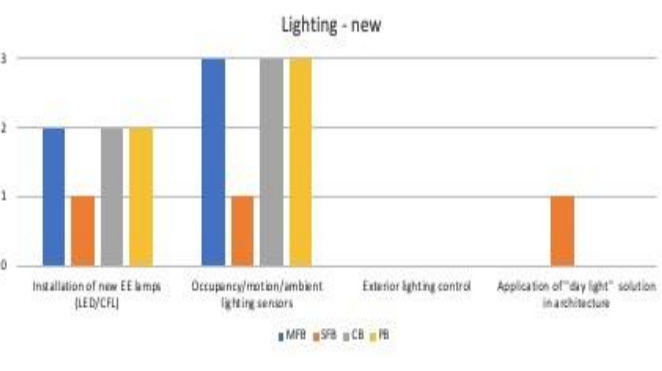
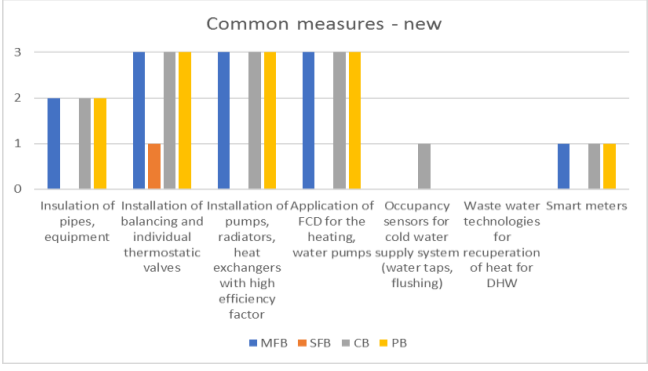
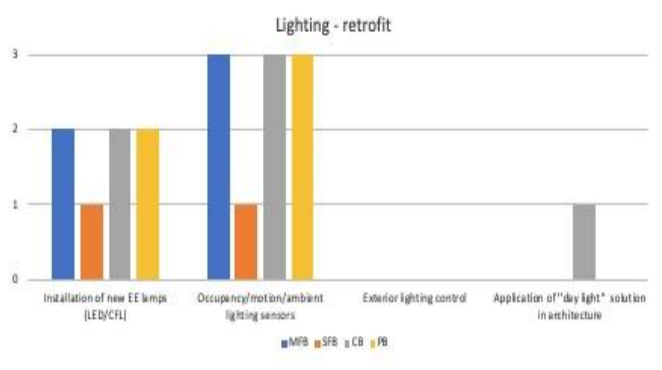
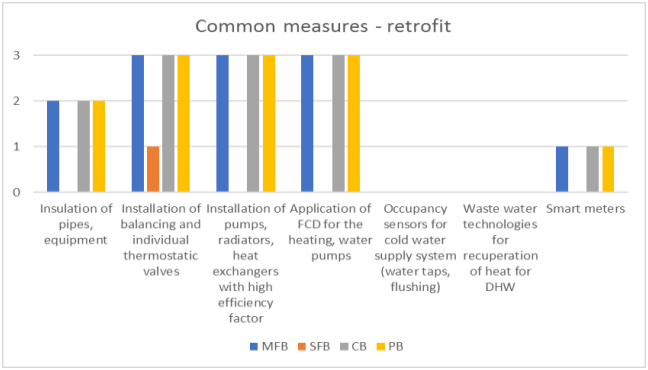
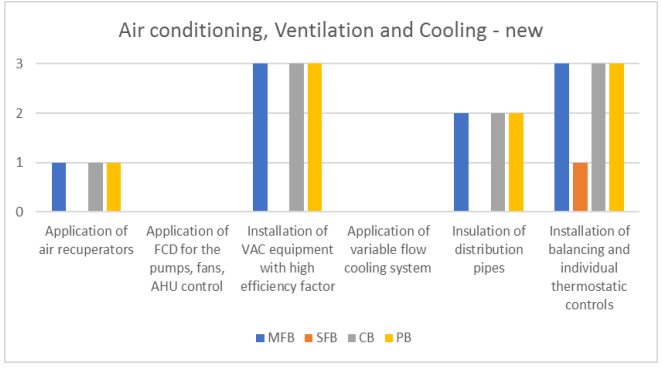
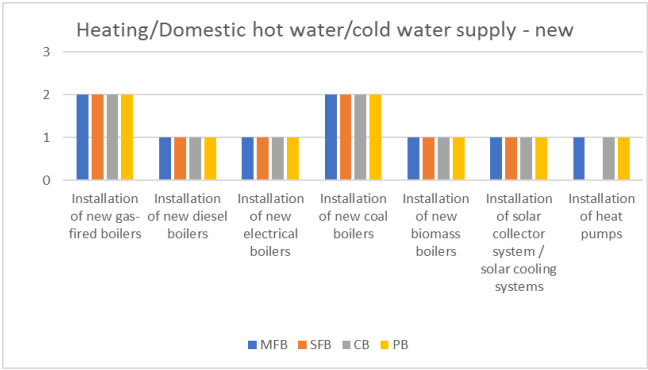
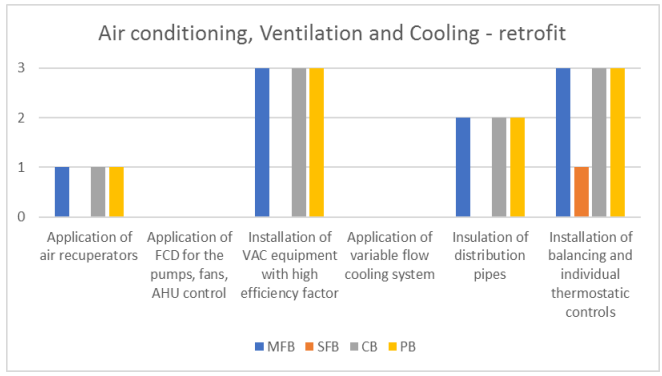
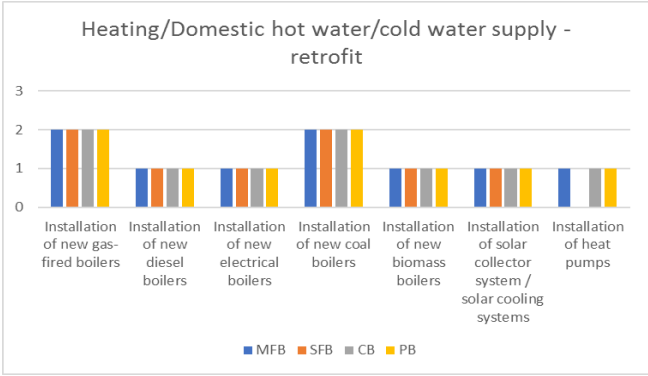
KAZAKHSTAN

OVERVIEW

The range of legislative documents, which define the implementation of energy saving technologies for building envelope within the new construction, was adopted on the national level in Kazakhstan. At the same time, modernization of the air-conditioning, ventilation and cooling systems for the premises are not obligatory to follow and, as a result, the energy efficient technologies in this field are not widely implemented.



	Kazakhstan							
	Retrofit				New construction			
	MFB	SFB	CB	PB	MFB	SFB	CB	PB
3.1 Building envelope and glazing								
Insulation of external walls	3	1	3	3	3	1	3	3
Insulation of attic/ground floor slab	3	1	3	3	3	1	3	3
Insulation of roof	3	1	3	3	3	1	3	3
Installation of new modern EE windows	3	2	3	3	3	2	3	3
Arrangement of new entrance/entrance doors	3	0	3	3	3	0	3	3
3.2 Heating/Domestic hot water/cold water supply								
3.2.a Improvement of decentralized heating source								
Installation of new gas-fired boilers	2	2	2	2	2	2	2	2
Installation of new diesel/oil boilers	1	1	1	1	1	1	1	1
Installation of new electrical boilers	1	1	1	1	1	1	1	1
Installation of new coal boilers	2	2	2	2	2	2	2	2
Installation of new biomass boilers	1	1	1	1	1	1	1	1
Installation of solar collector system / solar cooling systems	1	1	1	1	1	1	1	1
Installation of heat pumps	1	0	1	1	1	0	1	1
3.2.b Improvement of centralized heating source								
Improvement of Centralized Heating Source	3	0	3	3	3	0	3	3
3.2.c Common measures								
Insulation of pipes, equipment	2	0	2	2	2	0	2	2
Installation of balancing and individual thermostatic valves	3	1	3	3	3	1	3	3
Installation of pumps, radiators, heat exchangers with high efficiency factor	3	0	3	3	3	0	3	3
Application of FCD for the heating, water pumps	3	0	3	3	3	0	3	3
Occupancy sensors for cold water supply system (water taps, autoflush)	0	0	0	0	0	0	1	0
Waste water technologies for recuperation of heat for DHW	0	0	0	0	0	0	0	0
Smart meters	1	0	1	1	1	0	1	1
3.3 Air conditioning, Ventilation and Cooling								
Application of air recuperators	1	0	1	1	1	0	1	1
Application of FCD for the pumps, fans, AHU control	0	0	0	0	0	0	0	0
Installation of VAC equipment with high efficiency factor	3	0	3	3	3	0	3	3
Application of variable flow cooling system	0	0	0	0	0	0	0	0
Insulation of distribution pipes	2	0	2	2	2	0	2	2
Installation of balancing and individual thermostatic controls	3	1	3	3	3	1	3	3
Solar cooling systems	0	0	0	0	0	0	0	0
3.4 Appliance								
EE appliance	3	3	3	3	3	3	3	3
3.5 Lighting								
Installation of new EE lamps (LED/CFL)	2	1	2	2	2	1	2	2
Occupancy/motion/ambient lighting sensors	3	1	3	3	3	1	3	3
Exterior lighting control	0	0	0	0	0	0	0	0
Application of "day light" solution in architecture	0	0	1	0	0	1	0	0

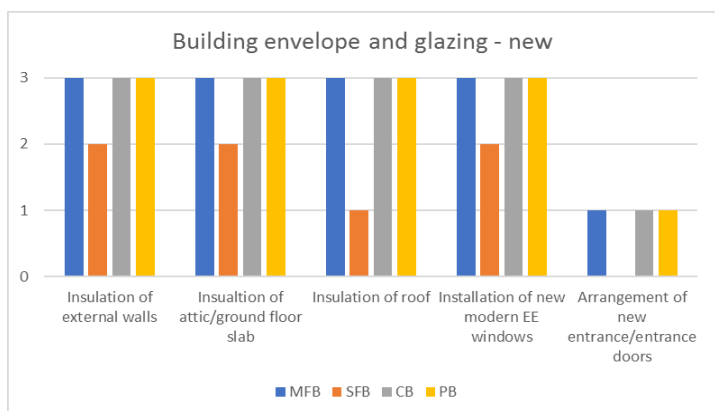
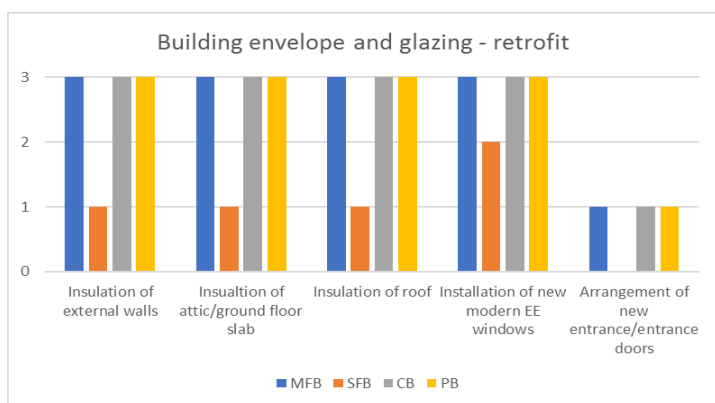




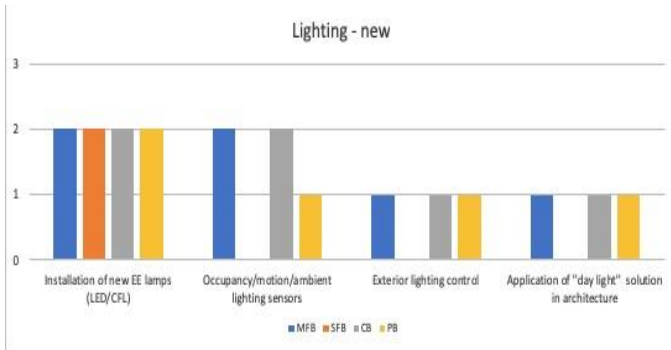
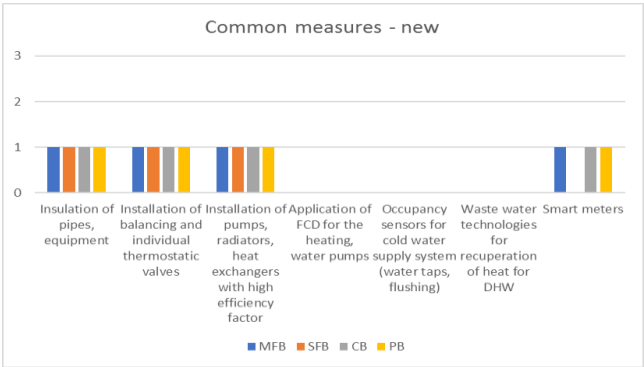
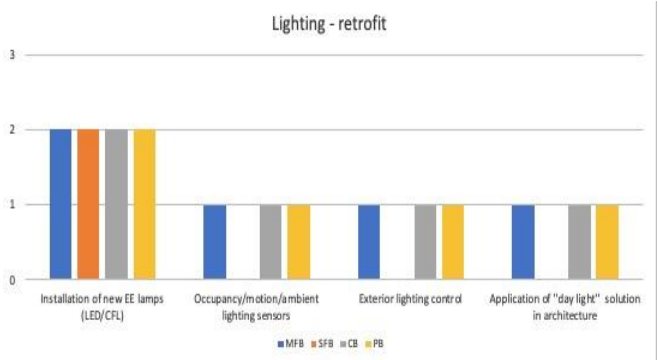
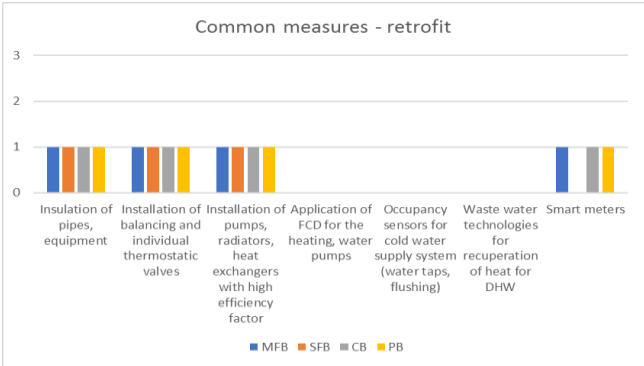
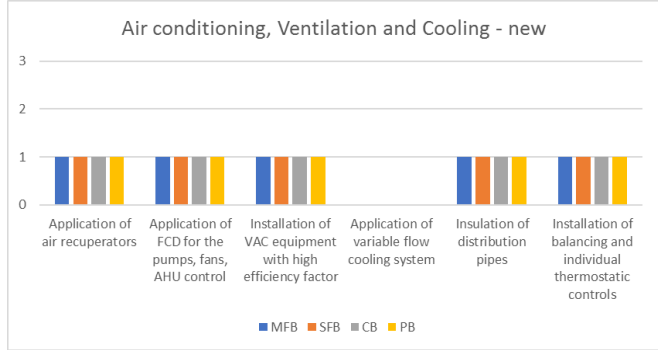
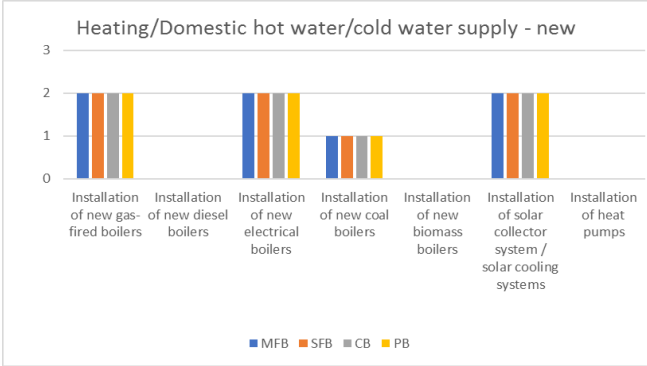
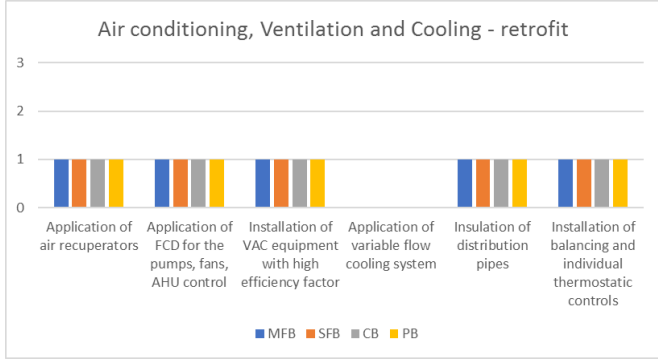
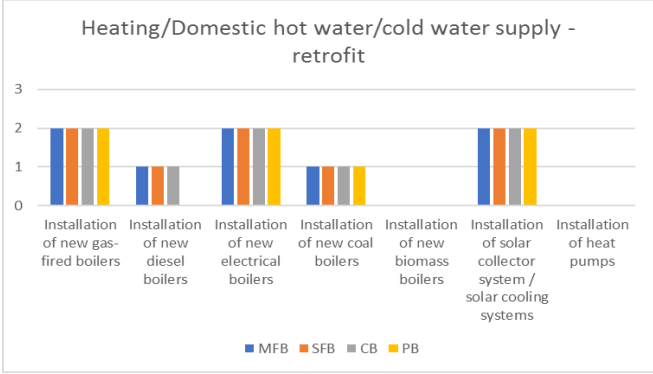
KYRGYZSTAN

