



ENERGY PERFORMANCE PROTOCOL

ANNEX A: INDEX OF NATIONAL RESOURCES

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INTRODUCTION

The Investor Confidence Project (ICP) Europe, is an Energy Efficiency (EE) initiative addressing investment market barriers, which have been repeatedly identified as the main impediments to mass scaling of EE investments in Europe, by the International Energy Agency, the Buildings Performance Institute Europe, the Energy Efficiency Financial Institutions Group, as well as other relevant EE stakeholders in Europe.

The initiative builds on the successful experience of its United States counterpart, which has been pointed out as a best-practice approach by the Energy Efficiency Financial Institutions Group and the International Energy Agency.

The project is supported by the Horizon 2020 European Research and Innovation Programme and by the Stiftung Family Foundation and aims to establish itself as an EU-wide, open access system, to provide more stable, predictable, and reliable savings outcomes and to enable greater private investment through a more efficient transparent marketplace.

At the core of the system are ICP Europe protocols which provide comprehensive and robust guidance for project development at a European level, allowing market entities to dramatically streamline project underwriting processes related to project performance.

This document is Annex A: Index of national resources. This should be read in conjunction with the ICP Europe protocols, along with the Project Development Specifications document which compiles all relevant information for system application. This document summarises information gathered to date by country on national standards, guidance documents or sources of information which can be used to support in-country ICP projects. These resources may be used as **supplementary resources** to the European or international standards where identified in the protocols. Resource references in the protocol documents are shown in italics, followed by a specific reference number in square brackets (e.g. “[2a]”) which can be used to locate it in Annex A. Corresponding relevant national resources are shown in the last column of each country table.

This document is intended to be a living document, evolving over time as it is applied to retrofit projects. In some cases, a relevant national resource has not yet been identified – this is indicated by a blank cell in the tables. Members of the ICP invite engineers, building owners, software developers, prospective lenders and investors, and others to participate in developing this Annex for their countries to recommend additional or alternative national resources.

AUSTRIA

Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	AUSTRIA
Baselining					
2a	Guidance for calculating accurate gross floor area (e.g. measuring from inside of walls, including all common areas, but excluding parking area)	► Tertiary	<i>EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling (section 3.2.6)</i>	ÖNORM B 8110-6 Thermal insulation in building construction, Part 6: Principles and verification methods — Heating demand and cooling demand [ÖNORM B 8110-6 Wärmeschutz im Hochbau Teil 6: Grundlagen und Nachweisverfahren - Heizwärmebedarf und Kühlbedarf]	
		► Apartment blocks		ÖNORM B 8110-6 Thermal insulation in building construction, Part 6: Principles and verification methods — Heating demand and cooling demand [ÖNORM B 8110-6 Wärmeschutz im Hochbau Teil 6: Grundlagen und Nachweisverfahren - Heizwärmebedarf und Kühlbedarf]	
2b	Guidance for recording occupancy (e.g. the number of people in a building and the time of day they are there)	<i>n/a</i>	<i>EN 16247-2 Energy audits buildings (Section 5.3.2 Information request)</i>	ÖNORM EN 16247-2:2014 07 01 Energy audits, Part 2: Buildings, Section 5.3.2 [ÖNORM EN 16247-2:2014 07 01 Energieaudits - Teil 2: Gebäude, 5.3.2]	
2c	Guidance for collecting information on the building and its systems, perhaps as part of an energy audit e.g. details of air conditioning systems, lighting system, glazing	<i>n/a</i>	<i>EN 16247-2 Energy audits buildings Section 5.3 Collecting data, 5.3.2 Information request and Annex D</i>	ÖNORM EN 16247-2:2014 07 01 Energy audits Part 2: Buildings, Sections 5.3, 5.3.2 & Annex D [ÖNORM EN 16247-2:2014 07 01 Energieaudits - Teil 2: Gebäude, 5.3, 5.3.2, Anbau D]	
2d	Guidance for extrapolating or consolidating data to a complete calendar year	<i>n/a</i>	<i>ISO 16346:2013 - Energy performance of buildings -- Assessment of overall energy performance (Section 8.2.2 Extrapolation to an integral number of years)</i>	ÖNORM EN 15603:2008 07 01 Energy performance of buildings - Overall energy use and definition of energy ratings [ÖNORM EN 15603:2008 07 01 Energieeffizienz von Gebäuden - Gesamtenergieverbrauch und Festlegung der Energiekennwerte]	

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Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	AUSTRIA
2e	Guidance for normalising data against relevant variables in order to compare energy performance under equivalent conditions e.g. baseline regression modelling	n/a	ISO 50006:2014 - Energy management systems -- Measuring energy performance using energy baselines (EnB) and energy performance indicators (EnPI) -- General principles and guidance Annex D Normalising energy baselines using relevant variables		
2f	A source of energy consumption benchmarks for different types of buildings	► Tertiary	Buildings Performance Institute Europe’s Data Hub for the Energy Performance of Buildings (see http://www.buildingsdata.eu/) .	ÖNORM B 8110-5:2011 Thermal insulation in building construction — Part 5: Model of climate and user profiles, Table 2 [ÖNORM B 8110-5: 2011 03 01 Wärmeschutz im Hochbau - Teil 5: Klimamodell und Nutzungsprofile, Tabelle 2]	
		► Apartment blocks		ÖNORM B 8110-5:2011 Thermal insulation in building construction — Part 5: Model of climate and user profiles, Table 2 [ÖNORM B 8110-5: 2011 03 01 Wärmeschutz im Hochbau - Teil 5: Klimamodell und Nutzungsprofile, Tabelle 2]	
Savings calculations					
4a	Defining standards for energy modelling software (dynamic energy simulation)	► Tertiary	Application of public domain or commercially available software that meets EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling, is validated according to the criteria in EN 15265:2007 Energy performance of buildings – Calculation of energy needs for space heating and cooling using dynamic	ÖNORM EN ISO 13790: 2008 10 01 Energy performance of buildings – Calculation of energy use for space heating and cooling [ÖNORM EN ISO 13790: 2008 10 01 Energieeffizienz von Gebäuden - Berechnung des Energiebedarfs für Heizung und Kühlung] ÖNORM EN 15265: 2007 11 01 Energy performance of buildings – Calculation of energy needs for space heating and cooling using dynamic methods – General criteria and validation procedures [ÖNORM EN 15265: 2007 11 01 Wärmetechnisches Verhalten von Gebäuden - Berechnung des Heiz- und Kühlenergieverbrauchs - Allgemeine Kriterien und Validierungsverfahren]	

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Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	AUSTRIA
		► Apartment blocks	<i>methods – General criteria and validation procedures</i>	ÖNORM EN ISO 13790: 2008 10 01 Energy performance of buildings – Calculation of energy use for space heating and cooling [ÖNORM EN ISO 13790: 2008 10 01 Energieeffizienz von Gebäuden - Berechnung des Energiebedarfs für Heizung und Kühlung] ÖNORM EN 15265: 2007 11 01 Energy performance of buildings – Calculation of energy needs for space heating and cooling using dynamic methods – General criteria and validation procedures [ÖNORM EN 15265: 2007 11 01 Wärmetechnisches Verhalten von Gebäuden - Berechnung des Heiz- und Kühlenergieverbrauchs - Allgemeine Kriterien und Validierungsverfahren]	
4b	A national software certification scheme used to accredit individuals carrying out modelling (dynamic energy simulation)	► Tertiary	<i>Not available</i>		
		► Apartment blocks	<i>Not available</i>		
4d	Guidance for calculating savings when using a spreadsheet-based approach, rather than software	► Tertiary	<i>EN 16212:2012 Energy Efficiency and Savings Calculation, Top-down and Bottom-up Methods (section 6)</i>	ÖNORM EN 16212:2012 10 01 Energy efficiency and savings calculation - Top-down and Bottom-up methods [ÖNORM EN 16212: 2012 10 01 Energieeffizienz und -einsparberechnung - Top-Down- und Bottom-Up-Methoden]	
		► Apartment blocks		ÖNORM EN 16212:2012 10 01 Energy efficiency and savings calculation - Top-down and Bottom-up methods [ÖNORM EN 16212: 2012 10 01 Energieeffizienz und -einsparberechnung - Top-Down- und Bottom-Up-Methoden]	
	A national certification scheme for individuals carrying out spreadsheet-based savings calculations (rather than using software)	► Tertiary	<i>Not available</i>		
		► Apartment blocks	<i>Not available</i>		

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Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	AUSTRIA
	A guide to carrying out dynamic energy simulation for residential buildings	n/a	<i>ISO 13790:2008 Energy performance of buildings -- Calculation of energy use for space heating and cooling</i>	ÖNORM EN ISO 13790:2008 10 01, Energy performance of buildings - Calculation of energy use for space heating and cooling [ÖNORM EN ISO 13790:2008 10 01 Energieeffizienz von Gebäuden - Berechnung des Energiebedarfs für Heizung und Kühlung] ÖNORM B 8110-6 Thermal insulation in building construction, Part 6: Principles and verification methods — Heating demand and cooling demand - National specifications and national supplements to ÖNORM EN ISO 13790 [ÖNORM B 8110-6: 2014 11 15 Wärmeschutz im Hochbau - Teil 6: Grundlagen und Nachweisverfahren - Heizwärmebedarf und Kühlbedarf - Nationale Festlegungen und nationale Ergänzungen zur ÖNORM EN ISO 13790]	
4e	A source of inflation values	n/a	<i>European Central Bank's Harmonised Index of Consumer Prices</i> (https://www.ecb.europa.eu/stats/prices/hicp/html/index.en.html)	Statistik Austria >> Economy >> Prices >> Consumer Price Index (VPI/HVPI) [Statistik Austria >> Wirtschaft >> Preise >> Verbraucherpreisindex (VPI/HVPI)]	
4f	Guidance for carrying out life-cycle cost analysis	n/a	<i>ISO 15686-5:2008 Buildings and constructed assets - Service-life planning - Part 5: Life-cycle costing</i>	ÖNORM B 1801-4: 2014 04 01 Project management in construction and operation - Part 4: Calculation of building life cycle costs [ÖNORM B 1801-4: 2014 04 01 Bauprojekt- und Objektmanagement - Teil 4: Berechnung von Lebenszykluskosten]	
4g	A list of generally accepted lifetimes for energy conservation measures/technologies	n/a	<i>EN 15459:2007 Energy performance of buildings – Economic evaluation procedure for energy systems in buildings (Annex A)</i>	ÖNORM EN 15459:2008 06 01, Energy performance of buildings - Economic evaluation procedure for energy systems in buildings, Annex A [ÖNORM EN 15459:2008 06 01 Energieeffizienz von Gebäuden - Wirtschaftlichkeitsberechnungen für Energieanlagen in Gebäuden]	
4c	Guidance for producing energy audit reports	n/a	<i>EN 16247-2 Energy audits – Part 2: Buildings (section 5.6)</i>	ÖNORM EN 16247-2:2014 07 01 Energy audits, Part 2: Buildings, Section 5.6 [ÖNORM EN 16247-2:2014 07 01 Energieaudits - Teil 2: Gebäude, 5.6]	
Design, construction and verification					
5a	Guidance for preparing systems manuals - these include guidance on how to operate and maintain systems e.g for new equipment installed	n/a	<i>EN 13460:2009 Maintenance – Documents for maintenance</i>	ÖNORM EN 13460:2009 09 01 Maintenance - Documentation for maintenance [ÖNORM EN 13460: 2009 09 01 Instandhaltung - Dokumente für die Instandhaltung]	

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Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	AUSTRIA
Operations, maintenance and monitoring					
6a	Guidance for operating and maintaining new systems and equipment	n/a	<i>ISO 15331:2011 Criteria for design, management and control of maintenance services for buildings</i>	ÖNORM EN 15331: 2011 11 01 Criteria for design, management and control of maintenance services for buildings [ÖNORM EN 15331: 2011 11 01 Kriterien für Entwicklung, Leitung und Überwachung von Instandhaltungsdienstleistungen von Gebäuden]	

BELGIUM (FLEMISH REGION)

Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	BELGIUM (FLEMISH REGION)
Baselining					
2a	Guidance for calculating accurate gross floor area (e.g. measuring from inside of walls, including all common areas, but excluding parking area)	► Tertiary	<i>EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling (section 3.2.6)</i>	Energy Decree of November 19, 2010, Annex VI: Method of determination of the level of primary energy consumption of offices and schools, Section 2 Definition of useful floor area [Het Energiebesluit van 19 november 2010, Bijlage VI Bepalingsmethode van het peil van primair energieverbruik van kantoor- en schoolgebouwen, 2: Definitie van de gebruiksoppervlakte]	
		► Apartment blocks		Energy Decree of November 19, 2010, Annex V: Method of determination of the level of primary energy consumption of residential buildings, Section 2 Definitions [Het Energiebesluit van 19 november 2010, Bijlage V, Bepalingsmethode van het peil van primair energieverbruik van woongebouwen, 2: Definities]	
2b	Guidance for recording occupancy (e.g. the number of people in a building and the time of day they are there)	n/a	<i>EN 16247-2 Energy audits buildings (Section 5.3.2 Information request)</i>	NBN EN 16247-2 Energy Audits Part 2 - buildings, Section 5.3.2 Information request [NBN EN 16247-2 Energie-audits - Deel 2: Gebouwen, 5.3.2]	
2c	Guidance for collecting information on the building and its systems, perhaps as part of an energy audit e.g. details of air conditioning systems, lighting system, glazing	n/a	<i>EN 16247-2 Energy audits buildings Section 5.3 Collecting data, 5.3.2 Information request and Annex D</i>	Residential buildings: Inspection Protocol for Energy Performance Certificates of existing residential buildings [Inspectieprotocol, Energieprestatiecertificaat bestaande gebouwen met woonfunctie]	
2d	Guidance for extrapolating or consolidating data to a complete calendar year	n/a	<i>ISO 16346:2013 - Energy performance of buildings -- Assessment of overall energy performance (Section 8.2.2 Extrapolation to an integral number of years)</i>		

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Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	BELGIUM (FLEMISH REGION)
2e	Guidance for normalising data against relevant variables in order to compare energy performance under equivalent conditions e.g. baseline regression modelling	n/a	ISO 50006:2014 - Energy management systems -- Measuring energy performance using energy baselines (EnB) and energy performance indicators (EnPI) -- General principles and guidance Annex D Normalising energy baselines using relevant variables		
2f	A source of energy consumption benchmarks for different types of buildings	► Tertiary	Buildings Performance Institute Europe's Data Hub for the Energy Performance of Buildings (see http://www.buildingsdata.eu/) .	Energy Statistics of the tertiary sector in Flanders in 2003 report [Energiekengetallen van de tertiaire sector in Vlaanderen 2003]	
		► Apartment blocks			
Savings calculations					
4a	Defining standards for energy modelling software (dynamic energy simulation)	► Tertiary	Application of public domain or commercially available software that meets EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling, is validated according to the criteria in EN 15265:2007 Energy performance of buildings – Calculation of energy needs for space heating and cooling using dynamic methods – General criteria and validation procedures	NBN EN ISO 13790 Energy performance of buildings - Calculation of energy use for space heating and cooling [NBN EN ISO 13790 Energieprestatie van gebouwen - Berekening van het energieverbruik voor verwarming en koeling]	
		► Apartment blocks		NBN EN 15265 Energy performance of buildings - Calculation of energy needs for space heating and cooling using dynamic methods - General criteria and validation procedures [NBN EN 15265 Energie-eigenschappen van gebouwen - Berekening van de energiebehoefte voor verwarming en koeling - Algemene criteria en validatieprocedures]	
4a				NBN EN ISO 13790 Energy performance of buildings - Calculation of energy use for space heating and cooling [NBN EN ISO 13790 Energieprestatie van gebouwen - Berekening van het energieverbruik voor verwarming en koeling]	
				NBN EN 15265 Energy performance of buildings - Calculation of energy needs for space heating and cooling using dynamic methods - General criteria and validation procedures [NBN EN 15265 Energie-eigenschappen van gebouwen - Berekening van de energiebehoefte voor verwarming en koeling - Algemene criteria en validatieprocedures]	
4b	A national software certification scheme used	► Tertiary	Not available		

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	to accredit individuals carrying out modelling (dynamic energy simulation)	► Apartment blocks	<i>Not available</i>		
4d	Guidance for calculating savings when using a spreadsheet-based approach, rather than software	► Tertiary	<i>EN 16212:2012 Energy Efficiency and Savings Calculation, Top-down and Bottom-up Methods (section 6)</i>	NBN EN 16212 Energy Efficiency and Savings Calculation, Top-down and Bottom-up Methods [NBN EN 16212 Energie-efficiëntie en energiebesparingsberekening - Top-down en Bottom-up methoden]	
		► Apartment blocks		NBN EN 16212 Energy Efficiency and Savings Calculation, Top-down and Bottom-up Methods [NBN EN 16212 Energie-efficiëntie en energiebesparingsberekening - Top-down en Bottom-up methoden]	
	A national certification scheme for individuals carrying out spreadsheet-based savings calculations (rather than using software)	► Tertiary	<i>Not available</i>		
		► Apartment blocks	<i>Not available</i>		
	A guide to carrying out dynamic energy simulation for residential buildings	n/a	<i>ISO 13790:2008 Energy performance of buildings -- Calculation of energy use for space heating and cooling</i>	NBN EN ISO 13790 Energy performance of buildings - Calculation of energy use for space heating and cooling [NBN EN ISO 13790 Energieprestatie van gebouwen - Berekening van het energiegebruik voor verwarming en koeling]	
4e	A source of inflation values	n/a	<i>European Central Bank's Harmonised Index of Consumer Prices</i> (https://www.ecb.europa.eu/stats/prices/hicp/html/index.en.html)		
4f	Guidance for carrying out life-cycle cost analysis	n/a	<i>ISO 15686-5:2008 Buildings and constructed assets - Service-life planning - Part 5: Life-cycle costing</i>		
4g	A list of generally accepted lifetimes for energy conservation measures/technologies	n/a	<i>EN 15459:2007 Energy performance of buildings – Economic evaluation procedure for energy systems in buildings (Annex A)</i>	NBN EN 15459 Energy performance of buildings - Economic evaluation procedure for energy systems in buildings [NBN EN 15459 Energieprestatie van gebouwen - Economische beoordelingsprocedure voor energiesystemen in gebouwen]	