OVERVIEW

The measures on buildings envelope insulation are obligatory both for new construction and retrofit of the multi-apartment residential, public and commercial buildings. However, such technologies, like various floor cooling systems or waste water recuperators haven't found a broad application yet.



	Kyrgyzstan							
	Retrofit				New construction			
	MFB	SFB	CB	PB	MFB	SFB	CB	PB
3.1 Building envelope and glazing								
Insulation of external walls	3	1	3	3	3	2	3	3
Insulation of attic/ground floor slab	3	1	3	3	3	2	3	3
Insulation of roof	3	1	3	3	3	1	3	3
Installation of new modern EE windows	3	2	3	3	3	2	3	3
Arrangement of new entrance/entrance doors	1	0	1	1	1	0	1	1
3.2 Heating/Domestic hot water/cold water supply								
3.2.a Improvement of decentralized heating source								
Installation of new gas-fired boilers	2	2	2	2	2	2	2	2
Installation of new diesel/oil boilers	1	1	1	0	0	0	0	0
Installation of new electrical boilers	2	2	2	2	2	2	2	2
Installation of new coal boilers	1	1	1	1	1	1	1	1
Installation of new biomass boilers	0	0	0	0	0	0	0	0
Installation of solar collector system / solar cooling systems	2	2	2	2	2	2	2	2
Installation of heat pumps	0	0	0	0	0	0	0	0
3.2.b Improvement of centralized heating source								
Improvement of Centralized Heating Source	1	1	1	1	1	1	1	1
3.2.c Common measures								
Insulation of pipes, equipment	1	1	1	1	1	1	1	1
Installation of balancing and individual thermostatic valves	1	1	1	1	1	1	1	1
Installation of pumps, radiators, heat exchangers with high efficiency factor	1	1	1	1	1	1	1	1
Application of FCD for the heating, water pumps	0	0	0	0	0	0	0	0
Occupancy sensors for cold water supply system (water taps, autoflush)	0	0	0	0	0	0	0	0
Waste water technologies for recuperation of heat for DHW	0	0	0	0	0	0	0	0
Smart meters	1	0	1	1	1	0	1	1
3.3 Air conditioning, Ventilation and Cooling								
Application of air recuperators	1	1	1	1	1	1	1	1
Application of FCD for the pumps, fans, AHU control	1	1	1	1	1	1	1	1
Installation of VAC equipment with high efficiency factor	1	1	1	1	1	1	1	1
Application of variable flow cooling system	0	0	0	0	0	0	0	0
Insulation of distribution pipes	1	1	1	1	1	1	1	1
Installation of balancing and individual thermostatic controls	1	1	1	1	1	1	1	1
Solar cooling systems	0	0	0	0	0	0	0	0
3.4 Appliance								
EE appliance	3	3	3	3	3	3	3	3
3.5 Lighting								
Installation of new EE lamps (LED/CFL)	2	2	2	2	2	2	2	2
Occupancy/motion/ambient lighting sensors	1	0	1	1	2	0	2	1
Exterior lighting control	1	0	1	1	1	0	1	1
Application of "day light" solution in architecture	1	0	1	1	1	0	1	1

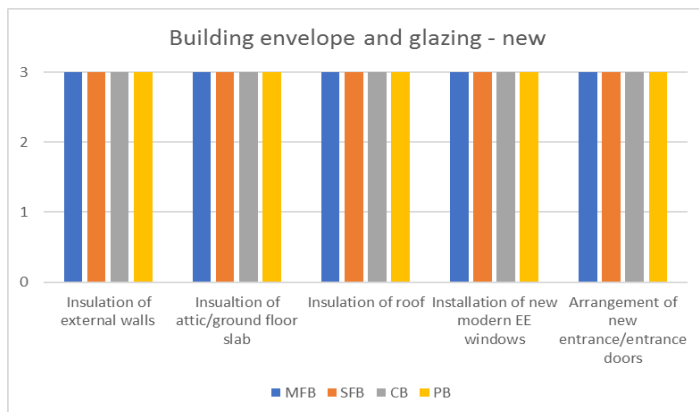
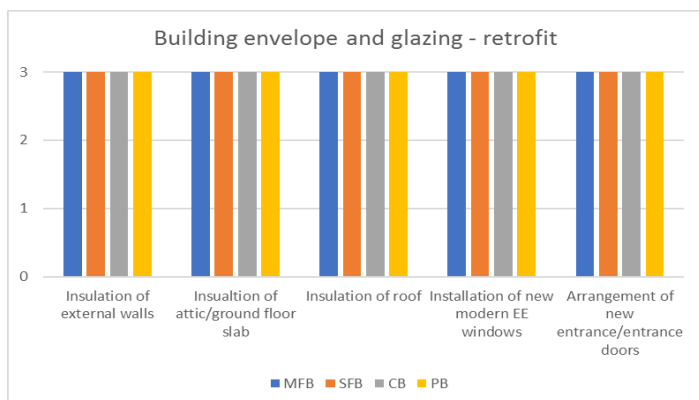




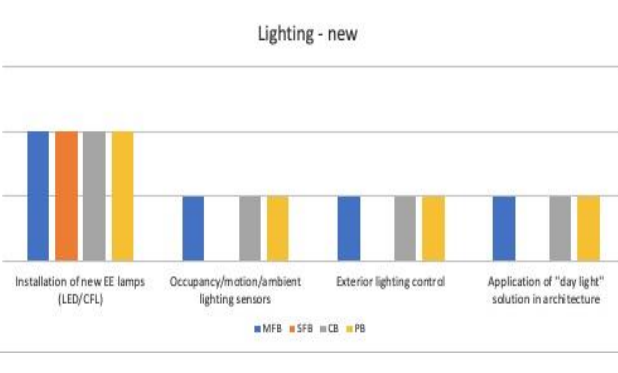
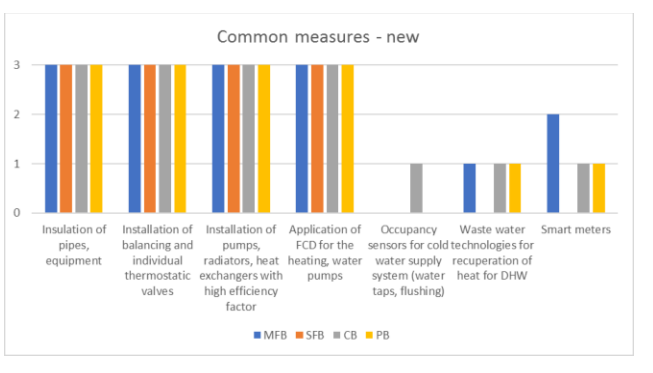
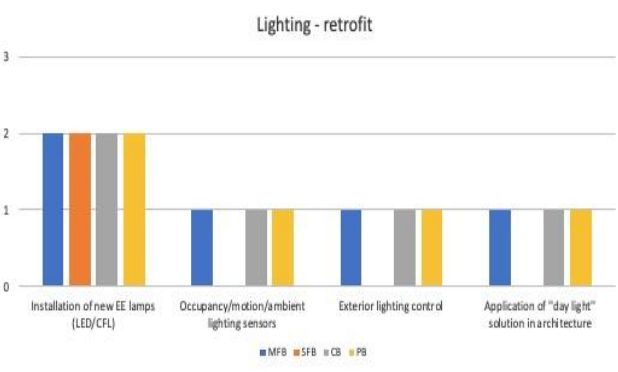
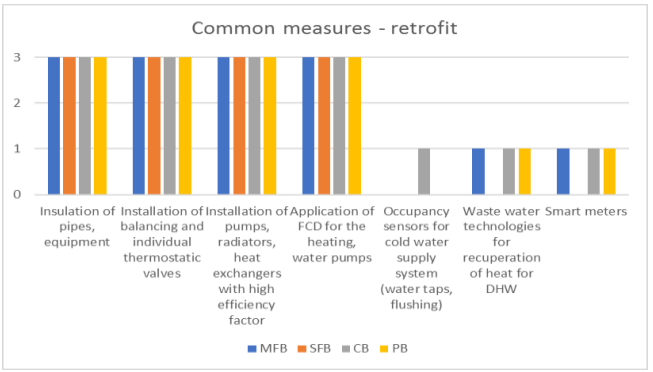
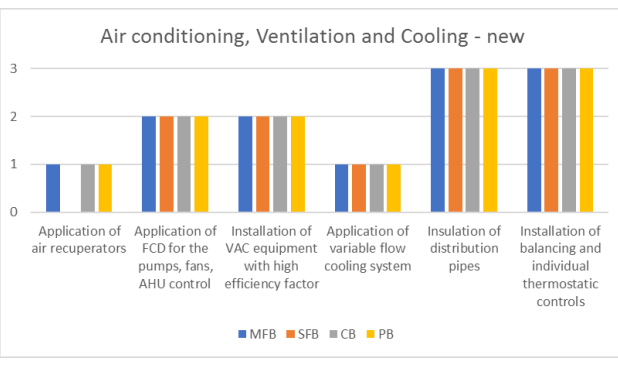
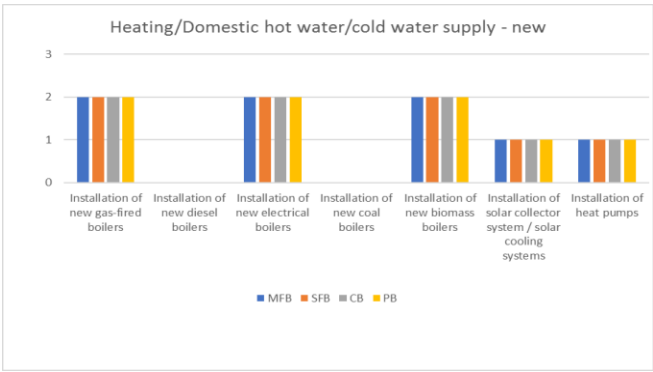
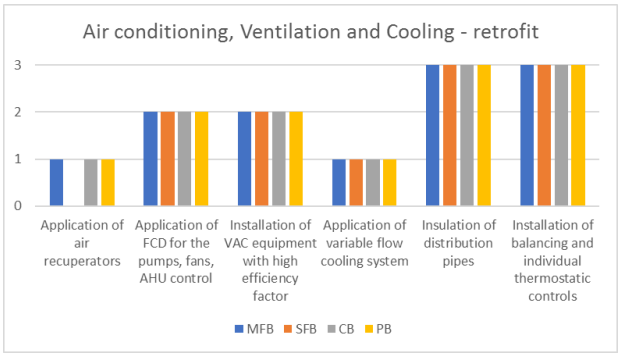
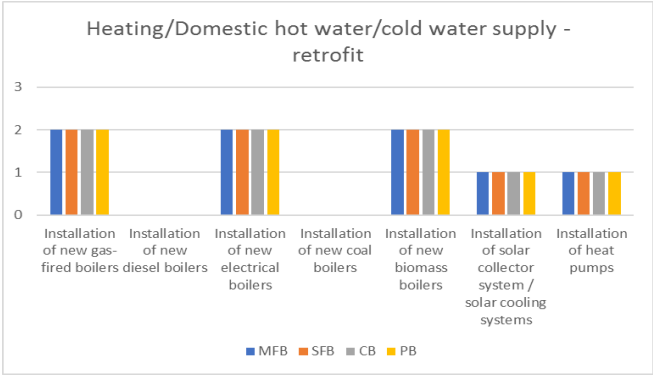
REPUBLIC OF MOLDOVA

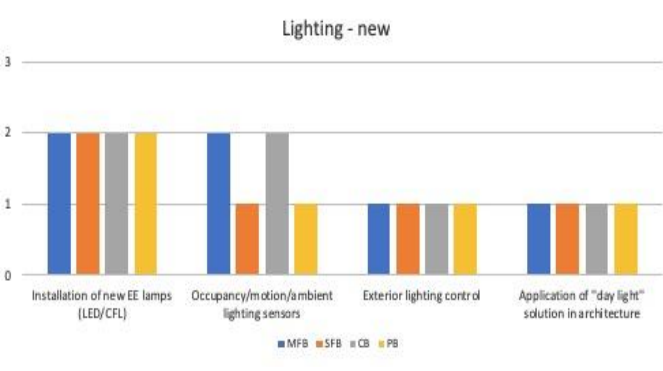
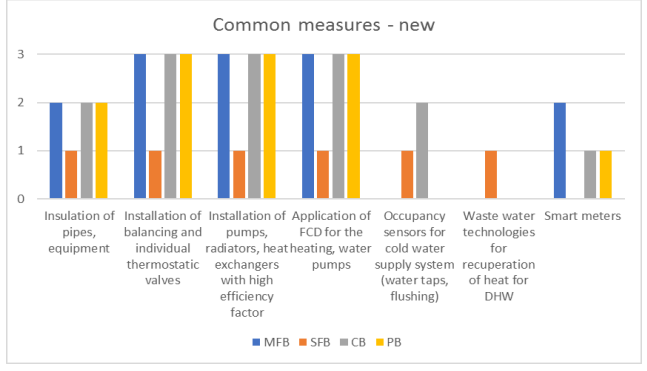
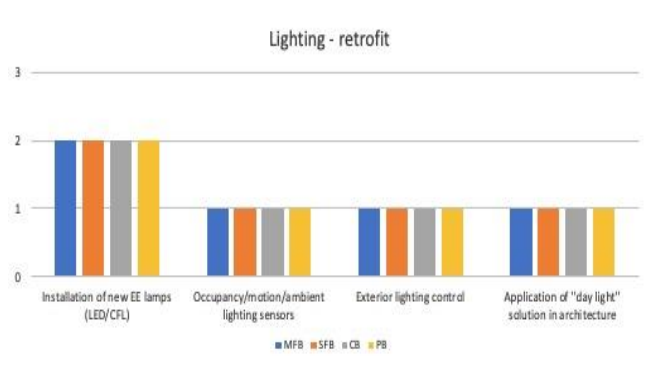
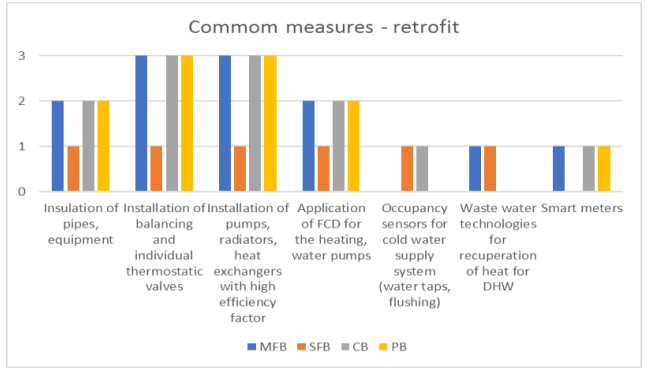
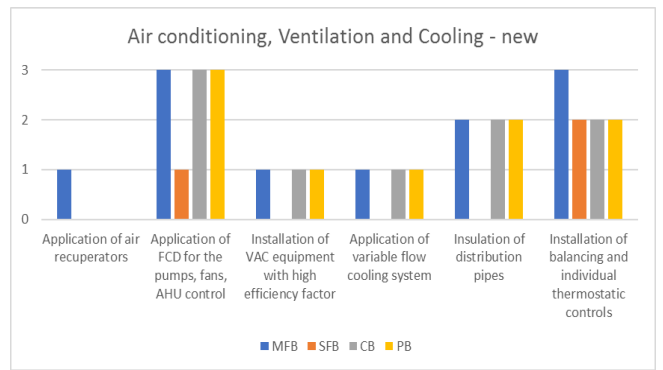
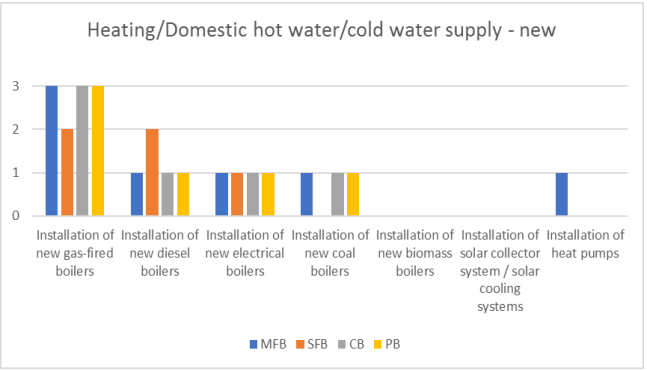
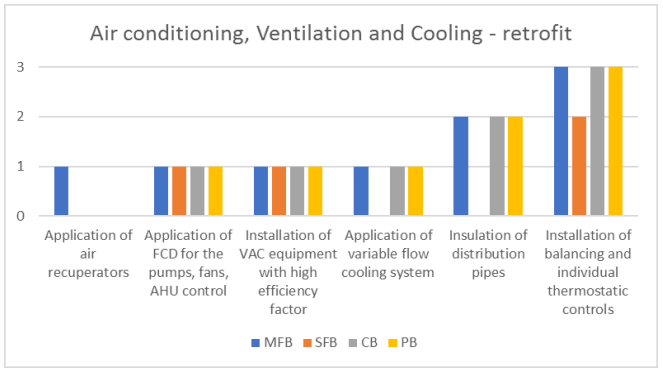
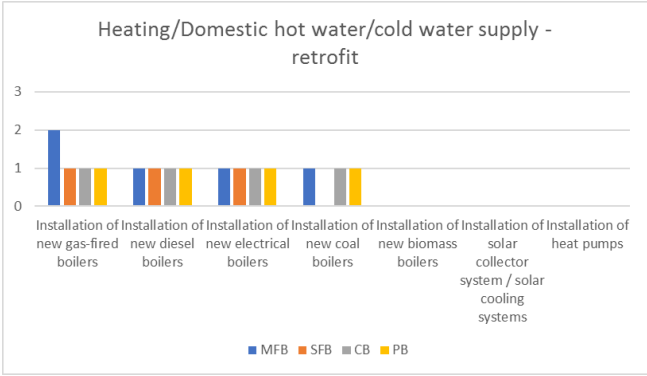
OVERVIEW

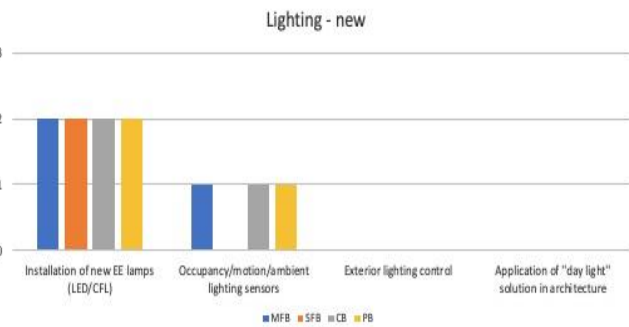
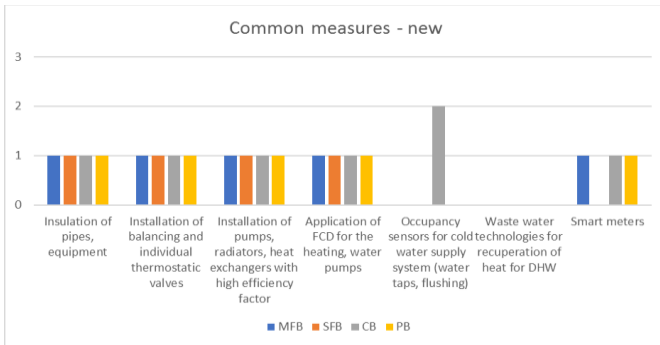
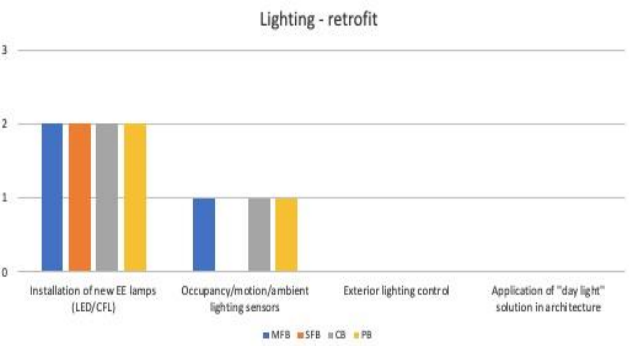
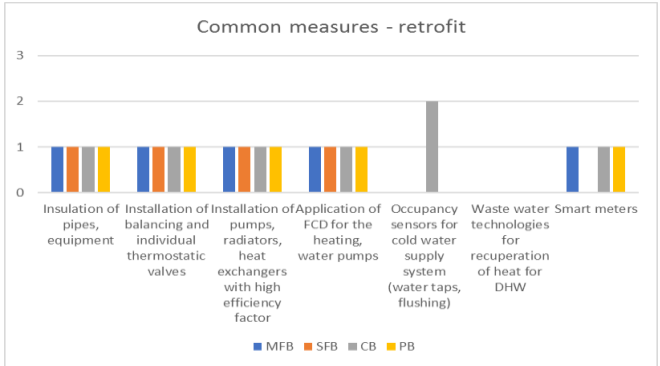
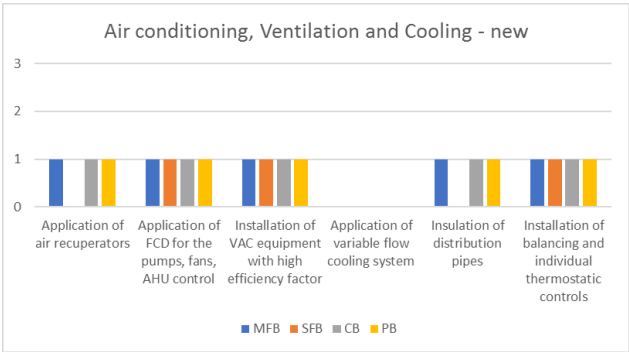
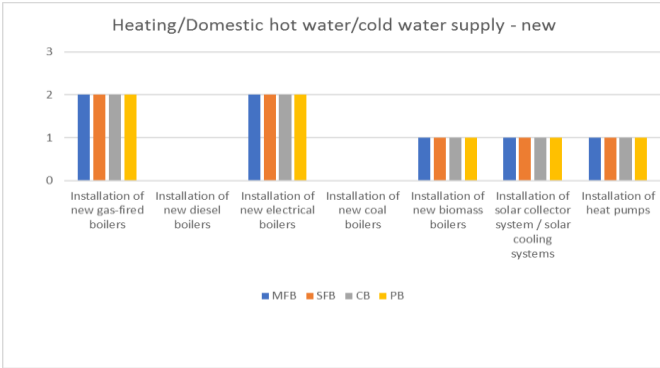
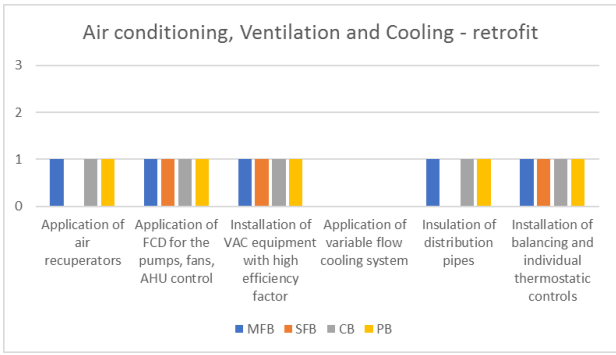
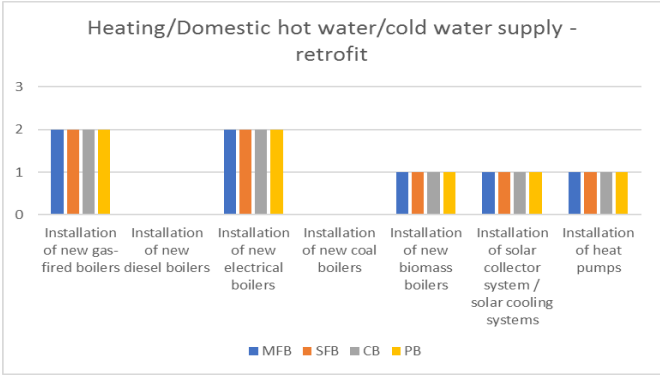
According to the respective Law, application of the different energy saving technologies in new construction and capital repairs of all buildings types is mandatory in the Republic of Moldova since 2014. However, there are no obligatory requirements to the LED technologies implementation, though the customers mostly prefer the modern energy saving lamps.

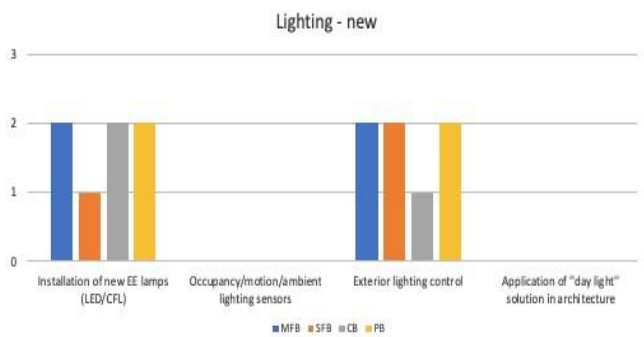
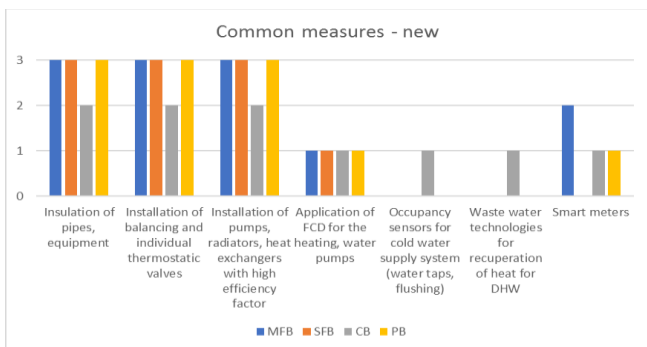
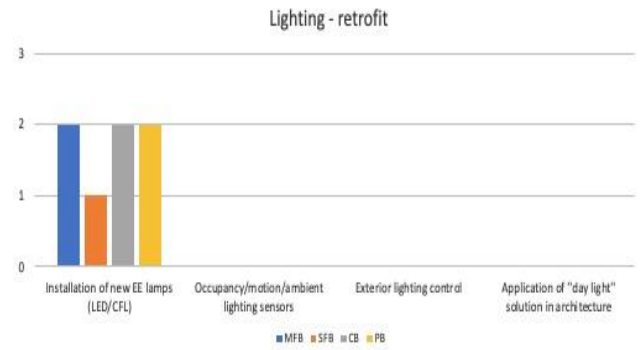
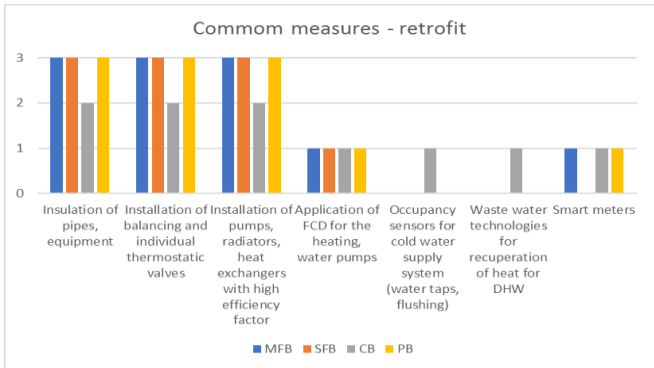
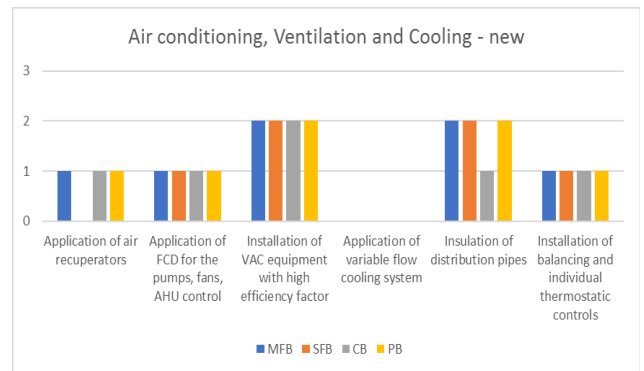
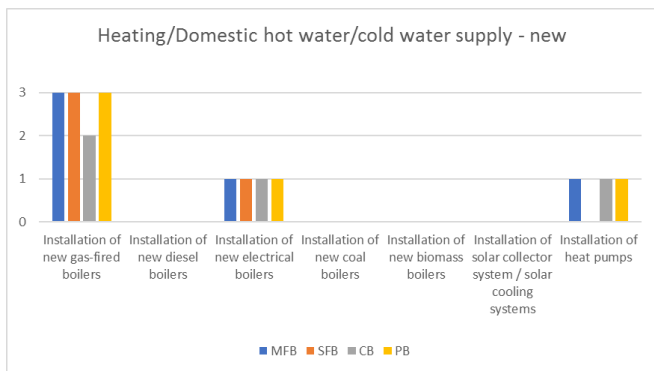
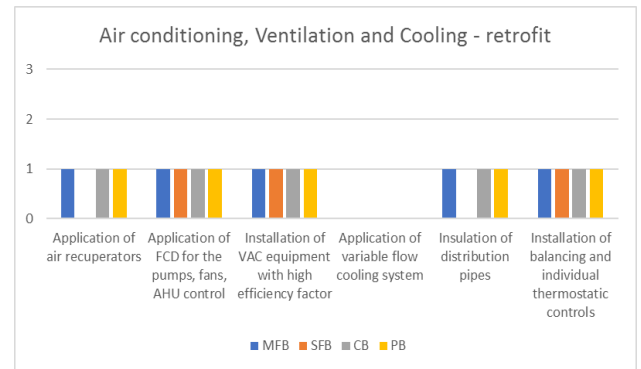
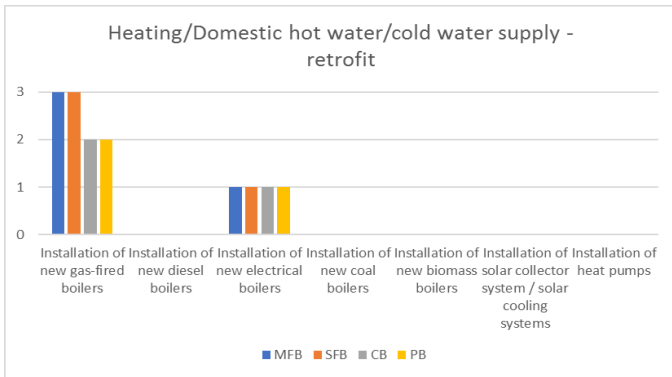