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4c	Guidance for producing energy audit reports	n/a	<i>EN 16247-2 Energy audits – Part 2: Buildings (section 5.6)</i>	NBN EN 16247-2 Energy Audits Part 2 – buildings, Section 5.6 [NBN EN 16247-2 Energie-audits - Deel 2: Gebouwen, 5.6]	
Design, construction and verification					
5a	Guidance for preparing systems manuals - these include guidance on how to operate and maintain systems e.g for new equipment installed	n/a	<i>EN 13460:2009 Maintenance – Documents for maintenance</i>	NBN EN 13460 Maintenance - Documentation for maintenance [NBN EN 13460 Onderhoud - Documentatie voor onderhoud]	
Operations, maintenance and monitoring					
6a	Guidance for operating and maintaining new systems and equipment	n/a	<i>ISO 15331:2011 Criteria for design, management and control of maintenance services for buildings</i>	NBN EN 15331 Criteria for design, management and control of maintenance services for buildings [NBN EN 15331 Criteria voor ontwerp, beheer en controle van onderhoudsdiensten voor gebouwen]	

BELGIUM (BRUSSELS REGION)

Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	BELGIUM (BRUSSELS REGION)
Baselining					
2a	Guidance for calculating accurate gross floor area (e.g. measuring from inside of walls, including all common areas, but excluding parking area)	► Tertiary	<i>EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling (section 3.2.6)</i>	Ordinance on the energy performance and indoor climate of buildings of June 7, 2007, Art. 3, Section 4: Surface area of a building [Ordonnantie houdende de energieprestatie en het binnenklimaat van gebouwen van 7 juni 2007, Art. 3, 4° Oppervlakte van een gebouw]	
		► Apartment blocks		Ordinance on the energy performance and indoor climate of buildings of June 7, 2007, Art. 3, Section 4: Surface area of a building [Ordonnantie houdende de energieprestatie en het binnenklimaat van gebouwen van 7 juni 2007, Art. 3, 4° Oppervlakte van een gebouw]	
2b	Guidance for recording occupancy (e.g. the number of people in a building and the time of day they are there)	n/a	<i>EN 16247-2 Energy audits buildings (Section 5.3.2 Information request)</i>	Tertiary buildings: Template Energieauditverslag BIM, Section 2.3 Occupancy [Energieauditverslag BIM, §2.3 Bezetting]	
2c	Guidance for collecting information on the building and its systems, perhaps as part of an energy audit e.g. details of air conditioning systems, lighting system, glazing	n/a	<i>EN 16247-2 Energy audits buildings Section 5.3 Collecting data, 5.3.2 Information request and Annex D</i>	Tertiary buildings: Template Energieauditverslag BIM, Sections 1, 2 and 3 [Energieauditverslag BIM, hfdst 1, 2 en 3]	
2d	Guidance for extrapolating or consolidating data to a complete calendar year	n/a	<i>ISO 16346:2013 - Energy performance of buildings -- Assessment of overall energy performance (Section 8.2.2 Extrapolation to an integral number of years)</i>	Tertiary buildings: Template Energieauditverslag BIM, Section 4.1 Available data [Energieauditverslag BIM, hfdst 4.1 Beschikbare gegevens]	

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2e	Guidance for normalising data against relevant variables in order to compare energy performance under equivalent conditions e.g. baseline regression modelling	n/a	ISO 50006:2014 - Energy management systems -- Measuring energy performance using energy baselines (EnB) and energy performance indicators (EnPI) -- General principles and guidance Annex D Normalising energy baselines using relevant variables	Tertiary buildings: Template Energieauditverslag BIM, Section 4.2 Analysis of the fuel consumption [Energieauditverslag BIM, hfdst 4.2 Analyse van de brandstofverbruiken]	
2f	A source of energy consumption benchmarks for different types of buildings	► Tertiary	Buildings Performance Institute Europe’s Data Hub for the Energy Performance of Buildings (see http://www.buildingsdata.eu/) .		
		► Apartment blocks			
Savings calculations					
4a	Defining standards for energy modelling software (dynamic energy simulation)	► Tertiary	Application of public domain or commercially available software that meets EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling, is validated according to the criteria in EN 15265:2007 Energy performance of buildings – Calculation of energy needs for space heating and cooling using dynamic methods – General criteria and validation procedures		
		► Apartment blocks			
4b	A national software certification scheme used to accredit individuals carrying out modelling (dynamic energy simulation)	► Tertiary	Not available		
		► Apartment blocks	Not available		
4d	Guidance for calculating savings when using a	► Tertiary	EN 16212:2012 Energy Efficiency and Savings Calculation, Top-down and		

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	spreadsheet-based approach, rather than software	► Apartment blocks	<i>Bottom-up Methods (section 6)</i>		
	A national certification scheme for individuals carrying out spreadsheet-based savings calculations (rather than using software)	► Tertiary	<i>Not available</i>		
		► Apartment blocks	<i>Not available</i>		
	A guide to carrying out dynamic energy simulation for residential buildings	n/a	<i>ISO 13790:2008 Energy performance of buildings -- Calculation of energy use for space heating and cooling</i>		
4e	A source of inflation values	n/a	<i>European Central Bank's Harmonised Index of Consumer Prices</i> (https://www.ecb.europa.eu/stats/prices/hicp/html/index.en.html)		
4f	Guidance for carrying out life-cycle cost analysis	n/a	<i>ISO 15686-5:2008 Buildings and constructed assets - Service-life planning - Part 5: Life-cycle costing</i>		
4g	A list of generally accepted lifetimes for energy conservation measures/technologies	n/a	<i>EN 15459:2007 Energy performance of buildings – Economic evaluation procedure for energy systems in buildings (Annex A)</i>		
4c	Guidance for producing energy audit reports	n/a	<i>EN 16247-2 Energy audits – Part 2: Buildings (section 5.6)</i>	Tertiary buildings: Template Energieauditverslag BIM [Energieauditverslag BIM]	
Design, construction and verification					
5a	Guidance for preparing systems manuals - these include guidance on how to operate and maintain systems e.g for new equipment installed	n/a	<i>EN 13460:2009 Maintenance – Documents for maintenance</i>		

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Operations, maintenance and monitoring					
6a	Guidance for operating and maintaining new systems and equipment	n/a	<i>ISO 15331:2011 Criteria for design, management and control of maintenance services for buildings</i>		

BELGIUM (WALLOON REGION)

Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	BELGIUM (WALLOON REGION)
Baselining					
2a	Guidance for calculating accurate gross floor area (e.g. measuring from inside of walls, including all common areas, but excluding parking area)	► Tertiary	<i>EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling (section 3.2.6)</i>	Walloon Government Order of May 15, 2014, Annex A2 : Method of determination of the level of primary energy consumption of offices and services buildings and schools, Section 2 : Definition of useful floor area ("BSE" Method) [Arrêté du Gouvernement Wallon du 15 mai 2014, Annexe A2 : Méthode de détermination du niveau de consommation d'énergie primaire des immeubles de bureaux et de services et des bâtiments destinés à l'enseignement (Méthode BSE)]	
		► Apartment blocks		Walloon Government Decree of November 28, 2013 on the energy performance of buildings, Art. 2, 12° [Décret du 28 novembre 2013 relatif à la Performance énergétique des bâtiments, Art. 2, 12°]	
2b	Guidance for recording occupancy (e.g. the number of people in a building and the time of day they are there)	n/a	<i>EN 16247-2 Energy audits buildings (Section 5.3.2 Information request)</i>	NBN EN 16247-2 Energy audits - Part 2: Buildings, Section 5.3.2 Information request [NBN EN 16247-2 Audits énergétiques - Partie 2 : Bâtiments, 5.3.2]	
2c	Guidance for collecting information on the building and its systems, perhaps as part of an energy audit e.g. details of air conditioning systems, lighting system, glazing	n/a	<i>EN 16247-2 Energy audits buildings Section 5.3 Collecting data, 5.3.2 Information request and Annex D</i>	Residential buildings: Certificators Handbook, Part II, Data Collection Protocol [Certificat de performance energetique pour les habitations individuelles, Protocolle, Partie II, Méthode pour la collecte des données du projet et la détermination du volume protégé et de la superficie brute de l'habitation]	
2d	Guidance for extrapolating or consolidating data to a complete calendar year	n/a	<i>ISO 16346:2013 - Energy performance of buildings -- Assessment of overall energy performance (Section 8.2.2 Extrapolation to an integral number of years)</i>		

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Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	BELGIUM (WALLOON REGION)
2e	Guidance for normalising data against relevant variables in order to compare energy performance under equivalent conditions e.g. baseline regression modelling	n/a	ISO 50006:2014 - Energy management systems -- Measuring energy performance using energy baselines (EnB) and energy performance indicators (EnPI) -- General principles and guidance Annex D Normalising energy baselines using relevant variables		
2f	A source of energy consumption benchmarks for different types of buildings	► Tertiary	Buildings Performance Institute Europe’s Data Hub for the Energy Performance of Buildings (see http://www.buildingsdata.eu/) .		
		► Apartment blocks			
Savings calculations					
4a	Defining standards for energy modelling software (dynamic energy simulation)	► Tertiary	Application of public domain or commercially available software that meets EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling, is validated according to the criteria in EN 15265:2007 Energy performance of buildings – Calculation of energy needs for space heating and cooling using dynamic methods – General criteria and validation procedures	NBN EN ISO 13790 Energy performance of buildings - Calculation of energy use for space heating and cooling [NBN EN ISO 13790 Performance énergétique des bâtiments - Calcul des besoins d'énergie pour le chauffage et le refroidissement des locaux]	
		► Apartment blocks		NBN EN ISO 13790 Energy performance of buildings - Calculation of energy use for space heating and cooling [NBN EN ISO 13790 Performance énergétique des bâtiments - Calcul des besoins d'énergie pour le chauffage et le refroidissement des locaux]	NBN EN 15265 Energy performance of buildings - Calculation of energy needs for space heating and cooling using dynamic methods - General criteria and validation procedures [NBN EN 15265 Performance thermique des bâtiments - Calcul des besoins d'énergie pour le chauffage et le refroidissement des locaux - Critères généraux et procédures de validation]
4b	A national software certification scheme used	► Tertiary	Not available		

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Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	BELGIUM (WALLOON REGION)
	to accredit individuals carrying out modelling (dynamic energy simulation)	► Apartment blocks	<i>Not available</i>		
4d	Guidance for calculating savings when using a spreadsheet-based approach, rather than software	► Tertiary	<i>EN 16212:2012 Energy Efficiency and Savings Calculation, Top-down and Bottom-up Methods (section 6)</i>	NBN EN 16212 Energy Efficiency and Savings Calculation, Top-down and Bottom-up Methods [NBN EN 16212 Efficacité énergétique et calcul d'économies - Méthodes topdown (descendante) et bottom-up (ascendante)]	
		► Apartment blocks		NBN EN 16212 Energy Efficiency and Savings Calculation, Top-down and Bottom-up Methods [NBN EN 16212 Efficacité énergétique et calcul d'économies - Méthodes topdown (descendante) et bottom-up (ascendante)]	
	A national certification scheme for individuals carrying out spreadsheet-based savings calculations (rather than using software)	► Tertiary	<i>Not available</i>		
		► Apartment blocks	<i>Not available</i>		
	A guide to carrying out dynamic energy simulation for residential buildings	n/a	<i>ISO 13790:2008 Energy performance of buildings -- Calculation of energy use for space heating and cooling</i>	NBN EN ISO 13790 Energy performance of buildings - Calculation of energy use for space heating and cooling [NBN EN ISO 13790 Performance énergétique des bâtiments - Calcul des besoins d'énergie pour le chauffage et le refroidissement des locaux]	
4e	A source of inflation values	n/a	<i>European Central Bank's Harmonised Index of Consumer Prices (https://www.ecb.europa.eu/stats/prices/hicp/html/index.en.html)</i>	Website of the Ministry of Economy >> Companies & Freelance workers >> Specific areas >> Quality in construction >> Adaptation price index [Ministère fédéral de l'économie >> Entreprises & Indépendants >> Domaines spécifiques >> Qualité dans la construction >> Adaptation des prix à l'index]	
4f	Guidance for carrying out life-cycle cost analysis	n/a	<i>ISO 15686-5:2008 Buildings and constructed assets - Service-life planning - Part 5: Life-cycle costing</i>		
4g	A list of generally accepted lifetimes for energy conservation measures/technologies	n/a	<i>EN 15459:2007 Energy performance of buildings – Economic evaluation procedure for energy systems in buildings (Annex A)</i>	NBN EN 15459 Energy performance of buildings - Economic evaluation procedure for energy systems in buildings [NBN EN 15459 Performance énergétique des bâtiments - Procédure d'évaluation économique des systèmes énergétiques des bâtiments]	
4c	Guidance for producing energy audit reports	n/a	<i>EN 16247-2 Energy audits – Part 2: Buildings (section 5.6)</i>	Residential buildings: Energy Audit Procedure, Annex "Specifications for PAE2 Audit" (available on request) [Procédure d'Avis Énergétique, Annexe "Spécification pour l'audit PAE2" (disponible sur demande)]	

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Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	BELGIUM (WALLOON REGION)
Design, construction and verification					
5a	Guidance for preparing systems manuals - these include guidance on how to operate and maintain systems e.g for new equipment installed	n/a	<i>EN 13460:2009 Maintenance – Documents for maintenance</i>	NBN EN 13460 Maintenance - Documentation for maintenance [NBN EN 13460 Maintenance - Documentation pour la maintenance]	
Operations, maintenance and monitoring					
6a	Guidance for operating and maintaining new systems and equipment	n/a	<i>ISO 15331:2011 Criteria for design, management and control of maintenance services for buildings</i>	NBN EN 15331 Criteria for design, management and control of maintenance services for buildings [NBN EN 15331 Critères pour la conception, la gestion et le contrôle des services de maintenance dans les constructions]	

BULGARIA

Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	BULGARIA
Baselining					
2a	Guidance for calculating accurate gross floor area (e.g. measuring from inside of walls, including all common areas, but excluding parking area)	► Tertiary	<i>EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling (section 3.2.6)</i>	Law on Spatial Planning Additional Provisions, § 5 [ЗАКОН ЗА УСТРОЙСТВО НА ТЕРИТОРИЯТА Допълнителни разпоредби, § 5]	
		► Apartment blocks		Law on Spatial Planning Additional Provisions, § 5 [ЗАКОН ЗА УСТРОЙСТВО НА ТЕРИТОРИЯТА Допълнителни разпоредби, § 5]	
2b	Guidance for recording occupancy (e.g. the number of people in a building and the time of day they are there)	n/a	<i>EN 16247-2 Energy audits buildings (Section 5.3.2 Information request)</i>	Ordinance No. 7 / 15.12.2004 on energy efficiency of buildings [Наредба № 7 от 15.12.2004 г. за енергийна ефективност на сгради]	
2c	Guidance for collecting information on the building and its systems, perhaps as part of an energy audit e.g. details of air conditioning systems, lighting system, glazing	n/a	<i>EN 16247-2 Energy audits buildings Section 5.3 Collecting data, 5.3.2 Information request and Annex D</i>	Ordinance No. E-RD-04-1 / 22.01.2016 for energy efficiency audits, certification and assessment of energy savings in buildings, Art. 13, para. 2 [Наредба № Е-РД-04-1 от 22.01.2016 г. за обследване за енергийна ефективност, сертифициране и оценка на енергийните спестявания на сгради Чл. 13., ал. 2]	
2d	Guidance for extrapolating or consolidating data to a complete calendar year	n/a	<i>ISO 16346:2013 - Energy performance of buildings -- Assessment of overall energy performance (Section 8.2.2 Extrapolation to an integral number of years)</i>	Ordinance No. E-RD-04-2 / 22.01.2016 on the indicators for energy consumption and energy performance of buildings [Наредба № Е-РД-04-2 от 22.01.2016 г. за показателите за разход на енергия и енергийните характеристики на сгради]	
2e	Guidance for normalising data against relevant variables in order to compare energy performance under equivalent conditions e.g. baseline regression modelling	n/a	<i>ISO 50006:2014 - Energy management systems -- Measuring energy performance using energy baselines (EnB) and energy performance indicators (EnPI) -- General principles and guidance Annex D Normalising energy baselines using relevant variables</i>	Ordinance No. E-RD-04-2 / 22.01.2016 on the indicators for energy consumption and energy performance of buildings [Наредба № Е-РД-04-2 от 22.01.2016 г. за показателите за разход на енергия и енергийните характеристики на сгради]	

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Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	BULGARIA
2f	A source of energy consumption benchmarks for different types of buildings	► Tertiary	<i>Buildings Performance Institute Europe’s Data Hub for the Energy Performance of Buildings (see http://www.buildingsdata.eu/) .</i>		
		► Apartment blocks			
Savings calculations					
4a	Defining standards for energy modelling software (dynamic energy simulation)	► Tertiary	<i>Application of public domain or commercially available software that meets EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling, is validated according to the criteria in EN 15265:2007 Energy performance of buildings – Calculation of energy needs for space heating and cooling using dynamic methods – General criteria and validation procedures</i>		
		► Apartment blocks			
4b	A national software certification scheme used to accredit individuals carrying out modelling (dynamic energy simulation)	► Tertiary	<i>Not available</i>		
		► Apartment blocks	<i>Not available</i>		
4d	Guidance for calculating savings when using a spreadsheet-based approach, rather than software	► Tertiary	<i>EN 16212:2012 Energy Efficiency and Savings Calculation, Top-down and Bottom-up Methods (section 6)</i>		
		► Apartment blocks			
	A national certification scheme for individuals carrying out spreadsheet-based savings calculations (rather than using software)	► Tertiary	<i>Not available</i>		
		► Apartment blocks	<i>Not available</i>		

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Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	BULGARIA
	A guide to carrying out dynamic energy simulation for residential buildings	n/a	<i>ISO 13790:2008 Energy performance of buildings -- Calculation of energy use for space heating and cooling</i>		
4e	A source of inflation values	n/a	<i>European Central Bank's Harmonised Index of Consumer Prices</i> (https://www.ecb.europa.eu/stats/prices/hicp/html/index.en.html)	National Statistical Institute website >> Statistical data >> Macroeconomic statistics >> Inflation and Consumer Price Indices [Национален Статистически Институт, уебсайт >> Статистически данни >> Макроикономическа статистика >> Инфлация и индекси на потребителските цени]	
4f	Guidance for carrying out life-cycle cost analysis	n/a	<i>ISO 15686-5:2008 Buildings and constructed assets - Service-life planning - Part 5: Life-cycle costing</i>	Ordinance No. 7 / 15.12.2004 on energy efficiency of buildings, Annex 9 [Наредба № 7 от 15.12.2004 г. за енергийна ефективност на сгради, Приложение 9.]	
4g	A list of generally accepted lifetimes for energy conservation measures/technologies	n/a	<i>EN 15459:2007 Energy performance of buildings – Economic evaluation procedure for energy systems in buildings (Annex A)</i>		
4c	Guidance for producing energy audit reports	n/a	<i>EN 16247-2 Energy audits – Part 2: Buildings (section 5.6)</i>	Ordinance No. E-RD-04-1 / 22.01.2016 for energy efficiency audits, certification and assessment of energy savings in buildings, Chapter 3 [Наредба № Е-РД-04-1 от 22.01.2016 г. за обследване за енергийна ефективност, сертифициране и оценка на енергийните спестявания на сгради, Глава 3]	
Design, construction and verification					
5a	Guidance for preparing systems manuals - these include guidance on how to operate and maintain systems e.g for new equipment installed	n/a	<i>EN 13460:2009 Maintenance – Documents for maintenance</i>		
Operations, maintenance and monitoring					
6a	Guidance for operating and maintaining new systems and equipment	n/a	<i>ISO 15331:2011 Criteria for design, management and control of maintenance services for buildings</i>		