	Republic of Moldova							
	Retrofit				New construction			
	MFB	SFB	CB	PB	MFB	SFB	CB	PB
3.1 Building envelope and glazing								
Insulation of external walls	3	3	3	3	3	3	3	3
Insulation of attic/ground floor slab	3	3	3	3	3	3	3	3
Insulation of roof	3	3	3	3	3	3	3	3
Installation of new modern EE windows	3	3	3	3	3	3	3	3
Arrangement of new entrance/entrance doors	3	3	3	3	3	3	3	3
3.2 Heating/Domestic hot water/cold water supply								
3.2.a Improvement of decentralized heating source								
Installation of new gas-fired boilers	2	2	2	2	2	2	2	2
Installation of new diesel/oil boilers	0	0	0	0	0	0	0	0
Installation of new electrical boilers	2	2	2	2	2	2	2	2
Installation of new coal boilers	0	0	0	0	0	0	0	0
Installation of new biomass boilers	2	2	2	2	2	2	2	2
Installation of solar collector system / solar cooling systems	1	1	1	1	1	1	1	1
Installation of heat pumps	1	1	1	1	1	1	1	1
3.2.b Improvement of centralized heating source								
Improvement of Centralized Heating Source	1	0	1	1	1	0	1	1
3.2.c Common measures								
Insulation of pipes, equipment	3	3	3	3	3	3	3	3
Installation of balancing and individual thermostatic valves	3	3	3	3	3	3	3	3
Installation of pumps, radiators, heat exchangers with high efficiency factor	3	3	3	3	3	3	3	3
Application of FCD for the heating, water pumps	3	3	3	3	3	3	3	3
Occupancy sensors for cold water supply system (water taps, autoflush)	0	0	1	0	0	0	1	0
Waste water technologies for recuperation of heat for DHW	1	0	1	1	1	0	1	1
Smart meters	1	0	1	1	2	0	1	1
3.3 Air conditioning, Ventilation and Cooling								
Application of air recuperators	1	0	1	1	1	0	1	1
Application of FCD for the pumps, fans, AHU control	2	2	2	2	2	2	2	2
Installation of VAC equipment with high efficiency factor	2	2	2	2	2	2	2	2
Application of variable flow cooling system	1	1	1	1	1	1	1	1
Insulation of distribution pipes	3	3	3	3	3	3	3	3
Installation of balancing and individual thermostatic controls	3	3	3	3	3	3	3	3
3.4 Appliance								
EE appliance	3	3	3	3	3	3	3	3
3.5 Lighting								
Installation of new EE lamps (LED/ CFL)	2	2	2	2	2	2	2	2
Occupancy/motion/ambient lighting sensors	1	0	1	1	1	0	1	1
Exterior lighting control	1	0	1	1	1	0	1	1
Application of "day light" solution in architecture	1	0	1	1	1	0	1	1







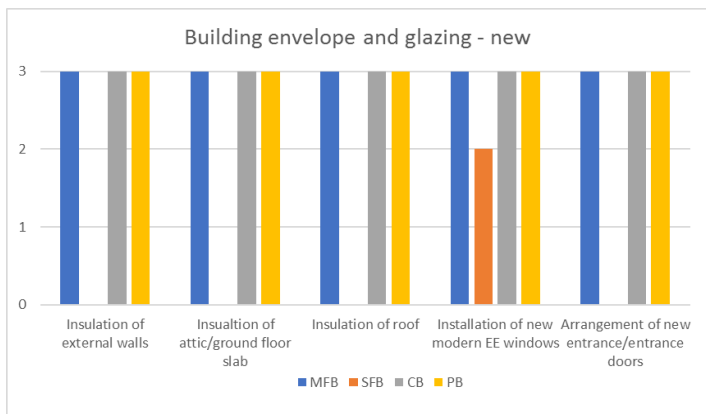
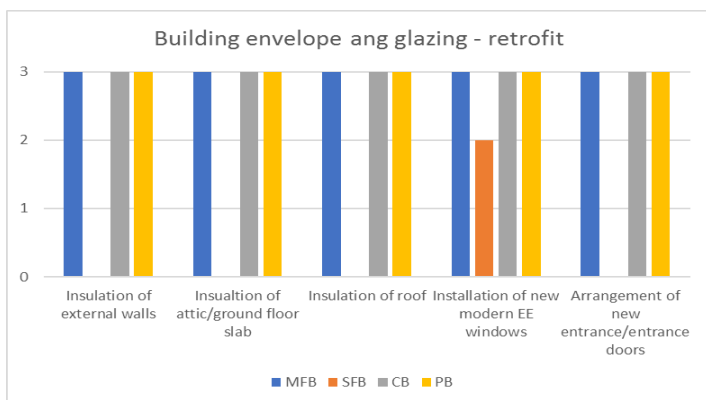




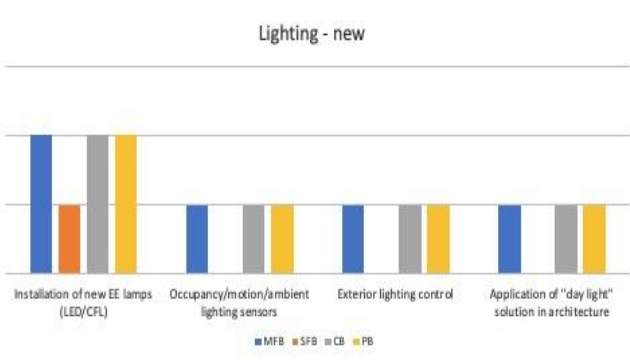
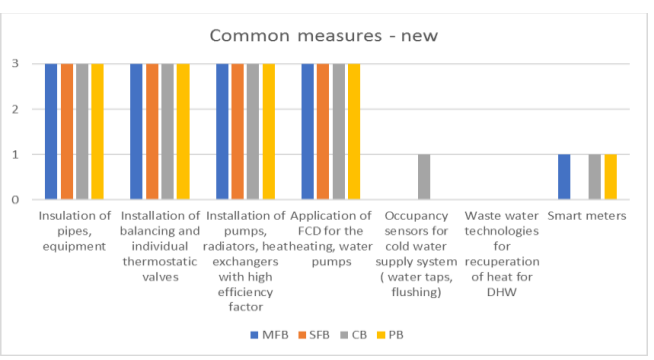
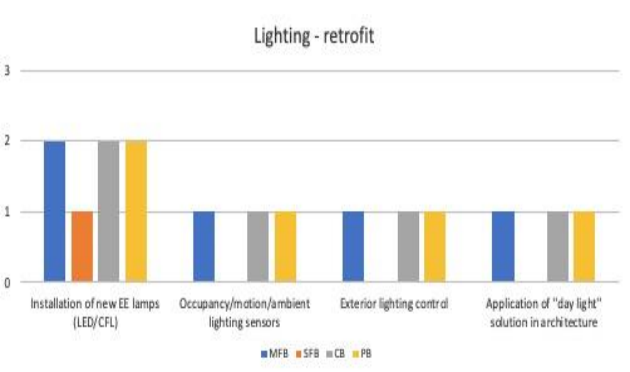
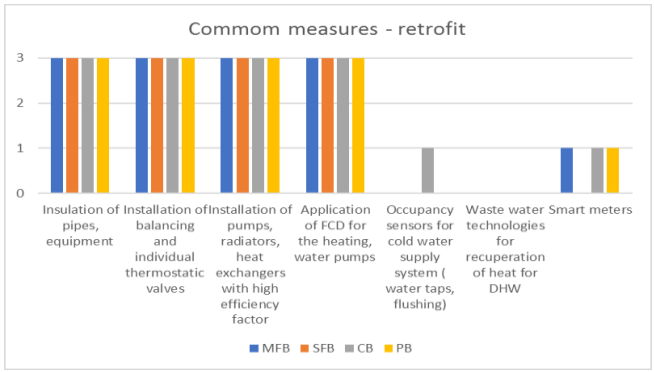
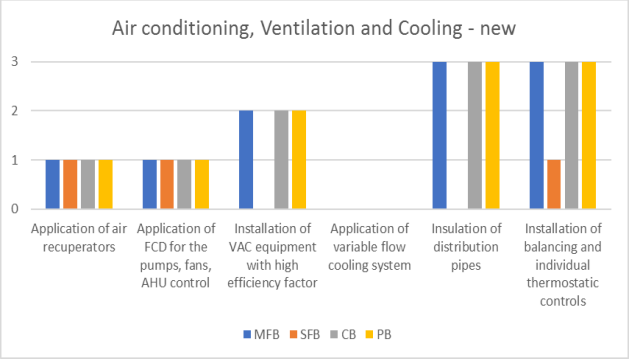
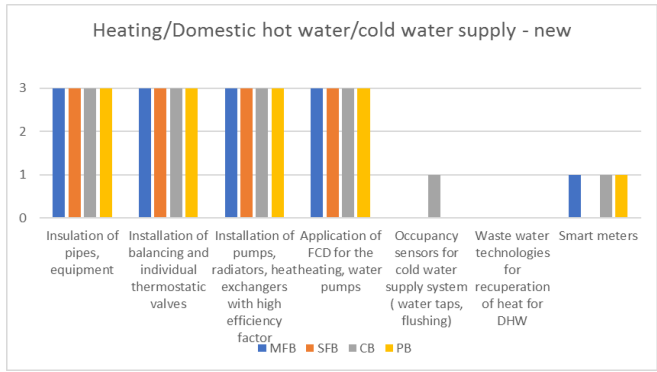
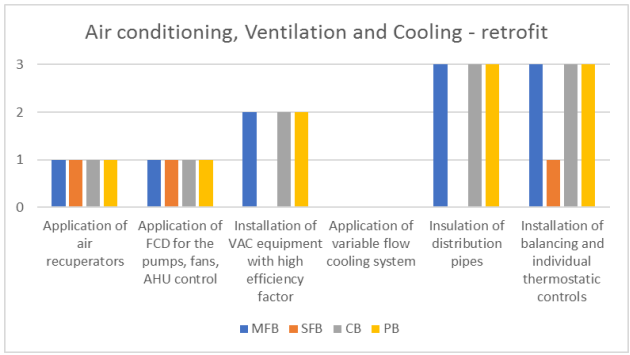
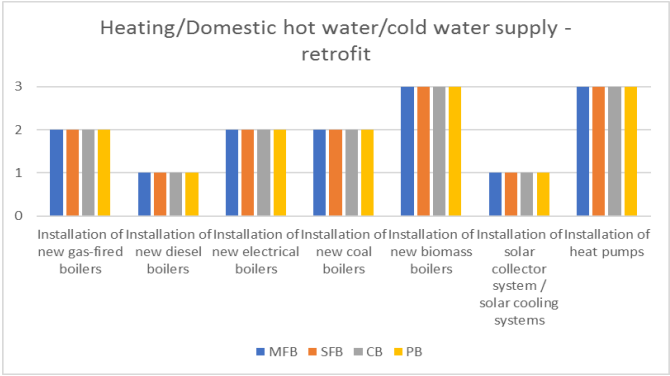
UKRAINE

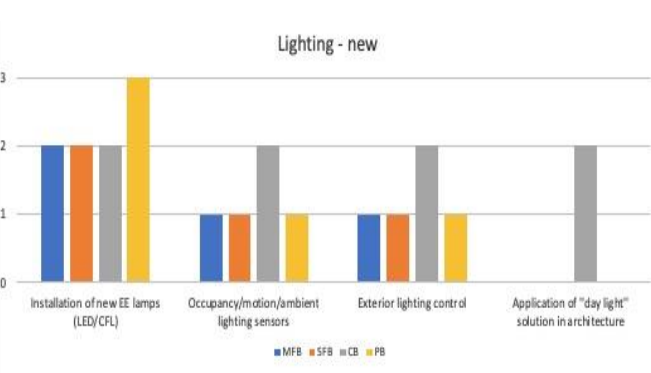
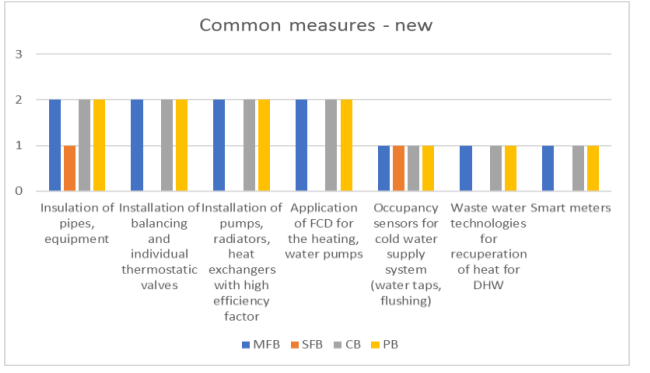
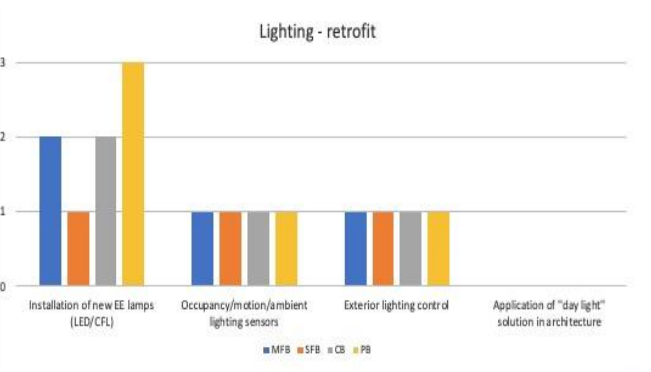
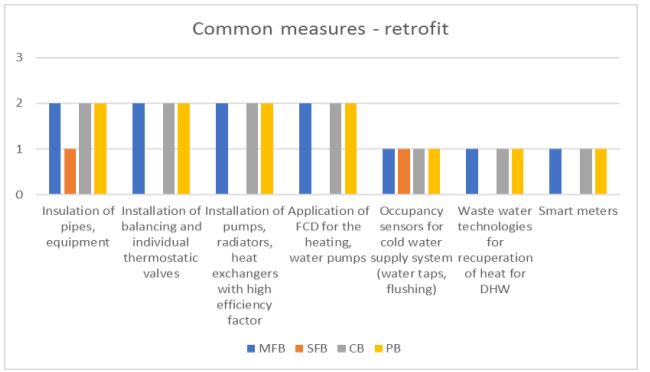
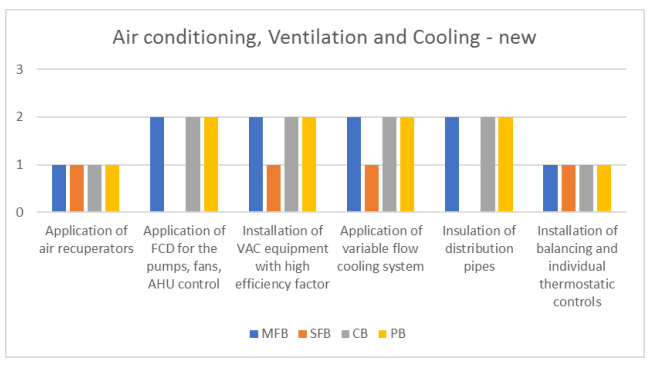
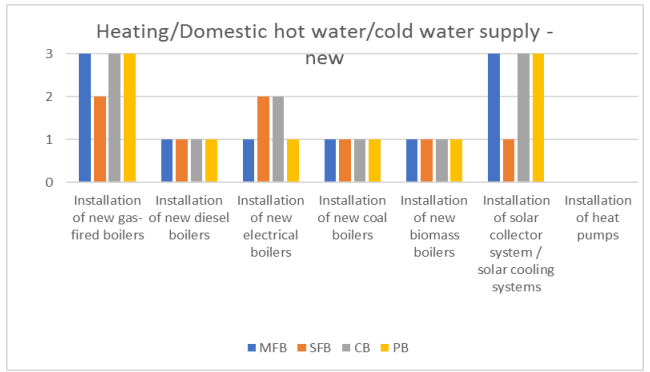
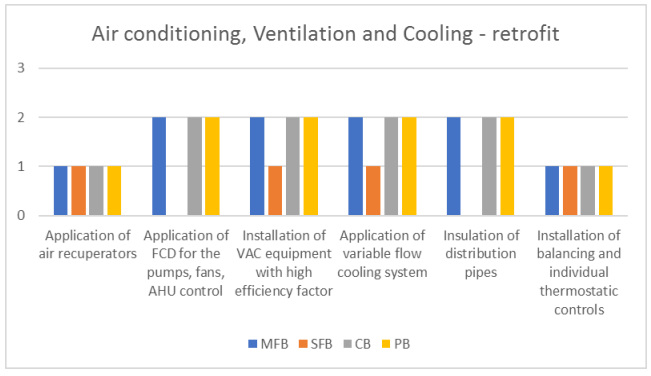
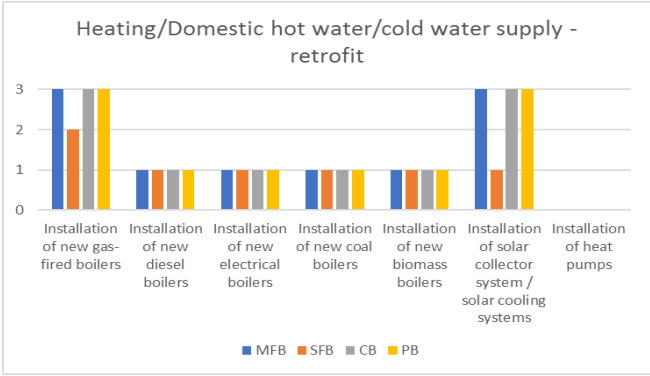
OVERVIEW

The modern building energy codes extends mostly to the multi-apartment residential buildings, while around 30% of all households is shared of the private sector. Adopted the mandatory labelling of energy efficient household appliances, began the transition to the LED technologies. However, application of the LED lamps is still not adopted on the national level.



	Ukraine							
	Retrofit				New construction			
	MFB	SFB	CB	PB	MFB	SFB	CB	PB
3.1 Building envelope and glazing								
Insulation of external walls	3	0	3	3	3	0	3	3
Insulation of attic/ground floor slab	3	0	3	3	3	0	3	3
Insulation of roof	3	0	3	3	3	0	3	3
Installation of new modern EE windows	3	2	3	3	3	2	3	3
Arrangement of new entrance/entrance doors	3	0	3	3	3	0	3	3
3.2 Heating/Domestic hot water/cold water supply								
3.2.a Improvement of decentralized heating source								
Installation of new gas-fired boilers	2	2	2	2	2	2	2	2
Installation of new diesel/oil boilers	1	1	1	1	1	1	1	1
Installation of new electrical boilers	2	2	2	2	2	2	2	2
Installation of new coal boilers	2	2	2	2	2	2	2	2
Installation of new biomass boilers	3	3	3	3	3	3	3	3
Installation of solar collector system / solar cooling systems	1	1	1	1	1	1	1	1
Installation of heat pumps	3	3	3	3	3	3	3	3
3.2.b Improvement of centralized heating source								
Improvement of Centralized Heating Source	3	0	3	3	3	0	3	3
3.2.c Common measures								
Insulation of pipes, equipment	3	3	3	3	3	3	3	3
Installation of balancing and individual thermostatic valves	3	3	3	3	3	3	3	3
Installation of pumps, radiators, heat exchangers with high efficiency factor	3	3	3	3	3	3	3	3
Application of FCD for the heating, water pumps	3	3	3	3	3	3	3	3
Occupancy sensors for cold water supply system (water taps, autoflush)	0	0	1	0	0	0	1	0
Waste water technologies for recuperation of heat for DHW	0	0	0	0	0	0	0	0
Smart meters	1	0	1	1	1	0	1	1
3.3 Air conditioning, Ventilation and Cooling								
Application of air recuperators	1	1	1	1	1	1	1	1
Application of FCD for the pumps, fans, AHU control	1	1	1	1	1	1	1	1
Installation of VAC equipment with high efficiency factor	2	0	2	2	2	0	2	2
Application of variable flow cooling system	0	0	0	0	0	0	0	0
Insulation of distribution pipes	3	0	3	3	3	0	3	3
Installation of balancing and individual thermostatic controls	3	1	3	3	3	1	3	3
3.4 Appliance								
EE appliance	3	3	3	3	3	3	3	3
3.5 Lighting								
Installation of new EE lamps (LED/CFI)	2	1	2	2	2	1	2	2
Occupancy/motion/ambient lighting sensors	1	0	1	1	1	0	1	1
Exterior lighting control	1	0	1	1	1	0	1	1
Application of "day light" solution in architecture	1	0	1	1	1	0	1	1





SUBREGION E

Albania

Bosnia and Herzegovina

FYR of Macedonia

Montenegro

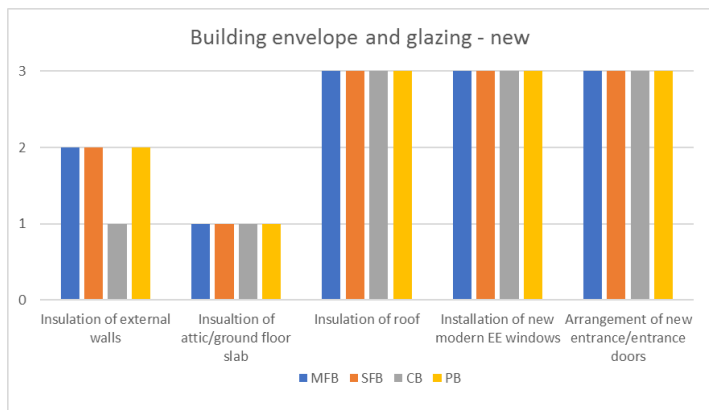
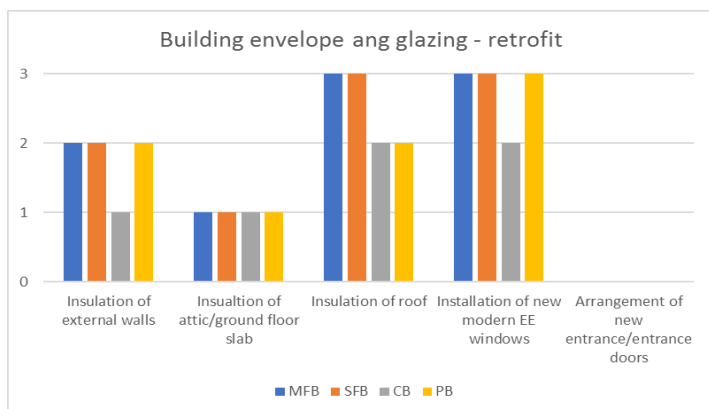
Serbia



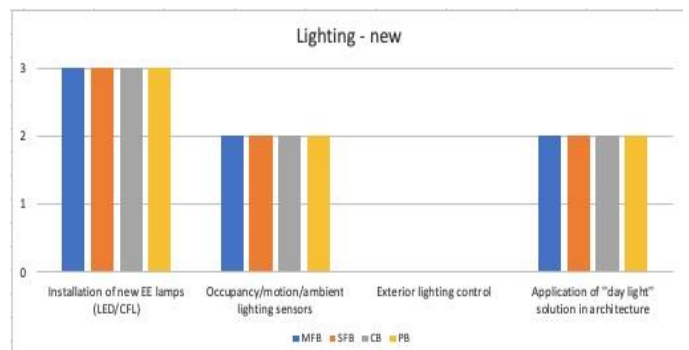
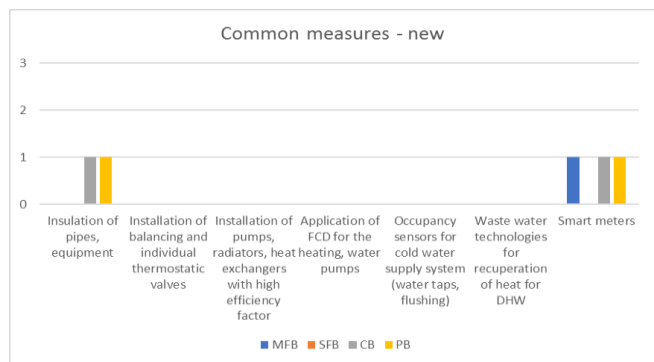
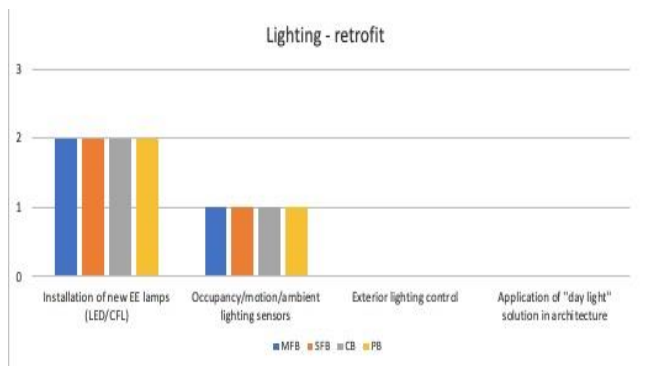
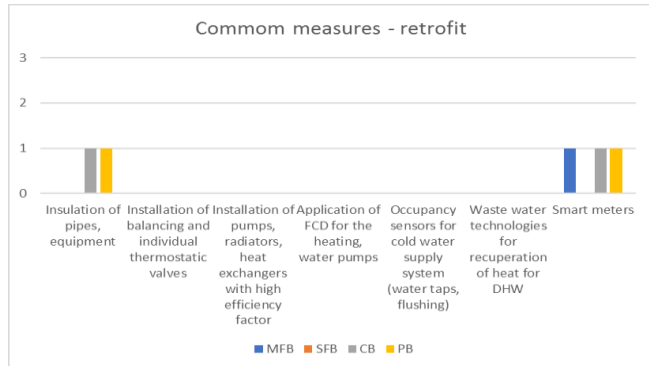
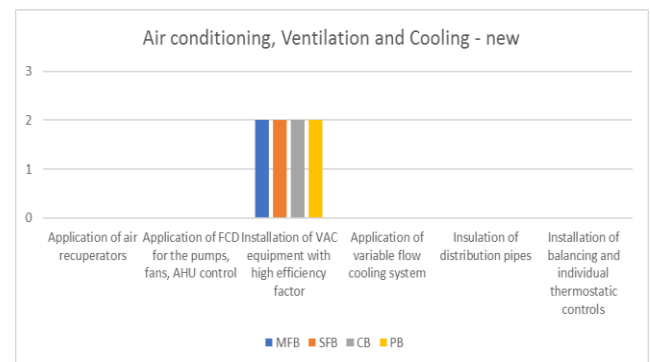
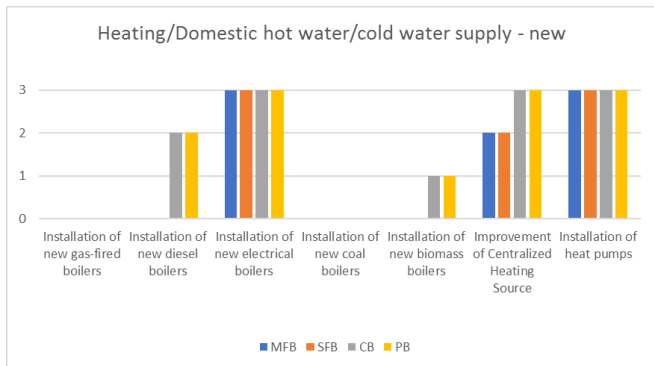
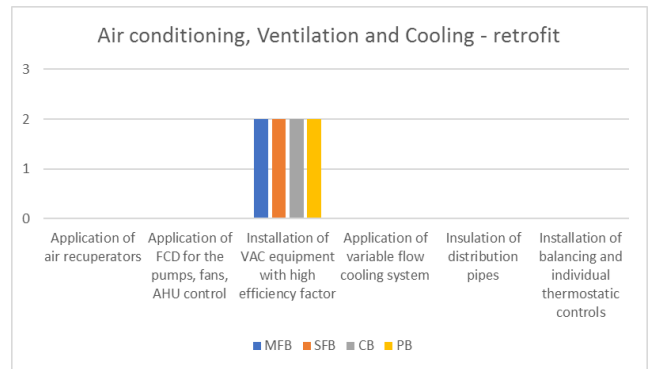
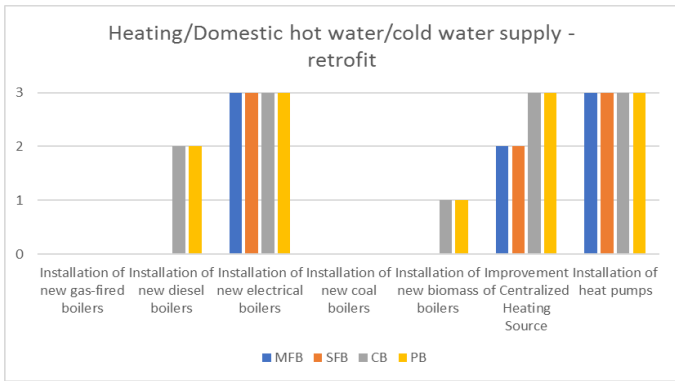
ALBANIA