CROATIA

Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	CROATIA
Baselining					
2a	Guidance for calculating accurate gross floor area (e.g. measuring from inside of walls, including all common areas, but excluding parking area)	► Tertiary	<i>EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling (section 3.2.6)</i>	Ordinance on energy audits and energy certification of buildings (OG 48/14, 150/14, 133/15), Article 3, point 14 [Pravilnik o energetsom pregledu zgrade I energetsom certificiranju, Članak 3, 14]	
		► Apartment blocks		Ordinance on energy audits and energy certification of buildings (OG 48/14, 150/14, 133/15), Article 3, point 14 [Pravilnik o energetsom pregledu zgrade I energetsom certificiranju, Članak 3, 14]	
2b	Guidance for recording occupancy (e.g. the number of people in a building and the time of day they are there)	n/a	<i>EN 16247-2 Energy audits buildings (Section 5.3.2 Information request)</i>	Methodology of performing a building energy audit, Chapters 2.1 and 2.2 [Metodologija provođenja eneretskog pregleda građevina, 2.1, 2.2] HRN EN 16247-2:2014 Energy audits -- Part 2: Buildings, Section 5.3.2 Information request [HRN EN 16247-2:2014 Energijski auditi -- 2. dio: Zgrade, 5.3.2]	
2c	Guidance for collecting information on the building and its systems, perhaps as part of an energy audit e.g. details of air conditioning systems, lighting system, glazing	n/a	<i>EN 16247-2 Energy audits buildings Section 5.3 Collecting data, 5.3.2 Information request and Annex D</i>	Methodology of performing a building energy audit, Chapters 2.1, 2.2; Annexes 3.2, 3.3 [Metodologija provođenja eneretskog pregleda građevina, 2.1, 2.2; Prilozi 3.2, 3.3]	
2d	Guidance for extrapolating or consolidating data to a complete calendar year	n/a	<i>ISO 16346:2013 - Energy performance of buildings -- Assessment of overall energy performance (Section 8.2.2 Extrapolation to an integral number of years)</i>	Methodology of performing a building energy audit, Chapter 2.6 [Metodologija provođenja eneretskog pregleda građevina, 2.6]	
2e	Guidance for normalising data against relevant variables in order to compare energy performance under equivalent conditions e.g. baseline regression modelling	n/a	<i>ISO 50006:2014 - Energy management systems -- Measuring energy performance using energy baselines (EnB) and energy performance indicators (EnPI) -- General principles and guidance Annex D Normalising energy baselines using relevant variables</i>	Methodology of performing a building energy audit, Chapter 2.6 [Metodologija provođenja eneretskog pregleda građevina, 2.6]	

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Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	CROATIA
2f	A source of energy consumption benchmarks for different types of buildings	► Tertiary	<i>Buildings Performance Institute Europe’s Data Hub for the Energy Performance of Buildings (see http://www.buildingsdata.eu/) .</i>		
		► Apartment blocks			
Savings calculations					
4a	Defining standards for energy modelling software (dynamic energy simulation)	► Tertiary	<i>Application of public domain or commercially available software that meets EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling, is validated according to the criteria in EN 15265:2007 Energy performance of buildings – Calculation of energy needs for space heating and cooling using dynamic methods – General criteria and validation procedures</i>		
		► Apartment blocks			
4b	A national software certification scheme used to accredit individuals carrying out modelling (dynamic energy simulation)	► Tertiary	<i>Not available</i>		
		► Apartment blocks	<i>Not available</i>		
4d	Guidance for calculating savings when using a spreadsheet-based approach, rather than software	► Tertiary	<i>EN 16212:2012 Energy Efficiency and Savings Calculation, Top-down and Bottom-up Methods (section 6)</i>	HR EN 16212:2013 Energy Efficiency and Savings Calculation, Top-down and Bottom-up Methods [HR EN 16212:2013 Energijska učinkovitost i izračun ušteda, metode „odozgo prema dolje“ i „odozdo prema gore“]	
		► Apartment blocks		HR EN 16212:2013 Energy Efficiency and Savings Calculation, Top-down and Bottom-up Methods [HR EN 16212:2013 Energijska učinkovitost i izračun ušteda, metode „odozgo prema dolje“ i „odozdo prema gore“]	
	A national certification scheme for individuals carrying out spreadsheet-based savings calculations (rather than using software)	► Tertiary	<i>Not available</i>		
		► Apartment blocks	<i>Not available</i>		

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	A guide to carrying out dynamic energy simulation for residential buildings	n/a	<i>ISO 13790:2008 Energy performance of buildings -- Calculation of energy use for space heating and cooling</i>	HRN EN ISO 13790:2008 Energy performance of buildings -- Calculation of energy use for space heating and cooling [HRN EN ISO 13790:2008 Energijska svojstva zgrada -- Proračun potrebne energije za grijanje i hlađenje prostora]	
4e	A source of inflation values	n/a	<i>European Central Bank's Harmonised Index of Consumer Prices</i> (https://www.ecb.europa.eu/stats/prices/hicp/html/index.en.html)	Croatian Bureau of Statistics >> Statistical Databases >> Prices >> Consumer price indices [Državni Zavod za Statistiku >> Objavljeni podaci >> Baze podataka >> Cijene >> Indeksi potrošačkih cijena]	
4f	Guidance for carrying out life-cycle cost analysis	n/a	<i>ISO 15686-5:2008 Buildings and constructed assets - Service-life planning - Part 5: Life-cycle costing</i>	HR ISO 15686-5:2009 Buildings and constructed assets -- Service-life planning -- Part 5: Life-cycle costing [HR ISO 15686-5:2009 Građevine -- Planiranje uporabnog vijeka -- 5. dio: Trošak životnog ciklusa]	
4g	A list of generally accepted lifetimes for energy conservation measures/technologies	n/a	<i>EN 15459:2007 Energy performance of buildings – Economic evaluation procedure for energy systems in buildings (Annex A)</i>	Ordinance on the system for monitoring, measurement and verification of energy savings (OG 71/15), Appendix I, Appendix C, Table 1: Lifetime measures [Pravilnik o sustavu za praćenje, mjerenje i verifikaciju ušteda energije, Prilog I, Prilog C, Tablica 1: Životni vijek mjera]	
4c	Guidance for producing energy audit reports	n/a	<i>EN 16247-2 Energy audits – Part 2: Buildings (section 5.6)</i>	Methodology of performing a building energy audit, Section 2.9: The contents of the final energy audit report [Metodologija provođenja energetskog pregleda građevina, 2.9. Sadržaj završnog izvješća o energetskom pregledu]	
Design, construction and verification					
5a	Guidance for preparing systems manuals - these include guidance on how to operate and maintain systems e.g for new equipment installed	n/a	<i>EN 13460:2009 Maintenance – Documents for maintenance</i>	HRN EN 14360:2009 Maintenance -- Documents for maintenance [HRN EN 14360:2009 Održavanje -- Dokumentacija o održavanju]	
Operations, maintenance and monitoring					
6a	Guidance for operating and maintaining new systems and equipment	n/a	<i>ISO 15331:2011 Criteria for design, management and control of maintenance services for buildings</i>	Technical regulation on ventilation systems, partial air conditioning and air conditioning of buildings (OG 03/07) [Tehnički propis o sustavima ventilacije, djelomične klimatizacije i klimatizacije zgrada, Narodne novine 03/07] Technical regulation on heating and cooling systems in buildings (OG 110/08) [Tehnički propis o sustavima grijanja i hlađenja zgrada, Narodne novine 110/08]	

CYPRUS

Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	CYPRUS
Baselining					
2a	Guidance for calculating accurate gross floor area (e.g. measuring from inside of walls, including all common areas, but excluding parking area)	► Tertiary	<i>EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling (section 3.2.6)</i>	Methodology for Calculating the Energy Performance of a Building, Section 4.1.3 Building Limits [Μεθοδολογία Υπολογισμού της ενεργειακής απόδοσης κτιρίου, 4.1.3. Όρια κτιρίου]	
		► Apartment blocks		Methodology for Calculating the Energy Performance of a Building, Section 4.1.3 Building Limits [Μεθοδολογία Υπολογισμού της ενεργειακής απόδοσης κτιρίου, 4.1.3. Όρια κτιρίου]	
2b	Guidance for recording occupancy (e.g. the number of people in a building and the time of day they are there)	n/a	<i>EN 16247-2 Energy audits buildings (Section 5.3.2 Information request)</i>		
2c	Guidance for collecting information on the building and its systems, perhaps as part of an energy audit e.g. details of air conditioning systems, lighting system, glazing	n/a	<i>EN 16247-2 Energy audits buildings Section 5.3 Collecting data, 5.3.2 Information request and Annex D</i>		
2d	Guidance for extrapolating or consolidating data to a complete calendar year	n/a	<i>ISO 16346:2013 - Energy performance of buildings -- Assessment of overall energy performance (Section 8.2.2 Extrapolation to an integral number of years)</i>		
2e	Guidance for normalising data against relevant variables in order to compare energy performance under equivalent conditions e.g. baseline regression modelling	n/a	<i>ISO 50006:2014 - Energy management systems -- Measuring energy performance using energy baselines (EnB) and energy performance indicators (EnPI) -- General principles and guidance Annex D Normalising energy baselines using relevant variables</i>		

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Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	CYPRUS
2f	A source of energy consumption benchmarks for different types of buildings	► Tertiary	<i>Buildings Performance Institute Europe’s Data Hub for the Energy Performance of Buildings (see http://www.buildingsdata.eu/) .</i>		
		► Apartment blocks			
Savings calculations					
4a	Defining standards for energy modelling software (dynamic energy simulation)	► Tertiary	<i>Application of public domain or commercially available software that meets EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling, is validated according to the criteria in EN 15265:2007 Energy performance of buildings – Calculation of energy needs for space heating and cooling using dynamic methods – General criteria and validation procedures</i>		
		► Apartment blocks			
4b	A national software certification scheme used to accredit individuals carrying out modelling (dynamic energy simulation)	► Tertiary	<i>Not available</i>		
		► Apartment blocks	<i>Not available</i>		
4d	Guidance for calculating savings when using a spreadsheet-based approach, rather than software	► Tertiary	<i>EN 16212:2012 Energy Efficiency and Savings Calculation, Top-down and Bottom-up Methods (section 6)</i>		
		► Apartment blocks			
	A national certification scheme for individuals carrying out spreadsheet-based savings calculations (rather than using software)	► Tertiary	<i>Not available</i>		
		► Apartment blocks	<i>Not available</i>		

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Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	CYPRUS
	A guide to carrying out dynamic energy simulation for residential buildings	n/a	<i>ISO 13790:2008 Energy performance of buildings -- Calculation of energy use for space heating and cooling</i>		
4e	A source of inflation values	n/a	<i>European Central Bank's Harmonised Index of Consumer Prices</i> (https://www.ecb.europa.eu/stats/prices/hicp/html/index.en.html)	Statistical Service of Cyprus >> Consumer Price Index [Στατιστική Υπηρεσία της Κυπριακής Δημοκρατίας >> Consumer Price Index]	
4f	Guidance for carrying out life-cycle cost analysis	n/a	<i>ISO 15686-5:2008 Buildings and constructed assets - Service-life planning - Part 5: Life-cycle costing</i>		
4g	A list of generally accepted lifetimes for energy conservation measures/technologies	n/a	<i>EN 15459:2007 Energy performance of buildings – Economic evaluation procedure for energy systems in buildings (Annex A)</i>	CYS EN 15459 Energy performance of buildings - Economic evaluation procedure for energy systems in buildings	
4c	Guidance for producing energy audit reports	n/a	<i>EN 16247-2 Energy audits – Part 2: Buildings (section 5.6)</i>		
Design, construction and verification					
5a	Guidance for preparing systems manuals - these include guidance on how to operate and maintain systems e.g for new equipment installed	n/a	<i>EN 13460:2009 Maintenance – Documents for maintenance</i>		
Operations, maintenance and monitoring					
6a	Guidance for operating and maintaining new systems and equipment	n/a	<i>ISO 15331:2011 Criteria for design, management and control of maintenance services for buildings</i>	Set-up and maintenance procedure for heating systems with boilers, Department of Energy, Trade and Tourism Industry [Διαδικασία ρύθμισης και ελέγχου συστημάτων θέρμανσης με λέβητα, Υπουργείο Ενέργειας, Εμπορίου Βιομηχανίας και Τουρισμού] Set-up and maintenance procedure for air conditioning systems, Ministry of Transport, Communications and Works [Οδηγός ρύθμισης ελέγχου και συντήρησης συστημάτων κλιματισμού, Κυπριακή Δημοκρατία Υπουργείο Μεταφορών Επικοινωνιών και Έργων]	

CZECH REPUBLIC

Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	CZECH REPUBLIC
Baselining					
2a	Guidance for calculating accurate gross floor area (e.g. measuring from inside of walls, including all common areas, but excluding parking area)	► Tertiary	<i>EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling (section 3.2.6)</i>	ČSN EN 15221-6 Facility Management - Part 6: Area and Space Measurement in Facility Management [ČSN EN 15221-6 (březen 2014): Facility management – Část 6: Měření ploch a prostorů ve facility managementu]	
		► Apartment blocks		ČSN EN 15221-6 Facility Management - Part 6: Area and Space Measurement in Facility Management [ČSN EN 15221-6 (březen 2014): Facility management – Část 6: Měření ploch a prostorů ve facility managementu]	
2b	Guidance for recording occupancy (e.g. the number of people in a building and the time of day they are there)	<i>n/a</i>	<i>EN 16247-2 Energy audits buildings (Section 5.3.2 Information request)</i>	ČSN EN 16247-2 Energy audits - Part 2: Buildings (Section 5.3.2 Information request) [ČSN EN 16247-2 Energetické audit - Část 2: Budovy]	
2c	Guidance for collecting information on the building and its systems, perhaps as part of an energy audit e.g. details of air conditioning systems, lighting system, glazing	<i>n/a</i>	<i>EN 16247-2 Energy audits buildings Section 5.3 Collecting data, 5.3.2 Information request and Annex D</i>	Decree no. 480/2012 Coll. on energy audits and energy assessment [Vyhláška č. 480/2012 Sb. o energetickém auditu a energetickém posudku]	
2d	Guidance for extrapolating or consolidating data to a complete calendar year	<i>n/a</i>	<i>ISO 16346:2013 - Energy performance of buildings -- Assessment of overall energy performance (Section 8.2.2 Extrapolation to an integral number of years)</i>		
2e	Guidance for normalising data against relevant variables in order to compare energy performance under equivalent conditions e.g. baseline regression modelling	<i>n/a</i>	<i>ISO 50006:2014 - Energy management systems -- Measuring energy performance using energy baselines (EnB) and energy performance indicators (EnPI) -- General principles and guidance Annex D Normalising energy baselines using relevant variables</i>	ČSN ISO 50006 Energy management systems - Measuring energy performance using energy baselines (EnB) and energy performance indicators (EnPI) - General principles and guidance [ČSN ISO 50006 Systémy managementu hospodaření s energií - Měření energetické náročnosti pomocí výchozího stavu spotřeby energie (EnB) a ukazatelů energetické náročnosti (EnPI) - Obecné zásady a návod]	

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Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	CZECH REPUBLIC
2f	A source of energy consumption benchmarks for different types of buildings	► Tertiary	<i>Buildings Performance Institute Europe’s Data Hub for the Energy Performance of Buildings (see http://www.buildingsdata.eu/) .</i>		
		► Apartment blocks			
Savings calculations					
4a	Defining standards for energy modelling software (dynamic energy simulation)	► Tertiary	<i>Application of public domain or commercially available software that meets EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling, is validated according to the criteria in EN 15265:2007 Energy performance of buildings – Calculation of energy needs for space heating and cooling using dynamic methods – General criteria and validation procedures</i>	ČSN EN ISO 13790 Energy performance of buildings - Calculation of energy use for space heating and cooling [ČSN EN ISO 13790 Energetická náročnost budov - Výpočet spotřeby energie na vytápění a chlazení]	
		► Apartment blocks		ČSN EN 15265 Energy performance of buildings - Calculation of energy needs for space heating and cooling using dynamic methods - General criteria and validation procedures [ČSN EN 15265 Energetická náročnost budov - Výpočet potřeby tepla na vytápění a chlazení dynamickými metodami - Obecná kritéria a ověřovací postupy]	
				ČSN EN ISO 13790 Energy performance of buildings - Calculation of energy use for space heating and cooling [ČSN EN ISO 13790 Energetická náročnost budov - Výpočet spotřeby energie na vytápění a chlazení]	
				ČSN EN 15265 Energy performance of buildings - Calculation of energy needs for space heating and cooling using dynamic methods - General criteria and validation procedures [ČSN EN 15265 Energetická náročnost budov - Výpočet potřeby tepla na vytápění a chlazení dynamickými metodami - Obecná kritéria a ověřovací postupy]	
4b	A national software certification scheme used to accredit individuals carrying out modelling (dynamic energy simulation)	► Tertiary	<i>Not available</i>		
		► Apartment blocks	<i>Not available</i>		
4d	Guidance for calculating savings when using a spreadsheet-based approach, rather than software	► Tertiary	<i>EN 16212:2012 Energy Efficiency and Savings Calculation, Top-down and Bottom-up Methods (section 6)</i>	ČSN EN 16212 Energy Efficiency and Savings Calculation, Top-down and Bottom-up Methods [ČSN EN 16212 Energetická účinnost a výpočty úspor - Metody top-down a bottom-up]	
		► Apartment blocks		ČSN EN 16212 Energy Efficiency and Savings Calculation, Top-down and Bottom-up Methods [ČSN EN 16212 Energetická účinnost a výpočty úspor - Metody top-down a bottom-up]	