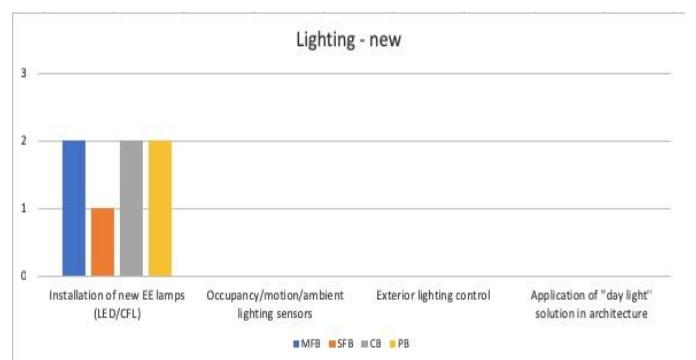
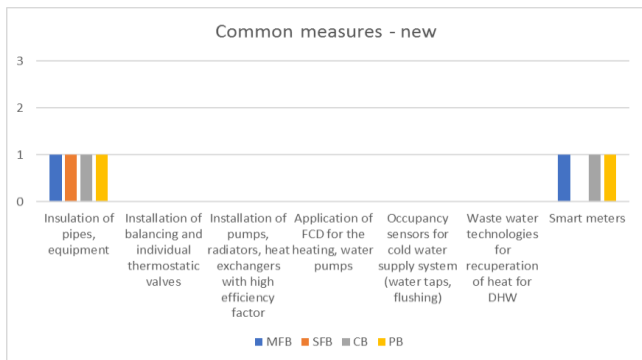
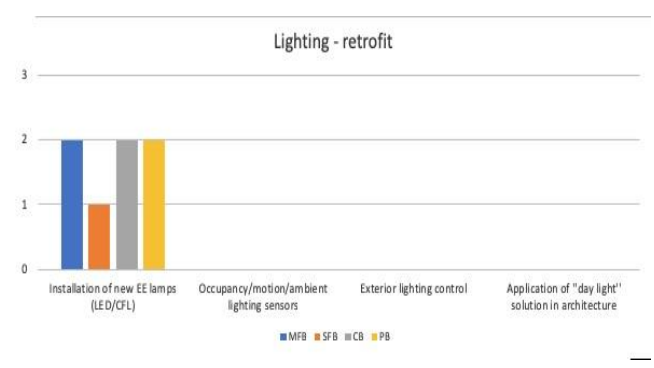
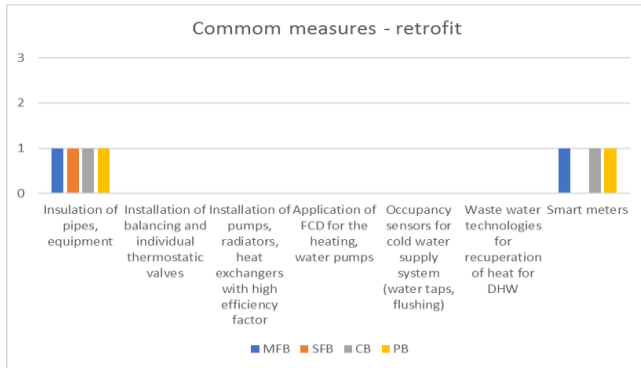
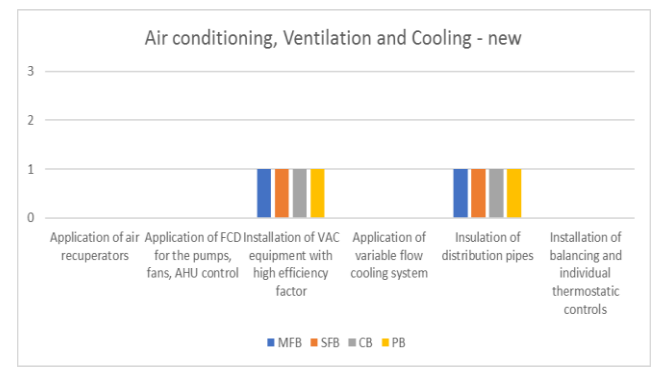
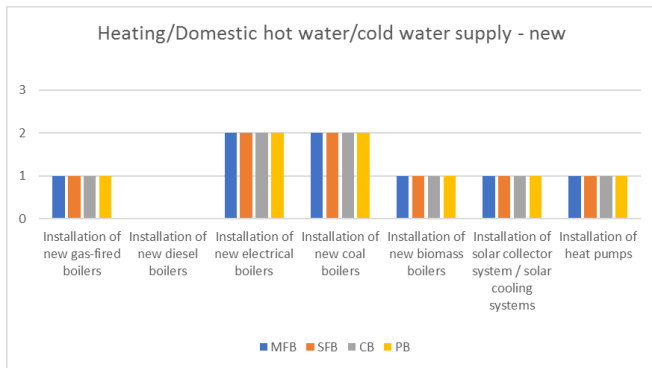
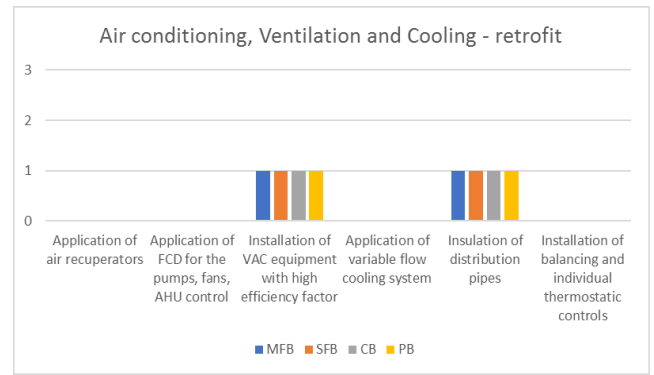
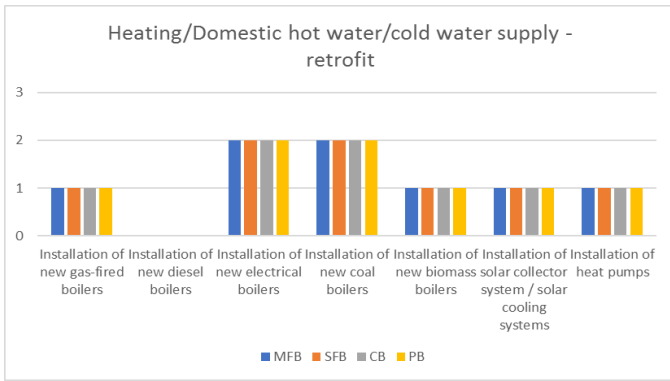
OVERVIEW

The current legislation in the field of energy efficiency defines the requirements to the roof insulation only, as well as to the installation of energy saving windows in residential and public buildings. Due to the prevalence of the decentralized heat power supply systems, the major part of the considered energy efficiency technologies is not applied. The electric boilers are frequently used for the hot water and heat power supply.



	Albania							
	Retrofit				New construction			
	MFB	SFB	CB	PB	MFB	SFB	CB	PB
3.1 Building envelope and glazing								
Insulation of external walls	2	2	1	2	2	2	1	2
Insulation of attic/ground floor slab	1	1	1	1	1	1	1	1
Insulation of roof	3	3	2	2	3	3	3	3
Installation of new modern EE windows	3	3	2	3	3	3	3	3
Arrangement of new entrance/entrance doors	0	0	0	0	3	3	3	3
3.2 Heating/Domestic hot water/cold water supply								
3.2.a Improvement of decentralized heating source								
Installation of new gas-fired boilers	0	0	0	0	0	0	0	0
Installation of new diesel/oil boilers	0	0	2	2	0	0	2	2
Installation of new electrical boilers	3	3	3	3	3	3	3	3
Installation of new coal boilers	0	0	0	0	0	0	0	0
Installation of new biomass boilers	0	0	1	1	0	0	1	1
Installation of solar collector system / solar cooling systems	2	2	3	3	2	2	3	3
Installation of heat pumps	3	3	3	3	3	3	3	3
3.2.b Improvement of centralized heating source								
Improvement of Centralized Heating Source	0	0	0	0	0	0	0	0
3.2.c Common measures								
Insulation of pipes, equipment	0	0	1	1	0	0	1	1
Installation of balancing and individual thermostatic valves	0	0	0	0	0	0	0	0
Installation of pumps, radiators, heat exchangers with high efficiency factor	0	0	0	0	0	0	0	0
Application of FCD for the heating, water pumps	0	0	0	0	0	0	0	0
Occupancy sensors for cold water supply system (water taps, autoflush)	0	0	0	0	0	0	0	0
Waste water technologies for recuperation of heat for DHW	0	0	0	0	0	0	0	0
Smart meters	1	0	1	1	1	0	1	1
3.3 Air conditioning, Ventilation and Cooling								
Application of air recuperators	0	0	0	0	0	0	0	0
Application of FCD for the pumps, fans, AHU control	0	0	0	0	0	0	0	0
Installation of VAC equipment with high efficiency factor	2	2	2	2	2	2	2	2
Application of variable flow cooling system	0	0	0	0	0	0	0	0
Insulation of distribution pipes	0	0	0	0	0	0	0	0
Installation of balancing and individual thermostatic controls	0	0	0	0	0	0	0	0
3.4 Appliance								
EE appliance	3	3	3	3	3	3	3	3
3.5 Lighting								
Installation of new EE lamps (LED/CFL)	2	2	2	2	3	3	3	3
Occupancy/motion/ambient lighting sensors	1	1	1	1	2	2	2	2
Exterior lighting control	0	0	0	0	0	0	0	0
Application of "day light" solution in architecture	0	0	0	0	2	2	2	2



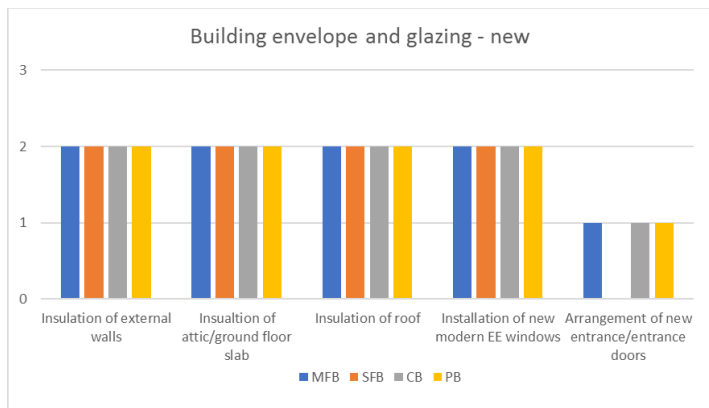
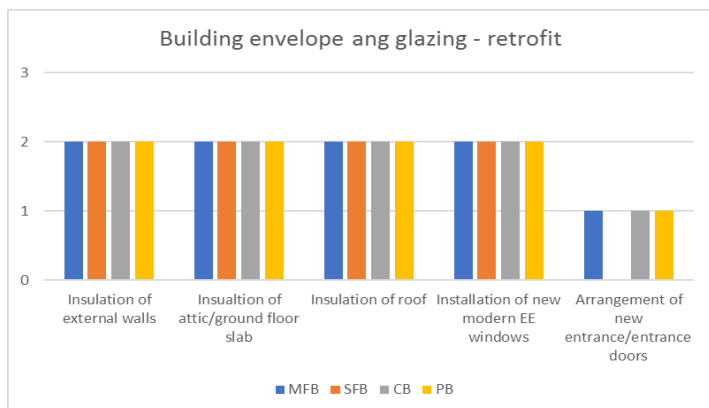




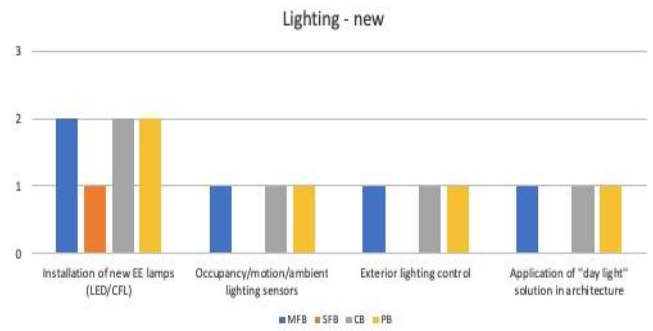
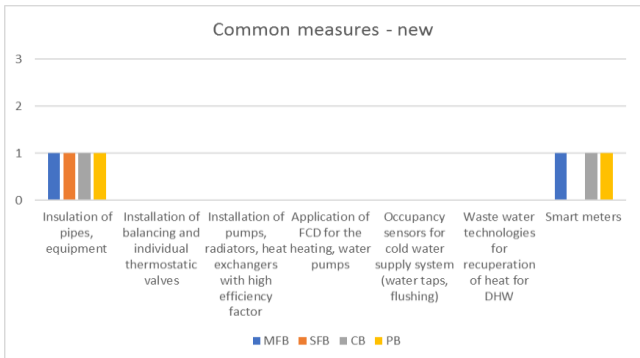
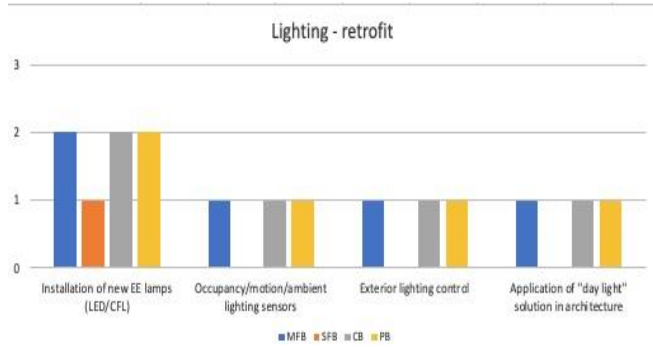
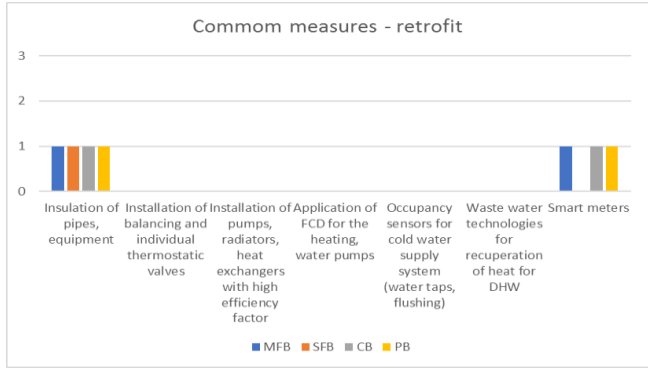
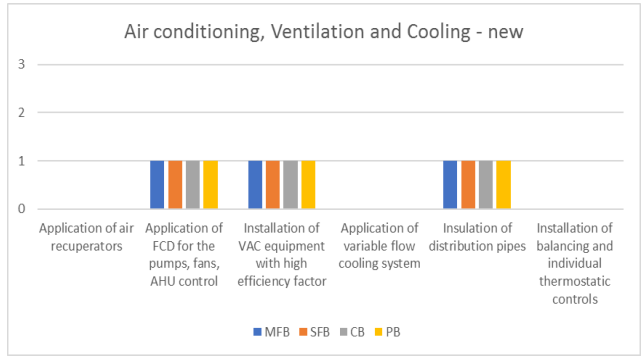
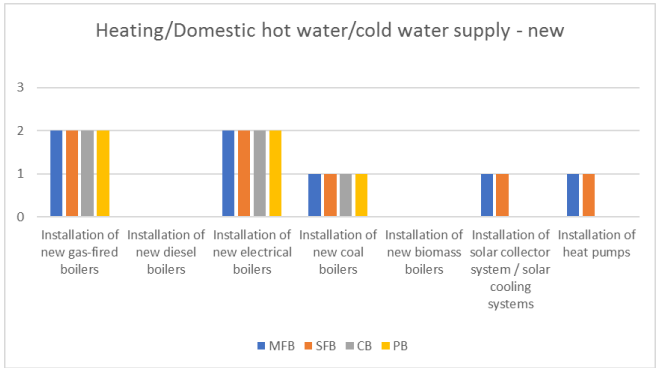
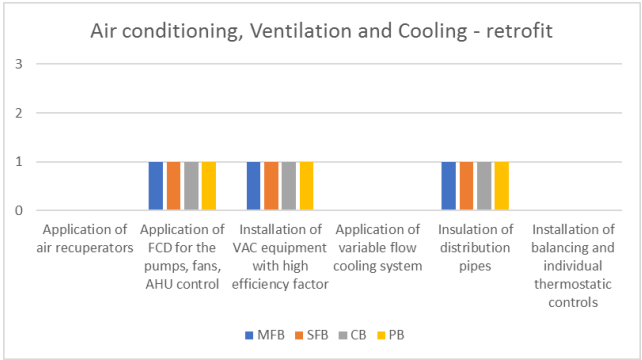
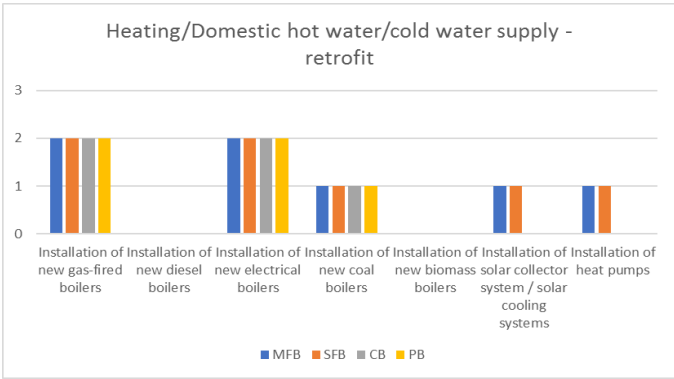
FYR OF MACEDONIA

OVERVIEW

Despite the fact that the requirements to the buildings energy efficiency are still not adopted on the national level, the modern energy saving technologies of building envelope insulation are frequently applied both in new construction and retrofits of existing buildings. In Macedonia, as well as in the whole Balcan region, there is almost no centralized heat supply. Therefore, energy saving measures in the field of modernization of the heat distribution pipes and proper equipment are not applied. For the decentralized systems need are mostly used various gas-fired and electric boiler units, as well as oven heating.



	The former Yugoslav Republic of Macedonia							
	Retrofit				New construction			
	MFB	SFB	CB	PB	MFB	SFB	CB	PB
3.1 Building envelope and glazing								
Insulation of external walls	2	2	2	2	2	2	2	2
Insulation of attic/ground floor slab	2	2	2	2	2	2	2	2
Insulation of roof	2	2	2	2	2	2	2	2
Installation of new modern EE windows	2	2	2	2	2	2	2	2
Arrangement of new entrance/entrance doors	1	0	1	1	1	0	1	1
3.2 Heating/Domestic hot water/cold water supply								
3.2.a Improvement of decentralized heating source								
Installation of new gas-fired boilers	2	2	2	2	2	2	2	2
Installation of new diesel/oil boilers	0	0	0	0	0	0	0	0
Installation of new electrical boilers	2	2	2	2	2	2	2	2
Installation of new coal boilers	1	1	1	1	1	1	1	1
Installation of new biomass boilers	0	0	0	0	0	0	0	0
Installation of solar collector system / solar cooling systems	1	1	0	0	1	1	0	0
Installation of heat pumps	1	1	0	0	1	1	0	0
3.2.b Improvement of centralized heating source								
Improvement of Centralized Heating Source	0	0	0	0	0	0	0	0
3.2.c Common measures								
Insulation of pipes, equipment	1	1	1	1	1	1	1	1
Installation of balancing and individual thermostatic valves	0	0	0	0	0	0	0	0
Installation of pumps, radiators, heat exchangers with high efficiency factor	0	0	0	0	0	0	0	0
Application of FCD for the heating, water pumps	0	0	0	0	0	0	0	0
Occupancy sensors for cold water supply system (water taps, autoflush)	0	0	0	0	0	0	0	0
Waste water technologies for recuperation of heat for DHW	0	0	0	0	0	0	0	0
Smart meters	1	0	1	1	1	0	1	1
3.3 Air conditioning, Ventilation and Cooling								
Application of air recuperators	0	0	0	0	0	0	0	0
Application of FCD for the pumps, fans, AHU control	1	1	1	1	1	1	1	1
Installation of VAC equipment with high efficiency factor	1	1	1	1	1	1	1	1
Application of variable flow cooling system	0	0	0	0	0	0	0	0
Insulation of distribution pipes	1	1	1	1	1	1	1	1
Installation of balancing and individual thermostatic controls	0	0	0	0	0	0	0	0
3.4 Appliance								
EE appliance	3	3	3	3	3	3	3	3
3.5 Lighting								
Installation of new EE lamps (LED/CFL)	2	1	2	2	2	1	2	2
Occupancy/motion/ambient lighting sensors	1	0	1	1	1	0	1	1
Exterior lighting control	1	0	1	1	1	0	1	1
Application of "day light" solution in architecture	1	0	1	1	1	0	1	1

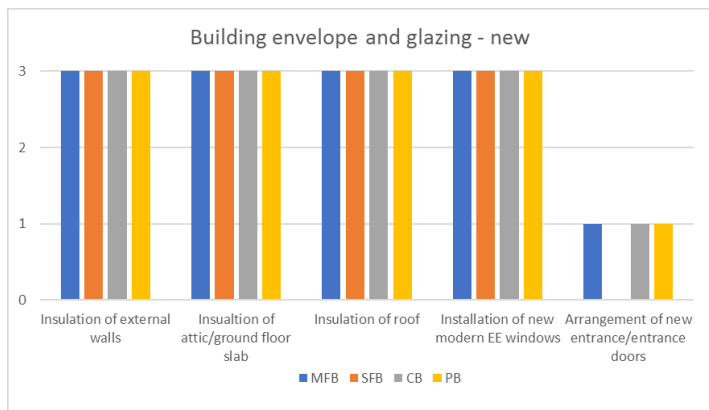
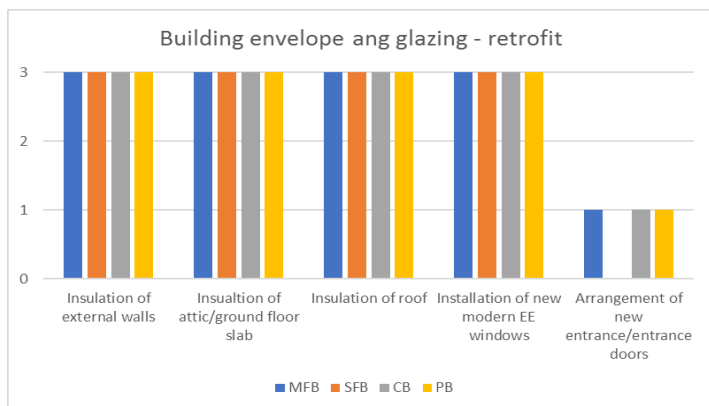




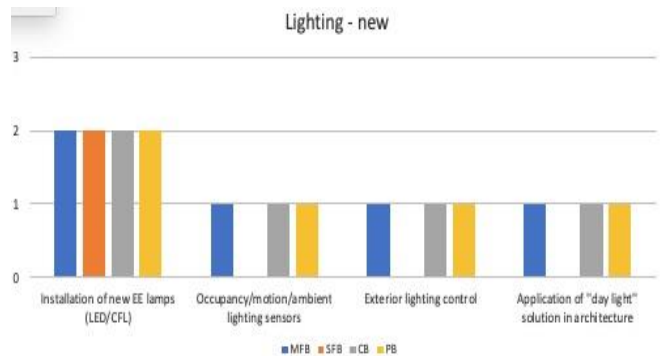
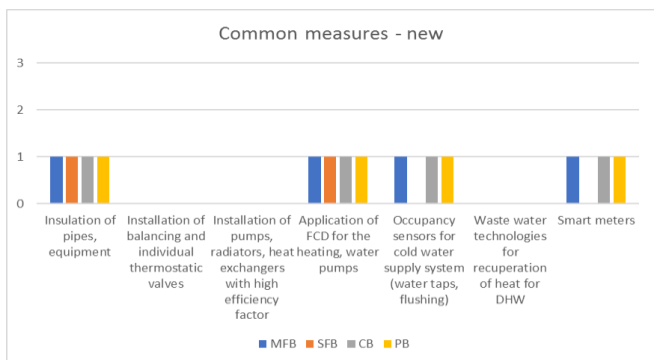
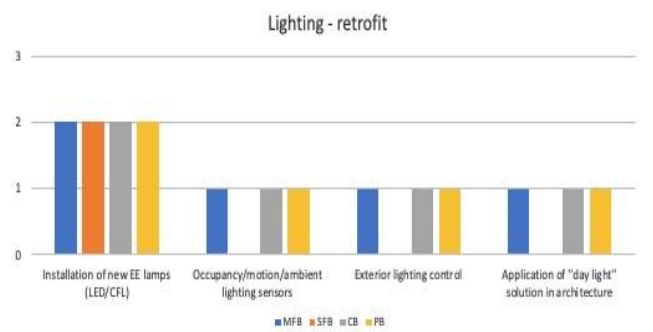
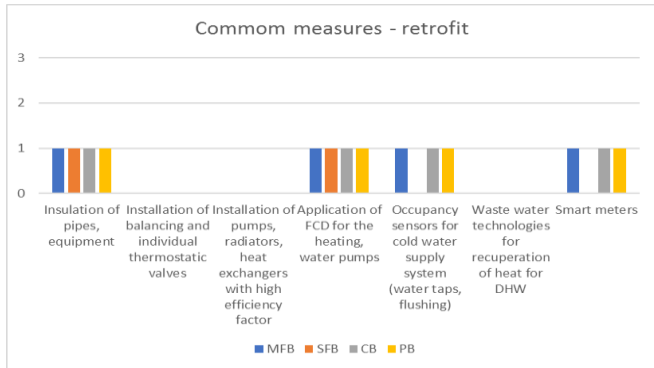
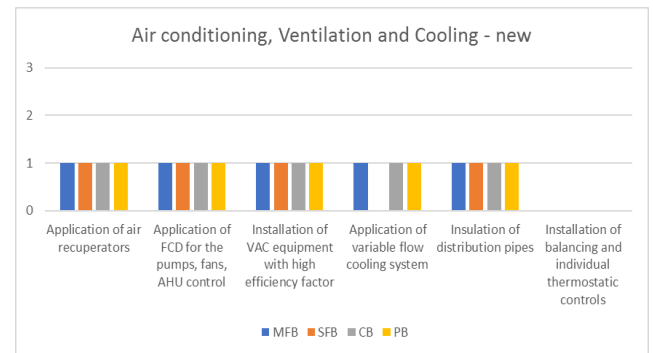
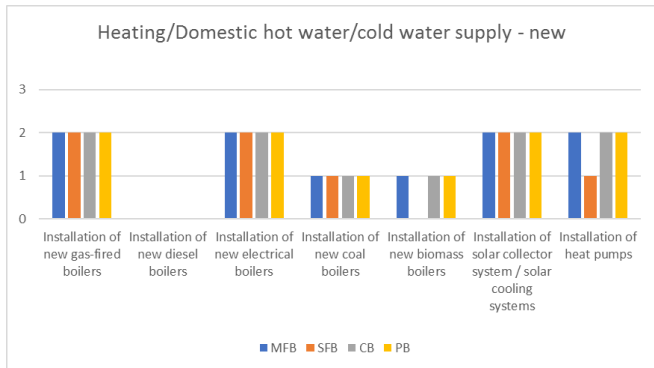
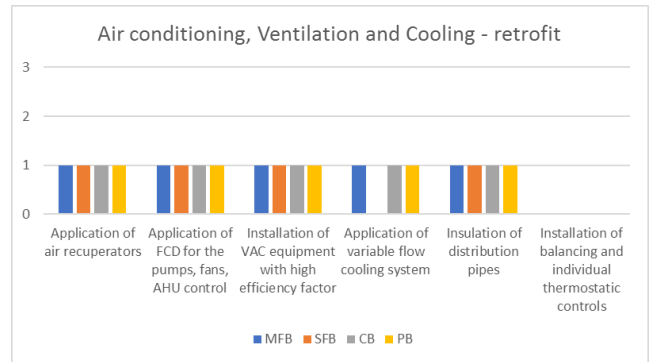
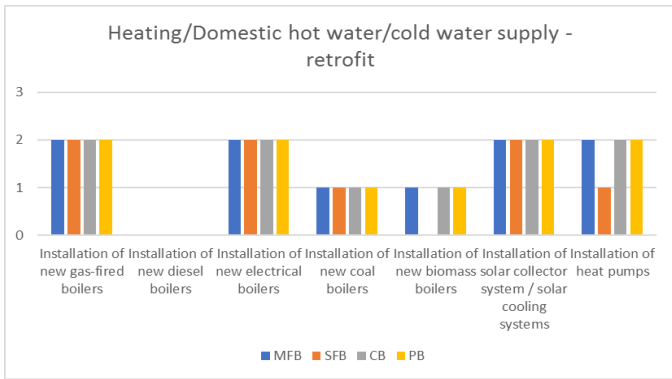
MONTENEGRO

OVERVIEW

Since 2015 the minimal requirements to the energy efficiency of public and residential buildings entered into force. These legislative documents define the special requirements to the insulation of buildings envelope, as well as installation of the modern energy saving windows etc. However, due to the prevalence of the decentralized heat power supply systems in this country, different measures of the proper systems modernization are frequently applied.



	Montenegro							
	Retrofit				New construction			
	MFB	SFB	CB	PB	MFB	SFB	CB	PB
3.1 Building envelope and glazing								
Insulation of external walls	3	3	3	3	3	3	3	3
Insulation of attic/ground floor slab	3	3	3	3	3	3	3	3
Insulation of roof	3	3	3	3	3	3	3	3
Installation of new modern EE windows	3	3	3	3	3	3	3	3
Arrangement of new entrance/entrance doors	1	0	1	1	1	0	1	1
3.2 Heating/Domestic hot water/cold water supply								
3.2.a Improvement of decentralized heating source								
Installation of new gas-fired boilers	2	2	2	2	2	2	2	2
Installation of new diesel/oil boilers	0	0	0	0	0	0	0	0
Installation of new electrical boilers	2	2	2	2	2	2	2	2
Installation of new coal boilers	1	1	1	1	1	1	1	1
Installation of new biomass boilers	1	0	1	1	1	0	1	1
Installation of solar collector system / solar cooling systems	2	2	2	2	2	2	2	2
Installation of heat pumps	2	1	2	2	2	1	2	2
3.2.b Improvement of centralized heating source								
Improvement of Centralized Heating Source	0	0	0	0	0	0	0	0
3.2.c Common measures								
Insulation of pipes, equipment	1	1	1	1	1	1	1	1
Installation of balancing and individual thermostatic valves	0	0	0	0	0	0	0	0
Installation of pumps, radiators, heat exchangers with high efficiency factor	0	0	0	0	0	0	0	0
Application of FCD for the heating, water pumps	1	1	1	1	1	1	1	1
Occupancy sensors for cold water supply system (water taps, autoflush)	1	0	1	1	1	0	1	1
Waste water technologies for recuperation of heat for DHW	0	0	0	0	0	0	0	0
Smart meters	1	0	1	1	1	0	1	1
3.3 Air conditioning, Ventilation and Cooling								
Application of air recuperators	1	1	1	1	1	1	1	1
Application of FCD for the pumps, fans, AHU control	1	1	1	1	1	1	1	1
Installation of VAC equipment with high efficiency factor	1	1	1	1	1	1	1	1
Application of variable flow cooling system	1	0	1	1	1	0	1	1
Insulation of distribution pipes	1	1	1	1	1	1	1	1
Installation of balancing and individual thermostatic controls	0	0	0	0	0	0	0	0
3.4 Appliance								
EE appliance	3	3	3	3	3	3	3	3
3.5 Lighting								
Installation of new EE lamps (LED/CFI)	2	2	2	2	2	2	2	2
Occupancy/motion/ambient lighting sensors	1	0	1	1	1	0	1	1
Exterior lighting control	1	0	1	1	1	0	1	1
Application of "day light" solution in architecture	1	0	1	1	1	0	1	1