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Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	CZECH REPUBLIC
	A national certification scheme for individuals carrying out spreadsheet-based savings calculations (rather than using software)	► Tertiary	<i>Not available</i>	Certified energy specialist [Energetický specialista]	
		► Apartment blocks	<i>Not available</i>	Certified energy specialist [Energetický specialista]	
	A guide to carrying out dynamic energy simulation for residential buildings	n/a	<i>ISO 13790:2008 Energy performance of buildings -- Calculation of energy use for space heating and cooling</i>	ČSN EN ISO 13790 Energy performance of buildings - Calculation of energy use for space heating and cooling [ČSN EN ISO 13790 Energetická náročnost budov - Výpočet spotřeby energie na vytápění a chlazení]	
4e	A source of inflation values	n/a	<i>European Central Bank's Harmonised Index of Consumer Prices</i> (https://www.ecb.europa.eu/stats/prices/hicp/html/index.en.html)	Czech Statistical Office >> Statistics >> Prices, Inflation >> Inflation, Consumer Prices [Český statistický úřad >> Statistika >> Ceny, inflace >> Inflace, spotřebitelské ceny]	
4f	Guidance for carrying out life-cycle cost analysis	n/a	<i>ISO 15686-5:2008 Buildings and constructed assets - Service-life planning - Part 5: Life-cycle costing</i>	ČSN ISO 15686-5 Buildings and constructed assets - Service-life planning - Part 5: Life-cycle costing [ČSN ISO 15686-5 Budovy a jiné stavby - Plánování životnosti - Část 5: Posuzování nákladů životního cyklu]	
4g	A list of generally accepted lifetimes for energy conservation measures/technologies	n/a	<i>EN 15459:2007 Energy performance of buildings – Economic evaluation procedure for energy systems in buildings (Annex A)</i>	ČSN EN 15459 Energy performance of buildings - Economic evaluation procedure for energy systems in buildings [ČSN EN 15459 Energetická náročnost budov - Postupy pro ekonomické hodnocení energetických soustav v budovách]	
4c	Guidance for producing energy audit reports	n/a	<i>EN 16247-2 Energy audits – Part 2: Buildings (section 5.6)</i>	Decree no. 480/2012 Coll. on energy audits and energy assessment [Vyhláška č. 480/2012 Sb. o energetickém auditu a energetickém posudku]	
Design, construction and verification					
5a	Guidance for preparing systems manuals - these include guidance on how to operate and maintain systems e.g for new equipment installed	n/a	<i>EN 13460:2009 Maintenance – Documents for maintenance</i>	ČSN EN 13460 Maintenance - Documentation for maintenance [ČSN EN 13460 Údržba - Dokumentace pro údržbu]	
Operations, maintenance and monitoring					
6a	Guidance for operating and maintaining new systems and equipment	n/a	<i>ISO 15331:2011 Criteria for design, management and control of maintenance services for buildings</i>	ČSN EN 15331 Criteria for design, management and control of maintenance services for buildings [ČSN EN 15331 Kritéria pro návrh, management a řízení služeb údržby budov]	

DENMARK

Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	DENMARK
Baselining					
2a	Guidance for calculating accurate gross floor area (e.g. measuring from inside of walls, including all common areas, but excluding parking area)	► Tertiary	<i>EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling (section 3.2.6)</i>	Handbook for energy consultants (HB 2016), Section 3.3 Building review and registration [Håndbog for Energikonsulenter (HB 2016), 3.3 Bygningsgennemgang og registrering]	
		► Apartment blocks		Handbook for energy consultants (HB 2016), Section 3.3.1 Definition of heated area [Håndbog for Energikonsulenter (HB 2016), 3.3.1 Definition af opvarmet areal]	
2b	Guidance for recording occupancy (e.g. the number of people in a building and the time of day they are there)	n/a	<i>EN 16247-2 Energy audits buildings (Section 5.3.2 Information request)</i>	DS/EN 16247-2:2014 Energy audits - Part 2: Buildings, Section 5.3.2 Information request [DS/EN 16247-2:2014 Energiaudit - Del 2: Bygninger, 5.3.2]	
2c	Guidance for collecting information on the building and its systems, perhaps as part of an energy audit e.g. details of air conditioning systems, lighting system, glazing	n/a	<i>EN 16247-2 Energy audits buildings Section 5.3 Collecting data, 5.3.2 Information request and Annex D</i>	Handbook for energy consultants (HB 2016) [Håndbog for Energikonsulenter (HB 2016)]	
2d	Guidance for extrapolating or consolidating data to a complete calendar year	n/a	<i>ISO 16346:2013 - Energy performance of buildings -- Assessment of overall energy performance (Section 8.2.2 Extrapolation to an integral number of years)</i>		
2e	Guidance for normalising data against relevant variables in order to compare energy performance under equivalent conditions e.g. baseline regression modelling	n/a	<i>ISO 50006:2014 - Energy management systems -- Measuring energy performance using energy baselines (EnB) and energy performance indicators (EnPI) -- General principles and guidance Annex D Normalising energy baselines using relevant variables</i>	DS/ISO 50006:2015 Energy management systems - Measuring energy performance using energy baselines (EnB) and energy performance indicators (EnPI) - General principles and guidance [DS/ISO 50006:2015 Energiledelsessystemer - Måling af energipræstation ved hjælp af baseline for energi (EnB) og indikatorer for energipræstation (EnPI) - Generelle principper og vejledning]	

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2f	A source of energy consumption benchmarks for different types of buildings	► Tertiary	<i>Buildings Performance Institute Europe’s Data Hub for the Energy Performance of Buildings (see http://www.buildingsdata.eu/) .</i>	Potential energy savings by continous upgrading of existing buildings until 2050, Sbi 2013:8, Tables 6, 7 and 8 [Varmebesparelse ved løbende bygningsrenovering frem til 2050, Sbi 2013:08, Tabeller 6, 7, 8]	
		► Apartment blocks		Potential energy savings by continous upgrading of existing buildings until 2050, Sbi 2013:8, Tables 5, 8 [Varmebesparelse ved løbende bygningsrenovering frem til 2050, Sbi 2013:08, Tabeller 5, 8]	
Savings calculations					
4a	Defining standards for energy modelling software (dynamic energy simulation)	► Tertiary	<i>Application of public domain or commercially available software that meets EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling, is validated according to the criteria in EN 15265:2007 Energy performance of buildings – Calculation of energy needs for space heating and cooling using dynamic methods – General criteria and validation procedures</i>	DS/EN ISO 13790:2008 Energy performance of buildings - Calculation of energy use for space heating and cooling [DS/EN ISO 13790:2008 Bygningers energieffektivitet - Beregning af energiforbrug til rumopvarmning og -køling]	
		► Apartment blocks		DS/EN 15265:2007 Energy performance of buildings - Calculation of energy needs for space heating and cooling using dynamic methods - General criteria and validation procedures [DS/EN 15265:2007 Bygningers termiske ydeevne - Beregning af energibehov til rumopvarmning og -køling ved hjælp af dynamiske metoder - Generelle kriterier og evalueringsprocedurer]	
4b	A national software certification scheme used to accredit individuals carrying out modelling (dynamic energy simulation)	► Tertiary	<i>Not available</i>		
		► Apartment blocks	<i>Not available</i>		
4d	Guidance for calculating savings when using a spreadsheet-based approach, rather than	► Tertiary	<i>EN 16212:2012 Energy Efficiency and Savings Calculation, Top-down and Bottom-up Methods (section 6)</i>	DS/EN 16212:2012 Energy Efficiency and Savings Calculation, Top-down and Bottom-up Methods [DS/EN 16212:2012 Beregning af energieffektivitet og energibesparelser, top-down- og bottom-up-metoder]	

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	software	► Apartment blocks		DS/EN 16212:2012 Energy Efficiency and Savings Calculation, Top-down and Bottom-up Methods [DS/EN 16212:2012 Beregning af energieffektivitet og energibesparelser, top-down- og bottom-up-metoder]	
	A national certification scheme for individuals carrying out spreadsheet-based savings calculations (rather than using software)	► Tertiary	<i>Not available</i>		
		► Apartment blocks	<i>Not available</i>		
	A guide to carrying out dynamic energy simulation for residential buildings	n/a	<i>ISO 13790:2008 Energy performance of buildings -- Calculation of energy use for space heating and cooling</i>	DS/EN ISO 13790:2008 Energy performance of buildings - Calculation of energy use for space heating and cooling [DS/EN ISO 13790:2008 Bygningers energieffektivitet - Beregning af energiforbrug til rumopvarmning og -køling]	
4e	A source of inflation values	n/a	<i>European Central Bank's Harmonised Index of Consumer Prices</i> (https://www.ecb.europa.eu/stats/prices/hicp/html/index.en.html)		
4f	Guidance for carrying out life-cycle cost analysis	n/a	<i>ISO 15686-5:2008 Buildings and constructed assets - Service-life planning - Part 5: Life-cycle costing</i>	LCAbyg tool for life cycle assessment, Danish Energy Agency [LCAbyg, LCA-værktøj, Energistyrelsen]	
4g	A list of generally accepted lifetimes for energy conservation measures/technologies	n/a	<i>EN 15459:2007 Energy performance of buildings – Economic evaluation procedure for energy systems in buildings (Annex A)</i>	Danish Building Regulation 2015, Annex 6, Table 1: Lifetimes for profitability calculations [Bygningsreglement 2015, Bilag 6, Tabel 1: Levetider der kan anvendes ved beregning af rentabiliteten]	
4c	Guidance for producing energy audit reports	n/a	<i>EN 16247-2 Energy audits – Part 2: Buildings (section 5.6)</i>	Handbook for energy consultants (HB 2016), 6.2: The building's energy label [Håndbog for Energikonsulenter (HB 2016), 6.2 Bygningens energimærke]	

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Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	DENMARK
Design, construction and verification					
5a	Guidance for preparing systems manuals - these include guidance on how to operate and maintain systems e.g for new equipment installed	n/a	<i>EN 13460:2009 Maintenance – Documents for maintenance</i>	DS/EN 13460:2009 Maintenance - Documentation for maintenance [DS/EN 13460:2009 Vedligehold - Dokumentation for vedligehold]	
Operations, maintenance and monitoring					
6a	Guidance for operating and maintaining new systems and equipment	n/a	<i>ISO 15331:2011 Criteria for design, management and control of maintenance services for buildings</i>	DS/EN 15331:2011 Criteria for design, management and control of maintenance services for buildings [DS/EN 15331:2011 Kriterier for udformning, ledelse og kontrol af vedligeholdsydelser for bygninger]	

ESTONIA

Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	ESTONIA
Baselining					
2a	Guidance for calculating accurate gross floor area (e.g. measuring from inside of walls, including all common areas, but excluding parking area)	► Tertiary	<i>EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling (section 3.2.6)</i>	List of the technical measurements of a building and the basis for calculation, RT I, 06.10.2015, 8, Section § 20. Closed gross area [Ehitise tehniliste andmete loetelu ja arvestamise alused, RT I, 10.06.2015, 8, § 20. Suletud brutopind]	
		► Apartment blocks		List of the technical measurements of a building and the basis for calculation, RT I, 06.10.2015, 8, Section § 20. Closed gross area [Ehitise tehniliste andmete loetelu ja arvestamise alused, RT I, 10.06.2015, 8, § 20. Suletud brutopind]	
2b	Guidance for recording occupancy (e.g. the number of people in a building and the time of day they are there)	<i>n/a</i>	<i>EN 16247-2 Energy audits buildings (Section 5.3.2 Information request)</i>	Methodology for calculating the energy performance of buildings (RT I, 09.06.2015, 21), Chapter 3: Typical building user [Hoone energiatõhususe arvutamise meetoodika (RT I, 09.06.2015, 21), 3. peatükk: Hoone tüüpiline kasutus.]	
2c	Guidance for collecting information on the building and its systems, perhaps as part of an energy audit e.g. details of air conditioning systems, lighting system, glazing	<i>n/a</i>	<i>EN 16247-2 Energy audits buildings Section 5.3 Collecting data, 5.3.2 Information request and Annex D</i>	Residential: Guide for energy audits of residential buildings, 2015 [Korterelamute energiaauditite koostamise juhend, 2015] Non-residential: The Total Concept method, Guidebook for Implementation and Quality assurance, Section 4.8 Energy audit and identification of measures	
2d	Guidance for extrapolating or consolidating data to a complete calendar year	<i>n/a</i>	<i>ISO 16346:2013 - Energy performance of buildings -- Assessment of overall energy performance (Section 8.2.2 Extrapolation to an integral number of years)</i>	Requirements for the energy performance certificate and the procedure of issuance (RT I, 06.05.2015, 2), Section 11 The calculation of the weighted energy use [Nõuded energiamärgise andmisele ja energiamärgisele (RT I, 06.05.2015, 2), §11. Kaalutud energiaerikasutuse arvutuskäik]	
2e	Guidance for normalising data against relevant variables in order to compare energy performance under equivalent conditions e.g. baseline regression modelling	<i>n/a</i>	<i>ISO 50006:2014 - Energy management systems -- Measuring energy performance using energy baselines (EnB) and energy performance indicators (EnPI) -- General principles and guidance Annex D Normalising energy baselines using relevant variables</i>	Requirements for the energy performance certificate and the procedure of issuance (RT I, 06.05.2015, 2) [Nõuded energiamärgise andmisele ja energiamärgisele (RT I, 06.05.2015, 2)]	

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2f	A source of energy consumption benchmarks for different types of buildings	► Tertiary	<i>Buildings Performance Institute Europe’s Data Hub for the Energy Performance of Buildings (see http://www.buildingsdata.eu/) .</i>		
		► Apartment blocks			
Savings calculations					
4a	Defining standards for energy modelling software (dynamic energy simulation)	► Tertiary	<i>Application of public domain or commercially available software that meets EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling, is validated according to the criteria in EN 15265:2007 Energy performance of buildings – Calculation of energy needs for space heating and cooling using dynamic methods – General criteria and validation procedures</i>	Minimum requirements for energy performance of buildings (RT I, 05.09.2012, 4), Section §17. Calculation Software [Energiatõhususe miinimumnõuded (RT I, 05.09.2012, 4), §17. Arvutustarkvara]	
		► Apartment blocks		Minimum requirements for energy performance of buildings (RT I, 05.09.2012, 4), Section §17. Calculation Software [Energiatõhususe miinimumnõuded (RT I, 05.09.2012, 4), §17. Arvutustarkvara]	
4b	A national software certification scheme used to accredit individuals carrying out modelling (dynamic energy simulation)	► Tertiary	<i>Not available</i>	Chartered specialist in energy performance of buildings (level 8), Estonian Qualifications Framework [Volitatud energiatõhususe spetsialist, tase 8, Eesti kvalifikatsiooniraamistiku (EKR)]	
		► Apartment blocks	<i>Not available</i>	Chartered specialist in energy performance of buildings (level 8), Estonian Qualifications Framework [Volitatud energiatõhususe spetsialist, tase 8, Eesti kvalifikatsiooniraamistiku (EKR)]	
4d	Guidance for calculating savings when using a spreadsheet-based approach, rather than software	► Tertiary	<i>EN 16212:2012 Energy Efficiency and Savings Calculation, Top-down and Bottom-up Methods (section 6)</i>		
		► Apartment blocks			
	A national certification scheme for individuals carrying out spreadsheet-	► Tertiary	<i>Not available</i>	Chartered specialist in energy performance of buildings (level 8), Estonian Qualifications Framework [Volitatud energiatõhususe spetsialist, tase 8, Eesti kvalifikatsiooniraamistiku (EKR)]	

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	based savings calculations (rather than using software)	► Apartment blocks	<i>Not available</i>	Chartered specialist in energy performance of buildings (level 8), Estonian Qualifications Framework [Volitatud energiatõhususe spetsialist, tase 8, Eesti kvalifikatsiooniraamistiku (EKR)]	
	A guide to carrying out dynamic energy simulation for residential buildings	n/a	<i>ISO 13790:2008 Energy performance of buildings -- Calculation of energy use for space heating and cooling</i>	EVS-EN ISO 13790:2008 Energy performance of buildings - Calculation of energy use for space heating and cooling	
4e	A source of inflation values	n/a	<i>European Central Bank's Harmonised Index of Consumer Prices</i> (https://www.ecb.europa.eu/stats/prices/hicp/html/index.en.html)	Statistics, Bank of Estonia >> Key Economic Indicators >> Price Indices [Statistika, Eesti Pank >> Majanduse põhinäitajad >> Hinnaindeksid]	
4f	Guidance for carrying out life-cycle cost analysis	n/a	<i>ISO 15686-5:2008 Buildings and constructed assets - Service-life planning - Part 5: Life-cycle costing</i>	The Total Concept method, Guidebook for Implementation and Quality Assurance (v 1.2 2015), Chapter 3: The economic principles of the Total Concept method	
4g	A list of generally accepted lifetimes for energy conservation measures/technologies	n/a	<i>EN 15459:2007 Energy performance of buildings – Economic evaluation procedure for energy systems in buildings (Annex A)</i>	The Total Concept method, Guidebook for Implementation and Quality Assurance (v 1.2 2015), Appendix 3. Examples of recommended economic lifetimes for different measures	
4c	Guidance for producing energy audit reports	n/a	<i>EN 16247-2 Energy audits – Part 2: Buildings (section 5.6)</i>	Residential: Guide for energy audits of residential buildings (2015), Section 14: The audit report preparation and presentation of the results [Korterelamute energiaauditite koostamise juhend (2015), 14: Auditi aruande koostamine ja tulemuste tutvustamine]	
Design, construction and verification					
5a	Guidance for preparing systems manuals - these include guidance on how to operate and maintain systems e.g for new equipment installed	n/a	<i>EN 13460:2009 Maintenance – Documents for maintenance</i>	EVS-EN 13460:2009 Maintenance - Documentation for maintenance	
Operations, maintenance and monitoring					
6a	Guidance for operating and maintaining new systems and equipment	n/a	<i>ISO 15331:2011 Criteria for design, management and control of maintenance services for buildings</i>	Procedure of documenting the construction process, preserving and handing over the documents and the maintenance guide (RT I, 09.09.2015, 3) [Ehitamise dokumenteerimisele, ehitusdokumentide säilitamisele ja üleandmisele esitatavad nõuded ning hooldusjuhendile, selle hoidmisele ja esitamisele esitatavad nõuded (RT I, 09.09.2015, 3)]	

FINLAND

Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	FINLAND
Baselining					
2a	Guidance for calculating accurate gross floor area (e.g. measuring from inside of walls, including all common areas, but excluding parking area)	► Tertiary	<i>EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling (section 3.2.6)</i>	SFS 5139 Building areas [SFS 5139 Rakennuksen pinta-alat]	
		► Apartment blocks		SFS 5139 Building areas [SFS 5139 Rakennuksen pinta-alat]	
2b	Guidance for recording occupancy (e.g. the number of people in a building and the time of day they are there)	n/a	<i>EN 16247-2 Energy audits buildings (Section 5.3.2 Information request)</i>		
2c	Guidance for collecting information on the building and its systems, perhaps as part of an energy audit e.g. details of air conditioning systems, lighting system, glazing	n/a	<i>EN 16247-2 Energy audits buildings Section 5.3 Collecting data, 5.3.2 Information request and Annex D</i>	176/2013 Environment Ministry's regulation of the building energy certificate, § 4 Clearing the characteristics of the building [176/2013 Ympäristöministeriön asetus rakennuksen energiatodistuksesta, § 4 Rakennuksen ominaisuuksien selvittäminen]	
2d	Guidance for extrapolating or consolidating data to a complete calendar year	n/a	<i>ISO 16346:2013 - Energy performance of buildings -- Assessment of overall energy performance (Section 8.2.2 Extrapolation to an integral number of years)</i>		
2e	Guidance for normalising data against relevant variables in order to compare energy performance under equivalent conditions e.g. baseline regression modelling	n/a	<i>ISO 50006:2014 - Energy management systems -- Measuring energy performance using energy baselines (EnB) and energy performance indicators (EnPI) -- General principles and guidance Annex D Normalising energy baselines using relevant variables</i>		

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Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	FINLAND
2f	A source of energy consumption benchmarks for different types of buildings	► Tertiary	<i>Buildings Performance Institute Europe's Data Hub for the Energy Performance of Buildings (see http://www.buildingsdata.eu/) .</i>	Motiva Audit Statistics >> Service sector specific consumptions [Motiva Tilastotietoa katselmuksista >> Palvelusektorin ominaiskulutuksia]	
		► Apartment blocks			
Savings calculations					
4a	Defining standards for energy modelling software (dynamic energy simulation)	► Tertiary	<i>Application of public domain or commercially available software that meets EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling, is validated according to the criteria in EN 15265:2007 Energy performance of buildings – Calculation of energy needs for space heating and cooling using dynamic methods – General criteria and validation procedures</i>	D3 of the Finnish Building Code of Finland, Ministry of the Environment, Energy performance of buildings Regulations and guidelines 2012 [D3 Suomen rakentamismääräyskokoelma, Ympäristöministeriö, Rakennetun ympäristön osasto, Rakennusten energiatehokkuus Määräykset ja ohjeet 2012]	
		► Apartment blocks		D3 of the Finnish Building Code of Finland, Ministry of the Environment, Energy performance of buildings Regulations and guidelines 2012 [D3 Suomen rakentamismääräyskokoelma, Ympäristöministeriö, Rakennetun ympäristön osasto, Rakennusten energiatehokkuus Määräykset ja ohjeet 2012]	
4b	A national software certification scheme used to accredit individuals carrying out modelling (dynamic energy simulation)	► Tertiary	<i>Not available</i>	Higher-level qualification for the energy certification expert [Ylemmän tason energiatodistuksen laatijapätevyys]	
		► Apartment blocks	<i>Not available</i>	Higher-level qualification for the energy certification expert [Ylemmän tason energiatodistuksen laatijapätevyys]	
4d	Guidance for calculating savings when using a spreadsheet-based approach, rather than software	► Tertiary	<i>EN 16212:2012 Energy Efficiency and Savings Calculation, Top-down and Bottom-up Methods (section 6)</i>		
		► Apartment blocks			
	A national certification scheme for individuals carrying out spreadsheet-	► Tertiary	<i>Not available</i>	Basic-level qualification for the energy certification expert [Vaativuudet perustason energiatodistuksen laatijapätevyys]	

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Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	FINLAND
	based savings calculations (rather than using software)	► Apartment blocks	<i>Not available</i>	Basic-level qualification for the energy certification expert [Vaatimukset perustason energiatodistuksen laatijapätevyys]	
	A guide to carrying out dynamic energy simulation for residential buildings	n/a	<i>ISO 13790:2008 Energy performance of buildings -- Calculation of energy use for space heating and cooling</i>	D3 of the Finnish Building Code of Finland, Ministry of the Environment, Energy performance of buildings Regulations and guidelines 2012 [D3 Suomen rakentamismääräyskokoelma, Ympäristöministeriö, Rakennetun ympäristön osasto, Rakennusten energiatehokkuus Määräykset ja ohjeet 2012]	
4e	A source of inflation values	n/a	<i>European Central Bank's Harmonised Index of Consumer Prices</i> (https://www.ecb.europa.eu/stats/prices/hicp/html/index.en.html)	Statistics Finland >> Statistics >> Prices and Costs >> Consumer Price Index [Tilastokeskus >> Tilastot >> Hinnat ja kustannukset >> Kuluttajahintaindeksi]	
4f	Guidance for carrying out life-cycle cost analysis	n/a	<i>ISO 15686-5:2008 Buildings and constructed assets - Service-life planning - Part 5: Life-cycle costing</i>		
4g	A list of generally accepted lifetimes for energy conservation measures/technologies	n/a	<i>EN 15459:2007 Energy performance of buildings – Economic evaluation procedure for energy systems in buildings (Annex A)</i>		
4c	Guidance for producing energy audit reports	n/a	<i>EN 16247-2 Energy audits – Part 2: Buildings (section 5.6)</i>		
Design, construction and verification					
5a	Guidance for preparing systems manuals - these include guidance on how to operate and maintain systems e.g for new equipment installed	n/a	<i>EN 13460:2009 Maintenance – Documents for maintenance</i>	National building code of Finland, A4 Maintenance manual for the care and use of buildings Regulations and guidelines 2000 [A4 Suomen rakentamismääräyskokoelma, Ympäristöministeriö, Rakennuksen käyttö- ja huolto-ohje, Määräykset ja ohjeet 2000]	
Operations, maintenance and monitoring					
6a	Guidance for operating and maintaining new systems and equipment	n/a	<i>ISO 15331:2011 Criteria for design, management and control of maintenance services for buildings</i>	National building code of Finland, A4 Maintenance manual for the care and use of buildings Regulations and guidelines 2000 [A4 Suomen rakentamismääräyskokoelma, Ympäristöministeriö, Rakennuksen käyttö- ja huolto-ohje, Määräykset ja ohjeet 2000]	

FRANCE

Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	FRANCE
Baselining					
2a	Guidance for calculating accurate gross floor area (e.g. measuring from inside of walls, including all common areas, but excluding parking area)	► Tertiary	<i>EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling (section 3.2.6)</i>	NF EN ISO 13790:2013 Energy performance of buildings – Calculation of energy use for space heating and cooling [NF EN ISO 13790 Septembre 2013 Performance énergétique des bâtiments - Calcul des besoins d'énergie pour le chauffage et le refroidissement des locaux]	
		► Apartment blocks		NF EN ISO 13790:2013 Energy performance of buildings – Calculation of energy use for space heating and cooling [NF EN ISO 13790 Septembre 2013 Performance énergétique des bâtiments - Calcul des besoins d'énergie pour le chauffage et le refroidissement des locaux]	
2b	Guidance for recording occupancy (e.g. the number of people in a building and the time of day they are there)	<i>n/a</i>	<i>EN 16247-2 Energy audits buildings (Section 5.3.2 Information request)</i>	NF EN 16247-2:2014 Energy audits Part 2: buildings, Section 5.3.2 Information request [NF EN 16247-2 Juillet 2014 Audits énergétiques - Partie 2 : bâtiments, 5.3.2]	
2c	Guidance for collecting information on the building and its systems, perhaps as part of an energy audit e.g. details of air conditioning systems, lighting system, glazing	<i>n/a</i>	<i>EN 16247-2 Energy audits buildings Section 5.3 Collecting data, 5.3.2 Information request and Annex D</i>	NF EN 16247-2:2014 Energy audits Part 2: buildings, Section 5.3 Collecting data, 5.3.2 Information request, Annex D [NF EN 16247-2 Juillet 2014 Audits énergétiques - Partie 2 : bâtiments, 5.3.2]	
2d	Guidance for extrapolating or consolidating data to a complete calendar year	<i>n/a</i>	<i>ISO 16346:2013 - Energy performance of buildings -- Assessment of overall energy performance (Section 8.2.2 Extrapolation to an integral number of years)</i>		
2e	Guidance for normalising data against relevant variables in order to compare energy performance under equivalent conditions e.g. baseline regression modelling	<i>n/a</i>	<i>ISO 50006:2014 - Energy management systems -- Measuring energy performance using energy baselines (EnB) and energy performance indicators (EnPI) -- General principles and guidance Annex D Normalising energy baselines using relevant variables</i>		

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Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	FRANCE
2f	A source of energy consumption benchmarks for different types of buildings	► Tertiary	<i>Buildings Performance Institute Europe’s Data Hub for the Energy Performance of Buildings (see http://www.buildingsdata.eu/) .</i>		
		► Apartment blocks			
Savings calculations					
4a	Defining standards for energy modelling software (dynamic energy simulation)	► Tertiary	<i>Application of public domain or commercially available software that meets EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling, is validated according to the criteria in EN 15265:2007 Energy performance of buildings – Calculation of energy needs for space heating and cooling using dynamic methods – General criteria and validation procedures</i>	Calculation method Th-BCE 2012 [Méthode de calcul Th-BCE 2012]	
		► Apartment blocks		Calculation method Th-BCE 2012 [Méthode de calcul Th-BCE 2012]	
4b	A national software certification scheme used to accredit individuals carrying out modelling (dynamic energy simulation)	► Tertiary	<i>Not available</i>		
		► Apartment blocks	<i>Not available</i>		
4d	Guidance for calculating savings when using a spreadsheet-based approach, rather than software	► Tertiary	<i>EN 16212:2012 Energy Efficiency and Savings Calculation, Top-down and Bottom-up Methods (section 6)</i>		
		► Apartment blocks			
	A national certification scheme for individuals carrying out spreadsheet-based savings calculations (rather than using software)	► Tertiary	<i>Not available</i>	DPE (Diagnostic de performance énergétique) professional certification with honors (all types of buildings) [Certification diagnostic de performance énergétique (DPE) avec mention, tous types de bâtiments]	
		► Apartment blocks	<i>Not available</i>	DPE (Diagnostic de performance énergétique) professional certification without mention (individual houses) [Certification au Diagnostic de Performance Energétique (DPE) sans mention, individuel]	

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Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	FRANCE
	A guide to carrying out dynamic energy simulation for residential buildings	n/a	<i>ISO 13790:2008 Energy performance of buildings -- Calculation of energy use for space heating and cooling</i>		
4e	A source of inflation values	n/a	<i>European Central Bank's Harmonised Index of Consumer Prices</i> (https://www.ecb.europa.eu/stats/prices/hicp/html/index.en.html)	National Institute of Statistics and Economic Studies (INSEE) >> Databases >> Statistical indices and series >> Macro-economic database (BDM) >> Prices and price indices [Institut national de la statistique et des études économiques (INSEE) >> Bases de données >> Indices et séries chronologiques >> Banque de données macro-économiques (BDM) >> Prix et indices de prix]	
4f	Guidance for carrying out life-cycle cost analysis	n/a	<i>ISO 15686-5:2008 Buildings and constructed assets - Service-life planning - Part 5: Life-cycle costing</i>		
4g	A list of generally accepted lifetimes for energy conservation measures/technologies	n/a	<i>EN 15459:2007 Energy performance of buildings – Economic evaluation procedure for energy systems in buildings (Annex A)</i>	NF EN 15459:2009 Energy performance of buildings – Economic evaluation procedure for energy systems in buildings (Annex A) [NF EN 15459:2009 Performance énergétique des bâtiments - Procédure d'évaluation économique des systèmes énergétiques des bâtiments, Annexe A]	
4c	Guidance for producing energy audit reports	n/a	<i>EN 16247-2 Energy audits – Part 2: Buildings (section 5.6)</i>	NF EN 16247-2:2014 Energy audits Part 2: buildings, Section 5.6 [NF EN 16247-2 Juillet 2014 Audits énergétiques - Partie 2 : bâtiments, 5.6]	
Design, construction and verification					
5a	Guidance for preparing systems manuals - these include guidance on how to operate and maintain systems e.g for new equipment installed	n/a	<i>EN 13460:2009 Maintenance – Documents for maintenance</i>	NF EN 13460:2009 Maintenance – Documents for maintenance [NF EN 13460 Octobre 2009 Maintenance - Documentation pour la maintenance]	
Operations, maintenance and monitoring					
6a	Guidance for operating and maintaining new systems and equipment	n/a	<i>ISO 15331:2011 Criteria for design, management and control of maintenance services for buildings</i>	NF EN 15331:2011 Criteria for design, management and control of maintenance services for buildings [NF EN 15331 Octobre 2011 Critères pour la conception, la gestion et le contrôle des services de maintenance dans les constructions]	

GERMANY

Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	GERMANY
Baselining					
2a	Guidance for calculating accurate gross floor area (e.g. measuring from inside of walls, including all common areas, but excluding parking area)	► Tertiary	<i>EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling (section 3.2.6)</i>	DIN 277 ground areas and volumes [DIN 277 Grundflächen und Rauminhalte]	
		► Apartment blocks		DIN 277 ground areas and volumes [DIN 277 Grundflächen und Rauminhalte]	
2b	Guidance for recording occupancy (e.g. the number of people in a building and the time of day they are there)	n/a	<i>EN 16247-2 Energy audits buildings (Section 5.3.2 Information request)</i>	DIN EN 16247-2:2014 Energy audits - Part 2: Buildings, Section 5.3.2 Information request [DIN EN 16247-2 Energieaudits - Teil 2: Gebäude, 5.3.2 Informationsbedarf]	
2c	Guidance for collecting information on the building and its systems, perhaps as part of an energy audit e.g. details of air conditioning systems, lighting system, glazing	n/a	<i>EN 16247-2 Energy audits buildings Section 5.3 Collecting data, 5.3.2 Information request and Annex D</i>	DIN EN 16247-2 Energy audits buildings, Section 5.3 Collecting data, 5.3.2 Information request and Annex D [DIN EN 16247-2 Energieaudits - Teil 2: Gebäude, 5.3 Datenerfassung, 5.3.2 Informationsbedarf, Anhang D]	
2d	Guidance for extrapolating or consolidating data to a complete calendar year	n/a	<i>ISO 16346:2013 - Energy performance of buildings -- Assessment of overall energy performance (Section 8.2.2 Extrapolation to an integral number of years)</i>	DIN V 18599 Energy efficiency of buildings - Calculation of the net, final and primary energy demand for heating, cooling, ventilation, domestic hot water and lighting [DIN V 18599 Energetische Bewertung von Gebäuden - Berechnung des Nutz-, End- und Primärenergiebedarfs für Heizung, Kühlung, Lüftung, Trinkwarmwasser und Beleuchtung]	
2e	Guidance for normalising data against relevant variables in order to compare energy performance under equivalent conditions e.g. baseline regression modelling	n/a	<i>ISO 50006:2014 - Energy management systems -- Measuring energy performance using energy baselines (EnB) and energy performance indicators (EnPI) -- General principles and guidance Annex D Normalising energy baselines using relevant variables</i>	DIN V 18599 Energy efficiency of buildings - Calculation of the net, final and primary energy demand for heating, cooling, ventilation, domestic hot water and lighting [DIN V 18599 Energetische Bewertung von Gebäuden - Berechnung des Nutz-, End- und Primärenergiebedarfs für Heizung, Kühlung, Lüftung, Trinkwarmwasser und Beleuchtung]	

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Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	GERMANY
2f	A source of energy consumption benchmarks for different types of buildings	► Tertiary	<i>Buildings Performance Institute Europe’s Data Hub for the Energy Performance of Buildings (see http://www.buildingsdata.eu/) .</i>	GEFMA fm.benchmarking report [GEFMA fm.benchmarking Bericht]	
		► Apartment blocks		GEFMA fm.benchmarking report [GEFMA fm.benchmarking Bericht]	
Savings calculations					
4a	Defining standards for energy modelling software (dynamic energy simulation)	► Tertiary	<i>Application of public domain or commercially available software that meets EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling, is validated according to the criteria in EN 15265:2007 Energy performance of buildings – Calculation of energy needs for space heating and cooling using dynamic methods – General criteria and validation procedures</i>	VDI 6020 Blatt 1 Requirements on methods of calculation to thermal and energy simulation of buildings and plants - Buildings [VDI 6020 Blatt 1 Anforderungen an Rechenverfahren zur Gebäude- und Anlagensimulation - Gebäudesimulation]	
		► Apartment blocks		VDI 6020 Blatt 1 Requirements on methods of calculation to thermal and energy simulation of buildings and plants - Buildings [VDI 6020 Blatt 1 Anforderungen an Rechenverfahren zur Gebäude- und Anlagensimulation - Gebäudesimulation]	
4b	A national software certification scheme used to accredit individuals carrying out modelling (dynamic energy simulation)	► Tertiary	Not available		
		► Apartment blocks	Not available		
4d	Guidance for calculating savings when using a spreadsheet-based approach, rather than software	► Tertiary	<i>EN 16212:2012 Energy Efficiency and Savings Calculation, Top-down and Bottom-up Methods (section 6)</i>	DIN EN 16212:2012 Energy Efficiency and Savings Calculation, Top-down and Bottom-up Methods, Section 6 - Bottom-up saving calculations [DIN EN 16212:2012 Energieeffizienz- und -einsparberechnung - Top-Down- und Bottom-Up-Methoden, 6 - Bottom-Up-Einsparberechnungen]	
		► Apartment blocks		DIN EN 16212:2012 Energy Efficiency and Savings Calculation, Top-down and Bottom-up Methods, Section 6 - Bottom-up saving calculations [DIN EN 16212:2012 Energieeffizienz- und -einsparberechnung - Top-Down- und Bottom-Up-Methoden, 6 - Bottom-Up-Einsparberechnungen]	

Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	GERMANY
	A national certification scheme for individuals carrying out spreadsheet-based savings calculations (rather than using software)	► Tertiary	<i>Not available</i>		
		► Apartment blocks	<i>Not available</i>		
	A guide to carrying out dynamic energy simulation for residential buildings	n/a	<i>ISO 13790:2008 Energy performance of buildings -- Calculation of energy use for space heating and cooling</i>	DIN EN ISO 13790:2008 Energy performance of buildings - Calculation of energy use for space heating and cooling [DIN EN ISO 13790 Energieeffizienz von Gebäuden - Berechnung des Energiebedarfs für Heizung und Kühlung]	
4e	A source of inflation values	n/a	<i>European Central Bank's Harmonised Index of Consumer Prices</i> (https://www.ecb.europa.eu/stats/prices/hicp/html/index.en.html)	Federal Statistical Office (Destatis) >> Facts and Figures >> National Economy & Environment >> Prices >> Consumer Price Indices [DESTATIS Statistisches Bundesamt >> Zahlen und Fakten >> Gesamtwirtschaft & Umwelt >> Preise >> Verbraucherpreisindizes]	
4f	Guidance for carrying out life-cycle cost analysis	n/a	<i>ISO 15686-5:2008 Buildings and constructed assets - Service-life planning - Part 5: Life-cycle costing</i>	GEFMA 220 – Life Cycle Costing in Facilities Management [GEFMA 220 - Lebenszykluskostenberechnung im FM]	
4g	A list of generally accepted lifetimes for energy conservation measures/technologies	n/a	<i>EN 15459:2007 Energy performance of buildings – Economic evaluation procedure for energy systems in buildings (Annex A)</i>	Lifetimes of building components for life cycle analysis according to the Sustainable Building Rating System (BNB) [Nutzungsdauern von Bauteilen für Lebenszyklusanalysen nach Bewertungssystem Nachhaltiges Bauen (BNB)]	
4c	Guidance for producing energy audit reports	n/a	<i>EN 16247-2 Energy audits – Part 2: Buildings (section 5.6)</i>	DIN EN 16247-2:2014 Energy audits - Part 2: Buildings, Section 5.6 Report [DIN EN 16247-2:2014 Energieaudits - Teil 2: Gebäude, 5.6 Bericht]	
Design, construction and verification					
5a	Guidance for preparing systems manuals - these include guidance on how to operate and maintain systems e.g for new equipment installed	n/a	<i>EN 13460:2009 Maintenance – Documents for maintenance</i>	DIN EN 13460:2009 Maintenance - Documentation for maintenance [DIN EN 13460:2009 Instandhaltung - Dokumente für die Instandhaltung]	
Operations, maintenance and monitoring					
6a	Guidance for operating and maintaining new systems and equipment	n/a	<i>ISO 15331:2011 Criteria for design, management and control of maintenance services for buildings</i>	VDI 3810 Operation and maintenance of building installations [VDI 3810 Betreiben und Instandhalten von gebäudetechnischen Anlagen]	

GREECE

Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	GREECE
Baselining					
2a	Guidance for calculating accurate gross floor area (e.g. measuring from inside of walls, including all common areas, but excluding parking area)	► Tertiary	<i>EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling (section 3.2.6)</i>	TOTEE 20701-1/2010 Detailed national parameters specifications for the calculation of the energy performance of buildings and issue of the Energy Performance Certificate, Sect. 3.1 Description of the building geometry [TOTEE 20701-1/2010 Αναλυτικές εθνικές προδιαγραφές παραμέτρων για τον υπολογισμό της ενεργειακής απόδοσης κτιρίων και την έκδοση του πιστοποιητικού ενεργειακής απόδοσης, 3.1 Περιγραφή της γεωμετρίας του κτιρίου]	
		► Apartment blocks		TOTEE 20701-1/2010 Detailed national parameters specifications for the calculation of the energy performance of buildings and issue of the Energy Performance Certificate, Sect. 3.1 Description of the building geometry [TOTEE 20701-1/2010 Αναλυτικές εθνικές προδιαγραφές παραμέτρων για τον υπολογισμό της ενεργειακής απόδοσης κτιρίων και την έκδοση του πιστοποιητικού ενεργειακής απόδοσης, 3.1 Περιγραφή της γεωμετρίας του κτιρίου]	
2b	Guidance for recording occupancy (e.g. the number of people in a building and the time of day they are there)	n/a	<i>EN 16247-2 Energy audits buildings (Section 5.3.2 Information request)</i>	ΕΛΟΤ EN 16247-2 Energy audits – Part 2: Buildings (Section 5.3.2 Information request) [ΕΛΟΤ EN 16247-2 Ενεργειακές επιθεωρήσεις - Μέρος 2: Κτίρια, 5.3.2]	
2c	Guidance for collecting information on the building and its systems, perhaps as part of an energy audit e.g. details of air conditioning systems, lighting system, glazing	n/a	<i>EN 16247-2 Energy audits buildings Section 5.3 Collecting data, 5.3.2 Information request and Annex D</i>	TOTEE 20701-4/2010, Instructions and forms of energy inspections of buildings, heating systems and air conditioning systems [TOTEE 20701-4/2010, Οδηγίες και έντυπα ενεργειακών επιθεωρήσεων κτιρίων, συστημάτων θέρμανσης και συστημάτων κλιματισμού]	
2d	Guidance for extrapolating or consolidating data to a complete calendar year	n/a	<i>ISO 16346:2013 - Energy performance of buildings -- Assessment of overall energy performance (Section 8.2.2 Extrapolation to an integral number of years)</i>	TOTEE 20701-4/2010, Instructions and forms of energy inspections of buildings, heating systems and air conditioning systems, Section 2.1.6, table 3b [TOTEE 20701-4/2010, Οδηγίες και έντυπα ενεργειακών επιθεωρήσεων κτιρίων, συστημάτων θέρμανσης και συστημάτων κλιματισμού, 2.1.6, 3b]	

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2e	Guidance for normalising data against relevant variables in order to compare energy performance under equivalent conditions e.g. baseline regression modelling	n/a	ISO 50006:2014 - <i>Energy management systems -- Measuring energy performance using energy baselines (EnB) and energy performance indicators (EnPI) -- General principles and guidance Annex D Normalising energy baselines using relevant variables</i>	TOTEE 20701-1/2010 Detailed national parameters specifications for the calculation of the energy performance of buildings and issue of the Energy Performance Certificate [TOTEE 20701-1/2010 Αναλυτικές εθνικές προδιαγραφές παραμέτρων για τον υπολογισμό της ενεργειακής απόδοσης κτιρίων και την έκδοση του πιστοποιητικού ενεργειακής απόδοσης]	
2f	A source of energy consumption benchmarks for different types of buildings	► Tertiary	Buildings Performance Institute Europe’s Data Hub for the Energy Performance of Buildings (see http://www.buildingsdata.eu/) .	Ministry of Environment & Energy, Energy Audit Statistics Results [Υπουργείο Περιβάλλοντος και Ενέργειας, Ενεργειακι Επιθεώρηση, Στατιστικά Αποτελέσματα]	
		► Apartment blocks		Ministry of Environment & Energy, Energy Audit Statistics Results [Υπουργείο Περιβάλλοντος και Ενέργειας, Ενεργειακι Επιθεώρηση, Στατιστικά Αποτελέσματα]	
Savings calculations					
4a	Defining standards for energy modelling software (dynamic energy simulation)	► Tertiary	Application of public domain or commercially available software that meets EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling, is validated according to the criteria in EN 15265:2007 Energy performance of buildings – Calculation of energy needs for space heating and cooling using dynamic methods – General criteria and validation procedures		
		► Apartment blocks			
4b	A national software certification scheme used to accredit individuals carrying out modelling (dynamic energy simulation)	► Tertiary	Not available		
		► Apartment blocks	Not available		
4d	Guidance for calculating savings when using a spreadsheet-based approach, rather than software	► Tertiary	EN 16212:2012 Energy Efficiency and Savings Calculation, Top-down and Bottom-up Methods (section 6)		
		► Apartment blocks			

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	A national certification scheme for individuals carrying out spreadsheet-based savings calculations (rather than using software)	► Tertiary	<i>Not available</i>		
		► Apartment blocks	<i>Not available</i>		
	A guide to carrying out dynamic energy simulation for residential buildings	n/a	<i>ISO 13790:2008 Energy performance of buildings -- Calculation of energy use for space heating and cooling</i>		
4e	A source of inflation values	n/a	<i>European Central Bank's Harmonised Index of Consumer Prices</i> (https://www.ecb.europa.eu/stats/prices/hicp/html/index.en.html)	Hellenic Statistical Authority (ELSTAT) >> Economy, indices [Ελληνική Στατιστική Αρχή (ΕΛ.ΣΤΑΤ), Οικονομία, Δείκτες]	
4f	Guidance for carrying out life-cycle cost analysis	n/a	<i>ISO 15686-5:2008 Buildings and constructed assets - Service-life planning - Part 5: Life-cycle costing</i>		
4g	A list of generally accepted lifetimes for energy conservation measures/technologies	n/a	<i>EN 15459:2007 Energy performance of buildings – Economic evaluation procedure for energy systems in buildings (Annex A)</i>		
4c	Guidance for producing energy audit reports	n/a	<i>EN 16247-2 Energy audits – Part 2: Buildings (section 5.6)</i>	ΕΛΟΤ EN 16247-2 Energy audits – Part 2: Buildings [ΕΛΟΤ EN 16247-2 Ενεργειακές επιθεωρήσεις - Μέρος 2: Κτίρια]	
Design, construction and verification					
5a	Guidance for preparing systems manuals - these include guidance on how to operate and maintain systems e.g for new equipment installed	n/a	<i>EN 13460:2009 Maintenance – Documents for maintenance</i>		
Operations, maintenance and monitoring					
6a	Guidance for operating and maintaining new systems and equipment	n/a	<i>ISO 15331:2011 Criteria for design, management and control of maintenance services for buildings</i>		

HUNGARY

Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	HUNGARY
Baselining					
2a	Guidance for calculating accurate gross floor area (e.g. measuring from inside of walls, including all common areas, but excluding parking area)	► Tertiary	<i>EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling (section 3.2.6)</i>	7/2006. (V. 24.) TNM Regulation determining the energy characteristics of buildings [7/2006. (V. 24.) TNM rendelet az épületek energetikai jellemzőinek meghatározásáról]	
		► Apartment blocks		7/2006. (V. 24.) TNM Regulation determining the energy characteristics of buildings [7/2006. (V. 24.) TNM rendelet az épületek energetikai jellemzőinek meghatározásáról]	
2b	Guidance for recording occupancy (e.g. the number of people in a building and the time of day they are there)	n/a	<i>EN 16247-2 Energy audits buildings (Section 5.3.2 Information request)</i>		
2c	Guidance for collecting information on the building and its systems, perhaps as part of an energy audit e.g. details of air conditioning systems, lighting system, glazing	n/a	<i>EN 16247-2 Energy audits buildings Section 5.3 Collecting data, 5.3.2 Information request and Annex D</i>	MSZ EN 16247-2:2014 Energy audits. Part 2: Buildings (Section 5.3 Collecting data, 5.3.2 Information request and Annex D) [MSZ EN 16247-2:2014 Energiaauditok. 2. rész: Épületek (5.3, 5.3.2, D melléklet)]	
2d	Guidance for extrapolating or consolidating data to a complete calendar year	n/a	<i>ISO 16346:2013 - Energy performance of buildings -- Assessment of overall energy performance (Section 8.2.2 Extrapolation to an integral number of years)</i>		
2e	Guidance for normalising data against relevant variables in order to compare energy performance under equivalent conditions e.g. baseline regression modelling	n/a	<i>ISO 50006:2014 - Energy management systems -- Measuring energy performance using energy baselines (EnB) and energy performance indicators (EnPI) -- General principles and guidance Annex D Normalising energy baselines using relevant variables</i>		

Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	HUNGARY
2f	A source of energy consumption benchmarks for different types of buildings	► Tertiary ► Apartment blocks	<i>Buildings Performance Institute Europe's Data Hub for the Energy Performance of Buildings (see http://www.buildingsdata.eu/) .</i>	Ministry of National Development: National Building Energy Performance Strategy 2015, Chapter 3.2 [Nemzeti Fejlesztési Minisztérium, Nemzeti Épületenergetikai Stratégia 2015, 3.2 fejezet]	
Savings calculations					
4a	Defining standards for energy modelling software (dynamic energy simulation)	► Tertiary ► Apartment blocks	<i>Application of public domain or commercially available software that meets EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling, is validated according to the criteria in EN 15265:2007 Energy performance of buildings – Calculation of energy needs for space heating and cooling using dynamic methods – General criteria and validation procedures</i>	MSZ EN ISO 13790:2008 Energy performance of buildings. Calculation of energy use for space heating and cooling [MSZ EN ISO 13790:2008 Épületek energetikai teljesítőképessége. A fűtési és hűtési energiaigény számítása] MSZ EN 15265:2008 Energy performance of buildings. Calculation of energy needs for space heating and cooling using dynamic methods. General criteria and validation procedures [MSZ EN 15265:2008 Épületek energetikai teljesítőképessége. Helyiségek fűtési és hűtési energiaigényének kiszámítása dinamikai módszerekkel. Általános feltételek és jóváhagyási eljárások] MSZ EN ISO 13790:2008 Energy performance of buildings. Calculation of energy use for space heating and cooling [MSZ EN ISO 13790:2008 Épületek energetikai teljesítőképessége. A fűtési és hűtési energiaigény számítása] MSZ EN 15265:2008 Energy performance of buildings. Calculation of energy needs for space heating and cooling using dynamic methods. General criteria and validation procedures [MSZ EN 15265:2008 Épületek energetikai teljesítőképessége. Helyiségek fűtési és hűtési energiaigényének kiszámítása dinamikai módszerekkel. Általános feltételek és jóváhagyási eljárások]	
4b	A national software certification scheme used to accredit individuals carrying out modelling (dynamic energy simulation)	► Tertiary ► Apartment blocks	<i>Not available</i> <i>Not available</i>		

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Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	HUNGARY
4d	Guidance for calculating savings when using a spreadsheet-based approach, rather than software	► Tertiary	<i>EN 16212:2012 Energy Efficiency and Savings Calculation, Top-down and Bottom-up Methods (section 6)</i>	MSZ EN 16212:2013 Energiahatékonyság és megtakarítás, felülről lefelé és lentől felfelé módszerek [MSZ EN 16212:2013 Energy Efficiency and Savings Calculation, Top-down and Bottom-up Methods]	
		► Apartment blocks		MSZ EN 16212:2013 Energiahatékonyság és megtakarítás, felülről lefelé és lentől felfelé módszerek [MSZ EN 16212:2013 Energy Efficiency and Savings Calculation, Top-down and Bottom-up Methods]	
	A national certification scheme for individuals carrying out spreadsheet-based savings calculations (rather than using software)	► Tertiary	<i>Not available</i>		
		► Apartment blocks	<i>Not available</i>		
	A guide to carrying out dynamic energy simulation for residential buildings	n/a	<i>ISO 13790:2008 Energy performance of buildings -- Calculation of energy use for space heating and cooling</i>	MSZ EN ISO 13790:2008 Energy performance of buildings. Calculation of energy use for space heating and cooling [MSZ EN ISO 13790:2008 Épületek energetikai teljesítőképessége. A fűtési és hűtési energiaigény számítása]	
4e	A source of inflation values	n/a	<i>European Central Bank's Harmonised Index of Consumer Prices</i> (https://www.ecb.europa.eu/stats/prices/hicp/html/index.en.html)	Hungarian Central Statistical Office >> Key figures >> Consumer price index [Központi Statisztikai Hivatal >> Fontosabb adatok >> Fogyasztói árindex]	
4f	Guidance for carrying out life-cycle cost analysis	n/a	<i>ISO 15686-5:2008 Buildings and constructed assets - Service-life planning - Part 5: Life-cycle costing</i>		
4g	A list of generally accepted lifetimes for energy conservation measures/technologies	n/a	<i>EN 15459:2007 Energy performance of buildings – Economic evaluation procedure for energy systems in buildings (Annex A)</i>	MSZ EN 15459:2008 Energy performance of buildings. Economic evaluation procedure for energy systems in buildings (Annex A) [MSZ EN 15459:2008 Épületek energetikai teljesítőképessége. Épületek energetikai rendszereinek gazdaságossági értékelési eljárása (A melléklet)]	
4c	Guidance for producing energy audit reports	n/a	<i>EN 16247-2 Energy audits – Part 2: Buildings (section 5.6)</i>	MSZ EN 16247-2:2014 Energy audits. Part 2: Buildings (Section 5.6) [MSZ EN 16247-2:2014 Energiaauditok. 2. rész: Épületek (5.6)]	

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Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	HUNGARY
Design, construction and verification					
5a	Guidance for preparing systems manuals - these include guidance on how to operate and maintain systems e.g for new equipment installed	n/a	<i>EN 13460:2009 Maintenance – Documents for maintenance</i>	MSZ EN 13460:2009 Maintenance. Documentation for maintenance [MSZ EN 13460:2009 Karbantartás. Karbantartási dokumentumok]	
Operations, maintenance and monitoring					
6a	Guidance for operating and maintaining new systems and equipment	n/a	<i>ISO 15331:2011 Criteria for design, management and control of maintenance services for buildings</i>	MSZ EN 15331:2012 Criteria for design, management and control of maintenance services for buildings [MSZ EN 15331:2012 Épületkarbantartás tervezési, irányítási és ellenőrzési kritériumai]	

IRELAND

Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	IRELAND
Baselining					
2a	Guidance for calculating accurate gross floor area (e.g. measuring from inside of walls, including all common areas, but excluding parking area)	► Tertiary	<i>EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling (section 3.2.6)</i>	Non-domestic Energy Assessment Procedure (NEAP) Modelling Guide & SBEM Technical Manual (version 3.5.a, 2010, Section 6.6 – Measurement and other conventions, Table 10)	
		► Apartment blocks		Dwelling Energy Assessment Procedure (DEAP) Manual (Version 3.2.1, Section 1 – Dwelling dimensions)	
2b	Guidance for recording occupancy (e.g. the number of people in a building and the time of day they are there)	n/a	<i>EN 16247-2 Energy audits buildings (Section 5.3.2 Information request)</i>	All buildings: EN 16247-2 Energy audits buildings (Section 5.3.2 Information request) Public buildings: Methodology for the production of Display Energy Certificates (DEC) (Sections 4.2.7 and 3.4.2)	
2c	Guidance for collecting information on the building and its systems, perhaps as part of an energy audit e.g. details of air conditioning systems, lighting system, glazing	n/a	<i>EN 16247-2 Energy audits buildings Section 5.3 Collecting data, 5.3.2 Information request and Annex D</i>	All buildings: I.S. EN 16247-2:2014 Energy Audits - Part 2: Buildings Tertiary: Non-Domestic Energy Assessment Procedure (NEAP) Survey Guide Residential: Dwelling Energy Assessment Procedure (DEAP) Survey Guide	
2d	Guidance for extrapolating or consolidating data to a complete calendar year	n/a	<i>ISO 16346:2013 - Energy performance of buildings -- Assessment of overall energy performance (Section 8.2.2 Extrapolation to an integral number of years)</i>	Public buildings: Methodology for the production of Display Energy Certificates (DEC) (2013, Section 3.3.3 – Energy measurement periods)	
2e	Guidance for normalising data against relevant variables in order to compare energy performance under equivalent conditions e.g. baseline regression modelling	n/a	<i>ISO 50006:2014 - Energy management systems -- Measuring energy performance using energy baselines (EnB) and energy performance indicators (EnPI) -- General principles and guidance Annex D Normalising energy baselines using relevant variables</i>	CIBSE Guide F: Energy Efficiency in Buildings (Section 19)	