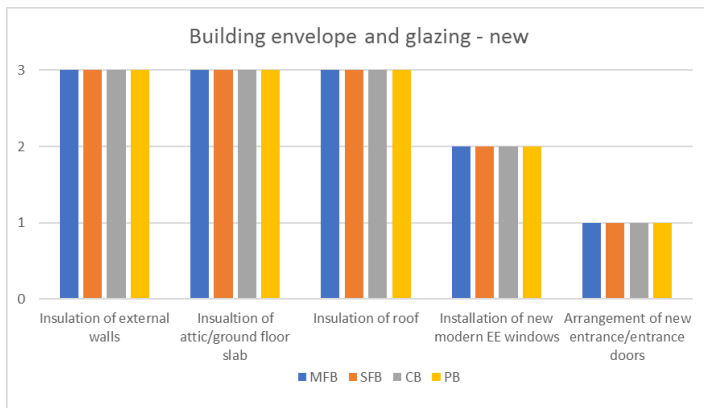
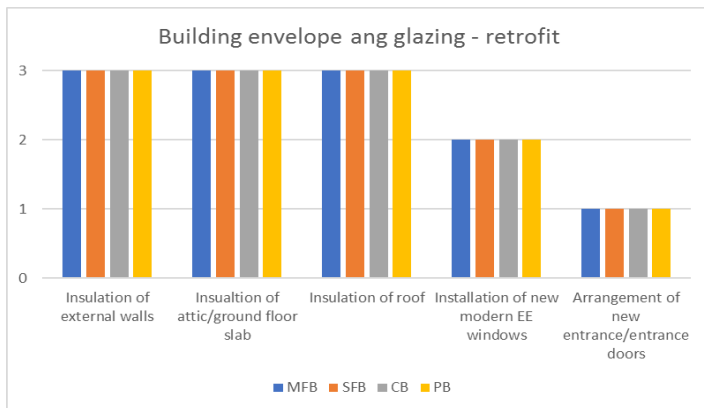




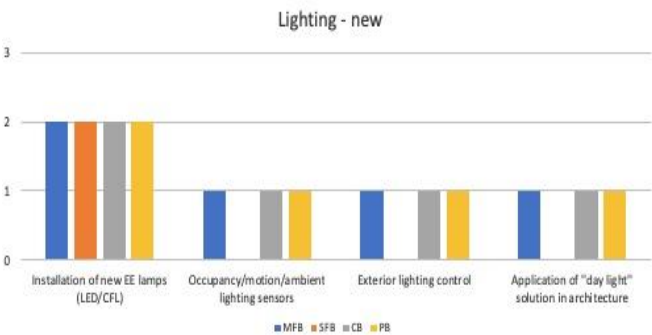
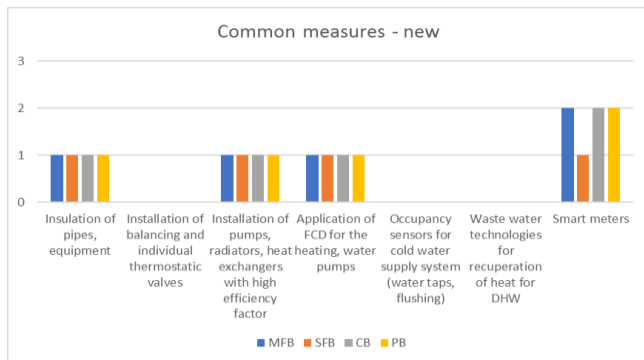
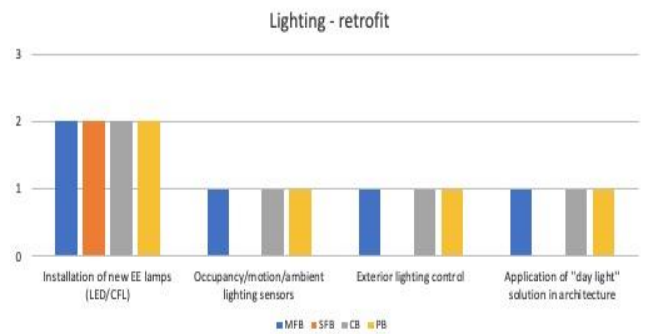
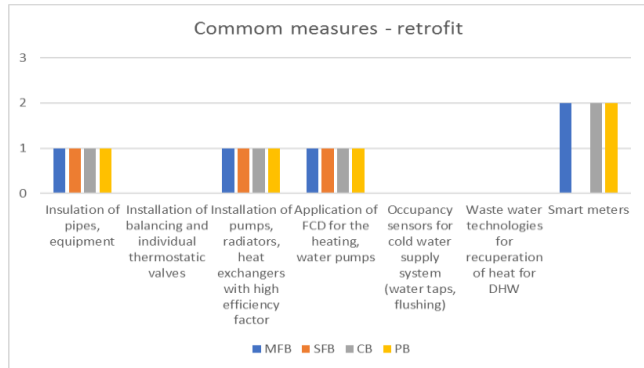
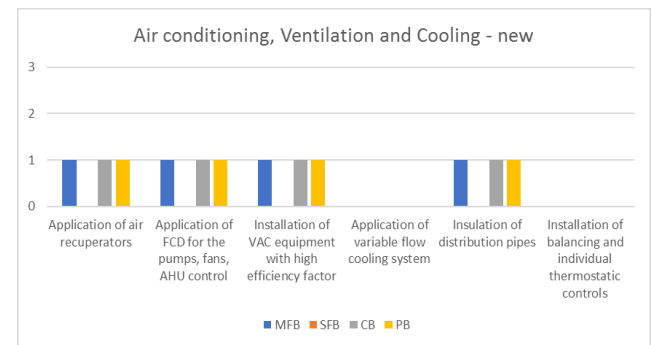
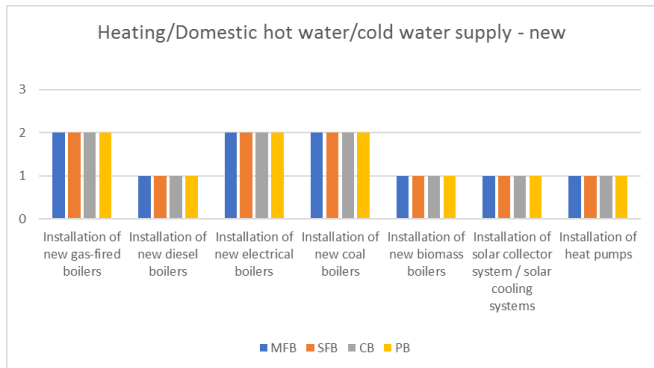
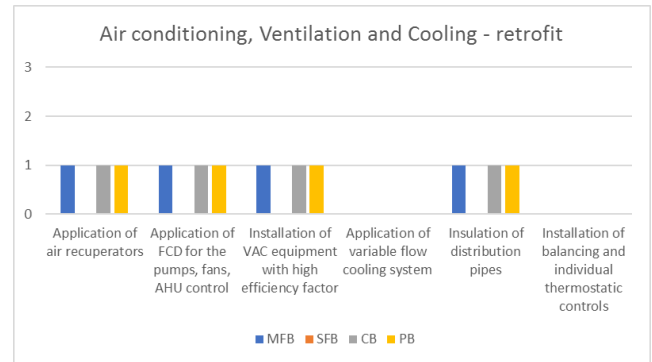
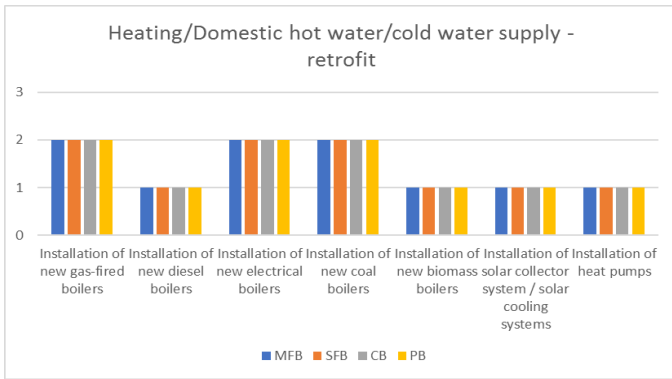
SERBIA

OVERVIEW

In Serbia action of buildings energy codes extend to all types of buildings from the private sector to municipal public ones. However, due to the lack of centralized heat power supply systems, such technologies like individual heat points with weather control are not applied. For need of decentralized heat power supply the different types of boiler equipment are frequently used.



	Serbia							
	Retrofit				New construction			
	MFB	SFB	CB	PB	MFB	SFB	CB	PB
3.1 Building envelope and glazing								
Insulation of external walls	3	3	3	3	3	3	3	3
Insulation of attic/ground floor slab	3	3	3	3	3	3	3	3
Insulation of roof	3	3	3	3	3	3	3	3
Installation of new modern EE windows	2	2	2	2	2	2	2	2
Arrangement of new entrance/entrance doors	1	1	1	1	1	1	1	1
3.2 Heating/Domestic hot water/cold water supply								
3.2.a Improvement of decentralized heating source								
Installation of new gas-fired boilers	2	2	2	2	2	2	2	2
Installation of new diesel/oil boilers	1	1	1	1	1	1	1	1
Installation of new electrical boilers	2	2	2	2	2	2	2	2
Installation of new coal boilers	2	2	2	2	2	2	2	2
Installation of new biomass boilers	1	1	1	1	1	1	1	1
Installation of solar collector system / solar cooling systems	1	1	1	1	1	1	1	1
Installation of heat pumps	1	1	1	1	1	1	1	1
3.2.b Improvement of centralized heating source								
Improvement of Centralized Heating Source	0	0	0	0	0	0	0	0
3.2.c Common measures								
Insulation of pipes, equipment	1	1	1	1	1	1	1	1
Installation of balancing and individual thermostatic valves	0	0	0	0	0	0	0	0
Installation of pumps, radiators, heat exchangers with high efficiency factor	1	1	1	1	1	1	1	1
Application of FCD for the heating, water pumps	1	1	1	1	1	1	1	1
Occupancy sensors for cold water supply system (water taps, autoflush)	0	0	0	0	0	0	0	0
Waste water technologies for recuperation of heat for DHW	0	0	0	0	0	0	0	0
Smart meters	2	0	2	2	2	1	2	2
3.3 Air conditioning, Ventilation and Cooling								
Application of air recuperators	1	0	1	1	1	0	1	1
Application of FCD for the pumps, fans, AHU control	1	0	1	1	1	0	1	1
Installation of VAC equipment with high efficiency factor	1	0	1	1	1	0	1	1
Application of variable flow cooling system	0	0	0	0	0	0	0	0
Insulation of distribution pipes	1	0	1	1	1	0	1	1
Installation of balancing and individual thermostatic controls	0	0	0	0	0	0	0	0
3.4 Appliance								
EE appliance	3	3	3	3	3	3	3	3
3.5 Lighting								
Installation of new EE lamps (LED/CFI)	2	2	2	2	2	2	2	2
Occupancy/motion/ambient lighting sensors	1	0	1	1	1	0	1	1
Exterior lighting control	1	0	1	1	1	0	1	1
Application of "day light" solution in architecture	1	0	1	1	1	0	1	1



SUBREGION F

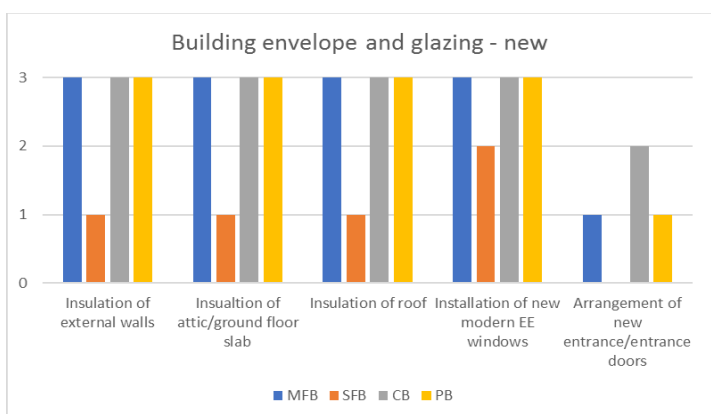
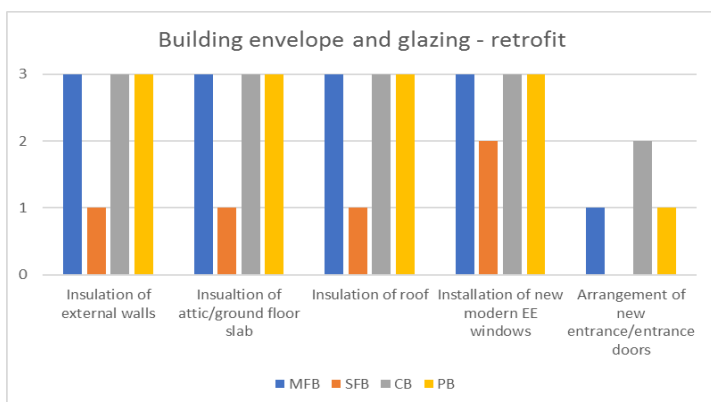
Turkey



TURKEY

OVERVIEW

In Turkey on the governmental level operate were adopted the building energy codes, which oblige the developers to implement different energy saving technologies within the new construction and retrofit both of multi-apartment residential and municipal buildings. The range of TSN standards are harmonized with some of the EU buildings energy codes. A special attention is paid to the implementation and promotion of energy efficiency labelling of the household appliances.



	Turkey							
	Retrofit				New construction			
	MFB	SFB	CB	PB	MFB	SFB	CB	PB
3.1 Building envelope and glazing								
Insulation of external walls	3	1	3	3	3	1	3	3
Insulation of attic/ground floor slab	3	1	3	3	3	1	3	3
Insulation of roof	3	1	3	3	3	1	3	3
Installation of new modern EE windows	3	2	3	3	3	2	3	3
Arrangement of new entrance/entrance doors	1	0	2	1	1	0	2	1
3.2 Heating/Domestic hot water/cold water supply								
3.2.a Improvement of decentralized heating source								
Installation of new gas-fired boilers	2	2	2	2	2	2	2	2
Installation of new diesel/oil boilers	1	1	1	1	1	1	1	1
Installation of new electrical boilers	2	2	2	2	2	2	2	2
Installation of new coal boilers	1	1	1	1	1	1	1	1
Installation of new biomass boilers	1	1	1	1	1	1	1	1
Installation of solar collector system / solar cooling systems	2	2	2	2	2	2	2	2
Installation of heat pumps	0	0	0	0	0	0	0	0
3.2.b Improvement of centralized heating source								
Improvement of Centralized Heating Source	3	0	3	3	3	0	3	3
3.2.c Common measures								
Insulation of pipes, equipment	1	0	1	1	1	0	1	1
Installation of balancing and individual thermostatic valves	3	1	3	3	3	1	3	3
Installation of pumps, radiators, heat exchangers with high efficiency factor	3	0	3	3	3	0	3	3
Application of FCD for the heating, water pumps	0	0	0	0	0	0	0	0
Occupancy sensors for cold water supply system (water taps, autoflush)	0	0	2	0	0	0	2	0
Waste water technologies for recuperation of heat for DHW	0	0	0	0	0	0	0	0
Smart meters	2	1	1	1	2	1	1	1
3.3 Air conditioning, Ventilation and Cooling								
Application of air recuperators	2	1	2	2	2	1	2	2
Application of FCD for the pumps, fans, AHU control	0	0	0	0	0	0	0	0
Installation of VAC equipment with high efficiency factor	2	1	2	2	2	1	2	2
Application of variable flow cooling system	3	1	3	3	3	1	3	3
Insulation of distribution pipes	3	1	3	3	3	1	3	3
Installation of balancing and individual thermostatic controls	3	2	3	3	3	2	3	3
3.4 Appliance								
EE appliance	3	3	3	3	3	3	3	3
3.5 Lighting								
Installation of new EE lamps (LED/CFL)	2	2	2	3	2	2	2	3
Occupancy/motion/ambient lighting sensors	1	1	1	1	1	1	1	1
Exterior lighting control	1	1	1	1	1	1	1	1
Application of "day light" solution in architecture	1	0	1	1	1	0	1	1