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Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	IRELAND
2f	A source of energy consumption benchmarks for different types of buildings	► Tertiary	<i>Buildings Performance Institute Europe’s Data Hub for the Energy Performance of Buildings (see http://www.buildingsdata.eu/) .</i>	CIBSE TM46 Energy Benchmarks	
		► Apartment blocks		SEAI Buildings Energy Ratings research tool (asset ratings database)	
Savings calculations					
4a	Defining standards for energy modelling software (dynamic energy simulation)	► Tertiary	<i>Application of public domain or commercially available software that meets EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling, is validated according to the criteria in EN 15265:2007 Energy performance of buildings – Calculation of energy needs for space heating and cooling using dynamic methods – General criteria and validation procedures</i>	The Irish approval scheme and validation procedure of nondomestic building energy calculation software (SEAI Approval Scheme)	
		► Apartment blocks		I.S. EN ISO 13790:2008 Energy Performance of Buildings - Calculation of Energy use for Space Heating and Cooling I.S. EN 15265:2007 Energy Performance of Buildings - Calculation of Energy Needs for Space Heating and Cooling Using Dynamic Methods - General Criteria and Validation Procedures	
4b	A national software certification scheme used to accredit individuals carrying out modelling (dynamic energy simulation)	► Tertiary	<i>Not available</i>		
		► Apartment blocks	<i>Not available</i>		
4d	Guidance for calculating savings when using a spreadsheet-based approach, rather than software	► Tertiary	<i>EN 16212:2012 Energy Efficiency and Savings Calculation, Top-down and Bottom-up Methods (section 6)</i>	I.S. EN 16212:2012 Energy Efficiency and Savings Calculation, Top-down and Bottom-up Methods	
		► Apartment blocks		I.S. EN 16212:2012 Energy Efficiency and Savings Calculation, Top-down and Bottom-up Methods	
	A national certification scheme for individuals carrying out spreadsheet-	► Tertiary	<i>Not available</i>		

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	based savings calculations (rather than using software)	► Apartment blocks	<i>Not available</i>		
	A guide to carrying out dynamic energy simulation for residential buildings	n/a	<i>ISO 13790:2008 Energy performance of buildings -- Calculation of energy use for space heating and cooling</i>	I.S. EN ISO 13790:2008 Energy Performance of Buildings - Calculation of Energy use for Space Heating and Cooling	
4e	A source of inflation values	n/a	<i>European Central Bank's Harmonised Index of Consumer Prices (https://www.ecb.europa.eu/stats/prices/hicp/html/index.en.html)</i>	Department of Public Expenditure and Reform >> Project Discount and Inflation Rates	
4f	Guidance for carrying out life-cycle cost analysis	n/a	<i>ISO 15686-5:2008 Buildings and constructed assets - Service-life planning - Part 5: Life-cycle costing</i>	UK Office of Government Commerce (OGC), Achieving Excellence Procurement Guides, 07 Whole-life costing and cost management	
4g	A list of generally accepted lifetimes for energy conservation measures/technologies	n/a	<i>EN 15459:2007 Energy performance of buildings – Economic evaluation procedure for energy systems in buildings (Annex A)</i>	I.S. EN 15459:2007 Energy Performance of Buildings - Economic Evaluation Procedure for Energy Systems in Buildings	
4c	Guidance for producing energy audit reports	n/a	<i>EN 16247-2 Energy audits – Part 2: Buildings (section 5.6)</i>	I.S. EN 16247-2:2014 Energy Audits - Part 2: Buildings	
Design, construction and verification					
5a	Guidance for preparing systems manuals - these include guidance on how to operate and maintain systems e.g for new equipment installed	n/a	<i>EN 13460:2009 Maintenance – Documents for maintenance</i>	IS 399 Energy Efficient Design Management	
Operations, maintenance and monitoring					
6a	Guidance for operating and maintaining new systems and equipment	n/a	<i>ISO 15331:2011 Criteria for design, management and control of maintenance services for buildings</i>	I.S. EN 15331:2011 Criteria for Design, Management and Control of Maintenance Services for Buildings	

ITALY

Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	ITALY
Baselining					
2a	Guidance for calculating accurate gross floor area (e.g. measuring from inside of walls, including all common areas, but excluding parking area)	► Tertiary	<i>EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling (section 3.2.6)</i>	UNI/TS 11300-1: 2014 Energy performance of buildings - Part 1: Determination of building thermal energy demand for heating and air conditioning [UNI/TS 11300-1:2014 Prestazioni energetiche degli edifici - Parte 1: Determinazione del fabbisogno di energia termica dell'edificio per la climatizzazione estiva ed invernale]	
		► Apartment blocks		UNI/TS 11300-1: 2014 Energy performance of buildings - Part 1: Determination of building thermal energy demand for heating and air conditioning [UNI/TS 11300-1:2014 Prestazioni energetiche degli edifici - Parte 1: Determinazione del fabbisogno di energia termica dell'edificio per la climatizzazione estiva ed invernale]	
2b	Guidance for recording occupancy (e.g. the number of people in a building and the time of day they are there)	n/a	<i>EN 16247-2 Energy audits buildings (Section 5.3.2 Information request)</i>	UNI CEI EN 16247-2:2014 Energy audits buildings (Section 5.3.2 Information request) [UNI CEI EN 16247-2:2014 Diagnosi energetiche - Parte 2: Edifici, 5.3.2]	
2c	Guidance for collecting information on the building and its systems, perhaps as part of an energy audit e.g. details of air conditioning systems, lighting system, glazing	n/a	<i>EN 16247-2 Energy audits buildings Section 5.3 Collecting data, 5.3.2 Information request and Annex D</i>	Definition of a methodology for energy audits in residential and tertiary use buildings (ENEA, 2011) [Definizione di una metodologia per l'audit energetico negli edifici ad uso residenziale e terziario (ENEA, 2011)]	
2d	Guidance for extrapolating or consolidating data to a complete calendar year	n/a	<i>ISO 16346:2013 - Energy performance of buildings -- Assessment of overall energy performance (Section 8.2.2 Extrapolation to an integral number of years)</i>		
2e	Guidance for normalising data against relevant variables in order to compare energy performance under equivalent conditions e.g. baseline regression modelling	n/a	<i>ISO 50006:2014 - Energy management systems -- Measuring energy performance using energy baselines (EnB) and energy performance indicators (EnPI) -- General principles and guidance Annex D Normalising energy baselines using relevant variables</i>	ISO 50006:2014 - Energy management systems -- Measuring energy performance using energy baselines (EnB) and energy performance indicators (EnPI) -- General principles and guidance, Annex D Normalising energy baselines using relevant variables [UNI ISO 50006:2015 Sistemi di gestione dell'energia - Misurazione della prestazione energetica utilizzando il consumo di riferimento (Baseline - EnB) e gli indicatori di prestazione energetica (EnPI) - Principi generali e linee guida]	

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Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	ITALY
2f	A source of energy consumption benchmarks for different types of buildings	► Tertiary	<i>Buildings Performance Institute Europe’s Data Hub for the Energy Performance of Buildings (see http://www.buildingsdata.eu/) .</i>		
		► Apartment blocks			
Savings calculations					
4a	Defining standards for energy modelling software (dynamic energy simulation)	► Tertiary	<i>Application of public domain or commercially available software that meets EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling, is validated according to the criteria in EN 15265:2007 Energy performance of buildings – Calculation of energy needs for space heating and cooling using dynamic methods – General criteria and validation procedures</i>	UNI EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling [UNI EN ISO 13790:2008 Prestazione energetica degli edifici - Calcolo del fabbisogno di energia per il riscaldamento e il raffrescamento]	
		► Apartment blocks		EN 15265:2007 Energy performance of buildings – Calculation of energy needs for space heating and cooling using dynamic methods – General criteria and validation procedures [UNI EN 15265:2008 Prestazione energetica degli edifici - Calcolo del fabbisogno di energia per il riscaldamento e il raffrescamento degli ambienti mediante metodi dinamici - Criteri generali e procedimenti di validazione]	UNI EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling [UNI EN ISO 13790:2008 Prestazione energetica degli edifici - Calcolo del fabbisogno di energia per il riscaldamento e il raffrescamento]
4b	A national software certification scheme used to accredit individuals carrying out modelling (dynamic energy simulation)	► Tertiary	Not available		
		► Apartment blocks	Not available		

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Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	ITALY
4d	Guidance for calculating savings when using a spreadsheet-based approach, rather than software	► Tertiary	<i>EN 16212:2012 Energy Efficiency and Savings Calculation, Top-down and Bottom-up Methods (section 6)</i>	EN 16212:2012 Energy Efficiency and Savings Calculation, Top-down and Bottom-up Methods (section 6) [UNI CEI EN 16212:2012 Calcoli dei risparmi e dell'efficienza energetica - Metodi top-down (discendente) e bottom-up (ascendente), 6]	
		► Apartment blocks		EN 16212:2012 Energy Efficiency and Savings Calculation, Top-down and Bottom-up Methods (section 6) [UNI CEI EN 16212:2012 Calcoli dei risparmi e dell'efficienza energetica - Metodi top-down (discendente) e bottom-up (ascendente), 6]	
	A national certification scheme for individuals carrying out spreadsheet-based savings calculations (rather than using software)	► Tertiary	<i>Not available</i>	Expert in Energy Management accreditation scheme for compliance with UNI CEI 11339:2009 [Schema di certificazione e accreditamento per la conformità alla norma UNI CEI 11339:2009 in materia di Esperti in Gestione dell'Energia (EGE)]	
		► Apartment blocks	<i>Not available</i>	Expert in Energy Management accreditation scheme for compliance with UNI CEI 11339:2009 [Schema di certificazione e accreditamento per la conformità alla norma UNI CEI 11339:2009 in materia di Esperti in Gestione dell'Energia (EGE)]	
	A guide to carrying out dynamic energy simulation for residential buildings	n/a	<i>ISO 13790:2008 Energy performance of buildings -- Calculation of energy use for space heating and cooling</i>	ISO 13790:2008 Energy performance of buildings -- Calculation of energy use for space heating and cooling [UNI EN ISO 13790:2008 Prestazione energetica degli edifici - Calcolo del fabbisogno di energia per il riscaldamento e il raffrescamento]	
4e	A source of inflation values	n/a	<i>European Central Bank's Harmonised Index of Consumer Prices</i> (https://www.ecb.europa.eu/stats/prices/hicp/html/index.en.html)	The National Institute for Statistics (ISTAT) >> Consumer price indices [L'Istituto nazionale di statistica (ISTAT) >> Indice dei prezzi al consumo]	
4f	Guidance for carrying out life-cycle cost analysis	n/a	<i>ISO 15686-5:2008 Buildings and constructed assets - Service-life planning - Part 5: Life-cycle costing</i>	UNI EN 15459:2008 Energy performance of buildings - Economic evaluation procedure for energy systems in buildings [UNI EN 15459:2008 Prestazione energetica degli edifici - Procedura di valutazione economica dei sistemi energetici degli edifici]	
4g	A list of generally accepted lifetimes for energy conservation measures/technologies	n/a	<i>EN 15459:2007 Energy performance of buildings – Economic evaluation procedure for energy systems in buildings (Annex A)</i>	UNI EN 15459:2008 Energy performance of buildings - Economic evaluation procedure for energy systems in buildings, Annex A [UNI EN 15459:2008 Prestazione energetica degli edifici - Procedura di valutazione economica dei sistemi energetici degli edifici, Allegato A]	
4c	Guidance for producing energy audit reports	n/a	<i>EN 16247-2 Energy audits – Part 2: Buildings (section 5.6)</i>	UNI CEI EN 16247-2:2014 Energy audits – Part 2: Buildings (section 5.6) [UNI CEI EN 16247-2:2014 Diagnosi energetiche - Parte 2: Edifici, 5.6]	

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Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	ITALY
Design, construction and verification					
5a	Guidance for preparing systems manuals - these include guidance on how to operate and maintain systems e.g for new equipment installed	n/a	<i>EN 13460:2009 Maintenance – Documents for maintenance</i>	UNI EN 13460:2009 Maintenance – Documents for maintenance [UNI EN 13460:2009 Manutenzione - Documentazione per la manutenzione]	
Operations, maintenance and monitoring					
6a	Guidance for operating and maintaining new systems and equipment	n/a	<i>ISO 15331:2011 Criteria for design, management and control of maintenance services for buildings</i>	UNI EN 15331:2011 Criteria for design, management and control of maintenance services for buildings [UNI EN 15331:2011 Criteri di progettazione, gestione e controllo dei servizi di manutenzione degli immobili]	

LATVIA

Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	LATVIA
Baselining					
2a	Guidance for calculating accurate gross floor area (e.g. measuring from inside of walls, including all common areas, but excluding parking area)	► Tertiary	<i>EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling (section 3.2.6)</i>	Cabinet of Ministers Regulation No. 331 (30.06.2015): Regulations on Latvian Construction standard LBN 208-15 "Public Buildings", Section 2.2 Building intensity and floor area, Point 13 [Ministru kabineta noteikumi Nr. 331 (30.06.2015): Noteikumi par Latvijas būvnormatīvu LBN 208-15 "Publiskas būves", 2.2. Apbūves intensitāte un stāva platība]	
		► Apartment blocks		Cabinet of Ministers Regulation No. 340 (30.06.2016): Regulations on Latvian Construction Standard LBN 211-15 "Residential buildings", Section 2.3. area [Ministru kabineta noteikumi Nr. 340 (30.06.2015): Noteikumi par Latvijas būvnormatīvu LBN 211-15 "Dzīvojamās ēkas", 2.3 Platība]	
2b	Guidance for recording occupancy (e.g. the number of people in a building and the time of day they are there)	n/a	<i>EN 16247-2 Energy audits buildings (Section 5.3.2 Information request)</i>	Cabinet of Ministers Regulation No. 348 (25.06.2013): Methodology for Calculating the Energy Performance of Buildings, Section 5.7.3 Internal heat generation elements, paragraph 99; Annex 4 [Ministru kabineta noteikumi Nr. 348 (25.06.2013): Ēkas energoefektivitātes aprēķina metode, 5.7.3 Iekšējo siltuma ieguvumu elementi, 99, 4.pielikums]	
2c	Guidance for collecting information on the building and its systems, perhaps as part of an energy audit e.g. details of air conditioning systems, lighting system, glazing	n/a	<i>EN 16247-2 Energy audits buildings Section 5.3 Collecting data, 5.3.2 Information request and Annex D</i>	LVS EN 16247-2:2015 Energy audits buildings (Section 5.3 Collecting data, 5.3.2 Information request and Annex D) [LVS EN 16247-2:2015 Energoaudits. 2.daļa: Ēkas, 5.3, 5.3.2, pielikums D]	
2d	Guidance for extrapolating or consolidating data to a complete calendar year	n/a	<i>ISO 16346:2013 - Energy performance of buildings -- Assessment of overall energy performance (Section 8.2.2 Extrapolation to an integral number of years)</i>	Cabinet of Ministers Regulation No. 348 (25.06.2013): Methodology for Calculating the Energy Performance of Buildings, Section 4.2 Data acquisition and correction (extrapolation) [Ministru kabineta noteikumi Nr. 348 (25.06.2013): Ēkas energoefektivitātes aprēķina metode, 4.2. Datu iegūšana un koriģēšana (ekstrapolācija)]	
2e	Guidance for normalising data against relevant variables in order to compare energy performance under equivalent conditions e.g. baseline regression modelling	n/a	<i>ISO 50006:2014 - Energy management systems -- Measuring energy performance using energy baselines (EnB) and energy performance indicators (EnPI) -- General principles and guidance Annex D Normalising energy baselines using relevant variables</i>		

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Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	LATVIA
2f	A source of energy consumption benchmarks for different types of buildings	► Tertiary	<i>Buildings Performance Institute Europe's Data Hub for the Energy Performance of Buildings (see http://www.buildingsdata.eu/) .</i>	Ministry of Economics website >> Sectoral policy >> Housing >> Research statistics [Ekonomikas Ministrijas mājas lapā >> Nozares politika >> Mājokļi >> Pētījumi, statistika]	
		► Apartment blocks		Ministry of Economics website >> Sectoral policy >> Housing >> Research statistics [Ekonomikas Ministrijas mājas lapā >> Nozares politika >> Mājokļi >> Pētījumi, statistika]	
Savings calculations					
4a	Defining standards for energy modelling software (dynamic energy simulation)	► Tertiary	<i>Application of public domain or commercially available software that meets EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling, is validated according to the criteria in EN 15265:2007 Energy performance of buildings – Calculation of energy needs for space heating and cooling using dynamic methods – General criteria and validation procedures</i>	LVS EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling [LVS EN ISO 13790:2008 Ēku energoefektivitāte. Telpu apsildīšanas un dzesēšanas energopatēriņa rēķināšana]	
		► Apartment blocks		LVS EN 15265:2007 Energy performance of buildings – Calculation of energy needs for space heating and cooling using dynamic methods – General criteria and validation procedures [LVS EN 15265:2007 Ēku energoefektivitāte. Telpu apsildīšanas un dzesēšanas energovajadzību rēķināšana ar dinamiskām metodēm. Vispārīgie kritēriji un validēšana]	LVS EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling [LVS EN ISO 13790:2008 Ēku energoefektivitāte. Telpu apsildīšanas un dzesēšanas energopatēriņa rēķināšana]
4b	A national software certification scheme used to accredit individuals carrying out modelling (dynamic energy simulation)	► Tertiary	Not available		
		► Apartment blocks	Not available		
4d	Guidance for calculating savings when using a spreadsheet-based approach, rather than software	► Tertiary	<i>EN 16212:2012 Energy Efficiency and Savings Calculation, Top-down and Bottom-up Methods (section 6)</i>	Cabinet of Ministers Regulation No. 348 (25.06.2013): Methodology for Calculating the Energy Performance of Buildings, Chapter 8: Assessment of the energy savings of planned energy efficiency improvement measures [Ministru kabineta noteikumi Nr. 348 (25.06.2013): Ēkas energoefektivitātes aprēķina metode, 8: Plānoto energoefektivitātes uzlabošanas pasākumu enerģijas ietaupījuma novērtējums]	

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ANNEX A: INDEX OF NATIONAL RESOURCES

Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	LATVIA
		► Apartment blocks		Cabinet of Ministers Regulation No. 348 (25.06.2013): Methodology for Calculating the Energy Performance of Buildings, Chapter 8: Assessment of the energy savings of planned energy efficiency improvement measures [Ministru kabineta noteikumi Nr. 348 (25.06.2013): Ēkas energoefektivitātes aprēķina metode, 8: Plānoto energoefektivitātes uzlabošanas pasākumu enerģijas ietaupījuma novērtējums]	
	A national certification scheme for individuals carrying out spreadsheet-based savings calculations (rather than using software)	► Tertiary	<i>Not available</i>	Independent experts in the field of building energy certification scheme [Neatkarīgu ekspertu ēku energoefektivitātes jomā sertificēšanas shēma]	
		► Apartment blocks	<i>Not available</i>	Independent experts in the field of building energy certification scheme [Neatkarīgu ekspertu ēku energoefektivitātes jomā sertificēšanas shēma]	
	A guide to carrying out dynamic energy simulation for residential buildings	n/a	<i>ISO 13790:2008 Energy performance of buildings -- Calculation of energy use for space heating and cooling</i>	LVS EN ISO 13790:2008 Energy performance of buildings -- Calculation of energy use for space heating and cooling [LVS EN ISO 13790:2008 Ēku energoefektivitāte. Telpu apsildīšanas un dzesēšanas energopatēriņa rēķināšana]	
4e	A source of inflation values	n/a	<i>European Central Bank's Harmonised Index of Consumer Prices</i> (https://www.ecb.europa.eu/stats/prices/hicp/html/index.en.html)	Central Statistical Bureau of Latvia >> Key indicators >> Economy and Finance >> Consumer prices (inflation) [Centrālā statistikas pārvalde >> Galvenie rādītāji >> Ekonomika un finanses >> Patēriņa cenas (inflācija)]	
4f	Guidance for carrying out life-cycle cost analysis	n/a	<i>ISO 15686-5:2008 Buildings and constructed assets - Service-life planning - Part 5: Life-cycle costing</i>		
4g	A list of generally accepted lifetimes for energy conservation measures/technologies	n/a	<i>EN 15459:2007 Energy performance of buildings – Economic evaluation procedure for energy systems in buildings (Annex A)</i>	Energy Savings Catalog, Ministry of Economics [Enerģijas ietaupījumu katalogu, Ekonomikas ministrija]	
4c	Guidance for producing energy audit reports	n/a	<i>EN 16247-2 Energy audits – Part 2: Buildings (section 5.6)</i>	LVS EN 16247-2:2015 Energy audits buildings (Section 5.6) [LVS EN 16247-2:2015 Energoaudits. 2.daļa: Ēkas, 5.6]	

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Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	LATVIA
Design, construction and verification					
5a	Guidance for preparing systems manuals - these include guidance on how to operate and maintain systems e.g for new equipment installed	n/a	<i>EN 13460:2009 Maintenance – Documents for maintenance</i>	LVS EN 13460:2009 Maintenance – Documents for maintenance [LVS EN 13460:2009 Uzturēšana kārtībā. Dokumentācija]	
Operations, maintenance and monitoring					
6a	Guidance for operating and maintaining new systems and equipment	n/a	<i>ISO 15331:2011 Criteria for design, management and control of maintenance services for buildings</i>	LVS EN 15331:2011 Criteria for design, management and control of maintenance services for buildings [LVS EN 15331:2011 Ēku uzturēšanas dienestu plānošanas, pārvaldīšanas un kontroles kritēriji]	

LITHUANIA

Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	LITHUANIA
Baselining					
2a	Guidance for calculating accurate gross floor area (e.g. measuring from inside of walls, including all common areas, but excluding parking area)	► Tertiary	<i>EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling (section 3.2.6)</i>	STR 2.01.09:2005 Construction Technical Regulation on Energy performance of buildings, Energy performance certification (Annex 7: Building dimensions) [STR 2.01.09:2005 Statybos techninis reglamentas, Pastatų energinis naudingumas, Energinio naudingumo sertifikavimas (7 priedas: Pastato matmenys)]	
		► Apartment blocks		STR 2.01.09:2005 Construction Technical Regulation on Energy performance of buildings, Energy performance certification (Annex 7: Building dimensions) [STR 2.01.09:2005 Statybos techninis reglamentas, Pastatų energinis naudingumas, Energinio naudingumo sertifikavimas (7 priedas: Pastato matmenys)]	
2b	Guidance for recording occupancy (e.g. the number of people in a building and the time of day they are there)	n/a	<i>EN 16247-2 Energy audits buildings (Section 5.3.2 Information request)</i>	LST EN 16247-2:2014 Energy audits buildings (Section 5.3.2 Information request) [LST EN 16247-2:2014 Energijos auditai. 2 dalis. Pastatai 5.3.2]	
2c	Guidance for collecting information on the building and its systems, perhaps as part of an energy audit e.g. details of air conditioning systems, lighting system, glazing	n/a	<i>EN 16247-2 Energy audits buildings Section 5.3 Collecting data, 5.3.2 Information request and Annex D</i>	Lithuanian Minister of Economy order for approval of the Comprehensive audit methodology of energy, energy resources and cold water consumption in public buildings (2008. April 29. No. 4-184) [Lietuvos respublikos ūkio ministro įsakymas dėl išsamiojo energijos, energijos išteklių ir šalto vandens vartojimo audito atlikimo viešojo naudojimo paskirties pastatuose metodikos patvirtinimo (2008 m. balandžio 29 d. Nr. 4-184)]	
2d	Guidance for extrapolating or consolidating data to a complete calendar year	n/a	<i>ISO 16346:2013 - Energy performance of buildings -- Assessment of overall energy performance (Section 8.2.2 Extrapolation to an integral number of years)</i>		
2e	Guidance for normalising data against relevant variables in order to compare energy performance under equivalent conditions e.g. baseline regression modelling	n/a	<i>ISO 50006:2014 - Energy management systems -- Measuring energy performance using energy baselines (EnB) and energy performance indicators (EnPI) -- General principles and guidance Annex D Normalising energy baselines using relevant variables</i>		

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Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	LITHUANIA
2f	A source of energy consumption benchmarks for different types of buildings	► Tertiary	<i>Buildings Performance Institute Europe’s Data Hub for the Energy Performance of Buildings (see http://www.buildingsdata.eu/) .</i>		
		► Apartment blocks			
Savings calculations					
4a	Defining standards for energy modelling software (dynamic energy simulation)	► Tertiary	<i>Application of public domain or commercially available software that meets EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling, is validated according to the criteria in EN 15265:2007 Energy performance of buildings – Calculation of energy needs for space heating and cooling using dynamic methods – General criteria and validation procedures</i>		
		► Apartment blocks			
4b	A national software certification scheme used to accredit individuals carrying out modelling (dynamic energy simulation)	► Tertiary	<i>Not available</i>		
		► Apartment blocks	<i>Not available</i>		
4d	Guidance for calculating savings when using a spreadsheet-based approach, rather than software	► Tertiary	<i>EN 16212:2012 Energy Efficiency and Savings Calculation, Top-down and Bottom-up Methods (section 6)</i>	STR 2.01.09:2005 Construction Technical Regulation on Energy performance of buildings, Energy performance certification (Annex 9: The main results of the building energy demand calculation, and the evaluation of measures to improve the building's energy performance) [STR 2.01.09:2005 Statybos techninis reglamentas, Pastatų energinis naudingumas, Energinio naudingumo sertifikavimas (9 priedas: Pagrindiniai pastato energijos sąnaudų skaičiavimo rezultatai ir priemonių pastato energetiniam naudingumui gerinti įvertinimas)]	
		► Apartment blocks		STR 2.01.09:2005 Construction Technical Regulation on Energy performance of buildings, Energy performance certification (Annex 9: The main results of the building energy demand calculation, and the evaluation of measures to improve the building's energy performance) [STR 2.01.09:2005 Statybos techninis reglamentas, Pastatų energinis naudingumas, Energinio naudingumo sertifikavimas (9 priedas: Pagrindiniai pastato energijos sąnaudų skaičiavimo rezultatai ir priemonių pastato energetiniam naudingumui gerinti įvertinimas)]	

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Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	LITHUANIA
	A national certification scheme for individuals carrying out spreadsheet-based savings calculations (rather than using software)	► Tertiary	<i>Not available</i>	Building energy performance assessor accreditation scheme, run by the Centre for Construction Production Certification (SPSC) [Pastatų energinio naudingumo ekspertų atestavimas, Statybos produkcijos sertifikavimo centras]	
		► Apartment blocks	<i>Not available</i>	Building energy performance assessor accreditation scheme, run by the Centre for Construction Production Certification (SPSC) [Pastatų energinio naudingumo ekspertų atestavimas, Statybos produkcijos sertifikavimo centras]	
	A guide to carrying out dynamic energy simulation for residential buildings	n/a	<i>ISO 13790:2008 Energy performance of buildings -- Calculation of energy use for space heating and cooling</i>	LST EN ISO 13790:2008 Energy performance of buildings - Calculation of energy use for space heating and cooling [LST EN ISO 13790:2008 Energetinės pastatų charakteristikos. Patalpoms šildyti ir aušinti sunaudojamos energijos skaičiavimas]	
4e	A source of inflation values	n/a	<i>European Central Bank's Harmonised Index of Consumer Prices</i> (https://www.ecb.europa.eu/stats/prices/hicp/html/index.en.html)	Official Statistics Portal >> Economy and finance (macroeconomics) >> Price indices, changes and prices [[Lietuvos Statistikos Departamento svetainė >> Rodiklių duomenų bazė >> Ūkis ir finansai (makroekonomika) >> Kainų indeksai, pokyčiai ir kainos]	
4f	Guidance for carrying out life-cycle cost analysis	n/a	<i>ISO 15686-5:2008 Buildings and constructed assets - Service-life planning - Part 5: Life-cycle costing</i>		
4g	A list of generally accepted lifetimes for energy conservation measures/technologies	n/a	<i>EN 15459:2007 Energy performance of buildings – Economic evaluation procedure for energy systems in buildings (Annex A)</i>		
4c	Guidance for producing energy audit reports	n/a	<i>EN 16247-2 Energy audits – Part 2: Buildings (section 5.6)</i>	Lithuanian Minister of Economy order for approval of the Comprehensive audit methodology of energy, energy resources and cold water consumption in public buildings (2008. April 29. No. 4-184), Section XII: Preparation of the audit report. [Lietuvos respublikos ūkio ministro įsakymas dėl išsamiojo energijos, energijos išteklių ir šalto vandens vartojimo audito atlikimo viešojo naudojimo paskirties pastatuose metodikos patvirtinimo (2008 m. balandžio 29 d. Nr. 4-184), XII: Audito ataskaitos parengimas]	
Design, construction and verification					
5a	Guidance for preparing systems manuals - these include guidance on how to operate and maintain systems e.g for new equipment installed	n/a	<i>EN 13460:2009 Maintenance – Documents for maintenance</i>	LST EN 13460:2009 Maintenance – Documents for maintenance [LST EN 13460:2009 Techninė priežiūra. Techninės priežiūros dokumentai]	

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Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	LITHUANIA
Operations, maintenance and monitoring					
6a	Guidance for operating and maintaining new systems and equipment	n/a	<i>ISO 15331:2011 Criteria for design, management and control of maintenance services for buildings</i>	LST EN 15331:2011 Criteria for design, management and control of maintenance services for buildings [LST EN 15331:2011 Pastatų techninės priežiūros paslaugų projektavimo, vadybos ir kontrolės kriterijai]	

LUXEMBOURG

Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	LUXEMBOURG
Baselining					
2a	Guidance for calculating accurate gross floor area (e.g. measuring from inside of walls, including all common areas, but excluding parking area)	► Tertiary	<i>EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling (section 3.2.6)</i>	ILNAS-EN ISO 13790:2008 Energy performance of buildings - Calculation of energy use for space heating and cooling (section 3.2.6), available in English and German]	
		► Apartment blocks		ILNAS-EN ISO 13790:2008 Energy performance of buildings - Calculation of energy use for space heating and cooling (section 3.2.6), available in English and German]	
2b	Guidance for recording occupancy (e.g. the number of people in a building and the time of day they are there)	n/a	<i>EN 16247-2 Energy audits buildings (Section 5.3.2 Information request)</i>	ILNAS-EN 16247-2:2014 Energy audits - Part 2: Buildings (Section 5.3.2), available in French, English and German	
2c	Guidance for collecting information on the building and its systems, perhaps as part of an energy audit e.g. details of air conditioning systems, lighting system, glazing	n/a	<i>EN 16247-2 Energy audits buildings Section 5.3 Collecting data, 5.3.2 Information request and Annex D</i>	ILNAS-EN 16247-2:2014 Energy audits - Part 2: Buildings (Section 5.3, 5.3.2, Annex D), available in French, English and German	
2d	Guidance for extrapolating or consolidating data to a complete calendar year	n/a	<i>ISO 16346:2013 - Energy performance of buildings -- Assessment of overall energy performance (Section 8.2.2 Extrapolation to an integral number of years)</i>	Existing non-residential buildings: Grand-Ducal regulation of 31 August 2010 (with subsequent modifications) on the energy performance of functional buildings, Annex: Regulation on the energy performance of non-residential buildings, § 7.15.3 Temporal adjustment [Règlement grand-ducal du 31 août 2010 modifié concernant la performance énergétique des bâtiments fonctionnels, Annexe Verordnung über die Gesamtenergieeffizienz von Nichtwohngebäuden, § 7.15.3 Zeitliche Bereinigung]	
2e	Guidance for normalising data against relevant variables in order to compare energy performance under equivalent conditions e.g. baseline regression modelling	n/a	<i>ISO 50006:2014 - Energy management systems -- Measuring energy performance using energy baselines (EnB) and energy performance indicators (EnPI) -- General principles and guidance Annex D Normalising energy baselines using relevant variables</i>	Existing non-residential buildings: Grand-Ducal regulation of 31 August 2010 (with subsequent modifications) on the energy performance of functional buildings, Annex: Regulation on the energy performance of non-residential buildings, § 7.15 Determination of the power consumption value of a building [Règlement grand-ducal du 31 août 2010 modifié concernant la performance énergétique des bâtiments fonctionnels, Annexe Verordnung über die Gesamtenergieeffizienz von Nichtwohngebäuden, § 7.15 Ermittlung des Verbrauchskennwerts Strom eines Gebäudes]	

Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	LUXEMBOURG
2f	A source of energy consumption benchmarks for different types of buildings	► Tertiary	<i>Buildings Performance Institute Europe's Data Hub for the Energy Performance of Buildings (see http://www.buildingsdata.eu/) .</i>	Grand-Ducal regulation of 31 August 2010 (with subsequent modifications) on the energy performance of functional buildings, Annex: Regulation on the energy performance of non-residential buildings, Table 27 Reference energy consumption values for different utilities [Règlement grand-ducal du 31 août 2010 modifié concernant la performance énergétique des bâtiments fonctionnels, Annexe Verordnung über die Gesamtenergieeffizienz von Nichtwohngebäuden, Tabelle 27 - Zonenflächenbezogene Teilenergiekennwerte unterschiedlicher Gewerke]	
		► Apartment blocks		Grand-Ducal regulation of 31 August 2010 (with subsequent modifications) on the energy performance of functional buildings, Annex: Regulation on the energy performance of non-residential buildings, Table 27 Reference energy consumption values for different utilities [Règlement grand-ducal du 31 août 2010 modifié concernant la performance énergétique des bâtiments fonctionnels, Annexe Verordnung über die Gesamtenergieeffizienz von Nichtwohngebäuden, Tabelle 27 - Zonenflächenbezogene Teilenergiekennwerte unterschiedlicher Gewerke]	
Savings calculations					
4a	Defining standards for energy modelling software (dynamic energy simulation)	► Tertiary	<i>Application of public domain or commercially available software that meets EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling, is validated according to the criteria in EN 15265:2007 Energy performance of buildings – Calculation of energy needs for space heating and cooling using dynamic methods – General criteria and validation procedures</i>	ILNAS-EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling, available in English and German	
		► Apartment blocks		ILNAS-EN 15265:2007 Energy performance of buildings - Calculation of energy needs for space heating and cooling using dynamic methods, available in French, English and German	
4b	A national software certification scheme used to accredit individuals carrying out modelling (dynamic energy simulation)	► Tertiary	Not available		
		► Apartment blocks	Not available		
4d	Guidance for calculating savings when using a spreadsheet-based approach, rather than	► Tertiary	<i>EN 16212:2012 Energy Efficiency and Savings Calculation, Top-down and Bottom-up Methods (section 6)</i>	ILNAS-EN 16212:2012 Energy Efficiency and Savings Calculation, Top-down and Bottom-up Methods (section 6), available in French, English and German	

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	software	► Apartment blocks		ILNAS-EN 16212:2012 Energy Efficiency and Savings Calculation, Top-down and Bottom-up Methods (section 6), available in French, English and German	
	A national certification scheme for individuals carrying out spreadsheet-based savings calculations (rather than using software)	► Tertiary	<i>Not available</i>		
		► Apartment blocks	<i>Not available</i>		
	A guide to carrying out dynamic energy simulation for residential buildings	n/a	<i>ISO 13790:2008 Energy performance of buildings -- Calculation of energy use for space heating and cooling</i>	ILNAS-EN ISO 13790:2008 Energy performance of buildings - Calculation of energy use for space heating and cooling, available in English and German]	
4e	A source of inflation values	n/a	<i>European Central Bank's Harmonised Index of Consumer Prices</i> (https://www.ecb.europa.eu/stats/prices/hicp/html/index.en.html)	Grand Duchy of Luxembourg Statistics Portal >> Economy and Finance >> Consumer Prices >> Consumer Price Index [Grand-Duché de Luxembourg, Le Portail des Statistiques >> Economie et Finances >> Prix à la consommation >> Indice des prix à la consommation]	
4f	Guidance for carrying out life-cycle cost analysis	n/a	<i>ISO 15686-5:2008 Buildings and constructed assets - Service-life planning - Part 5: Life-cycle costing</i>		
4g	A list of generally accepted lifetimes for energy conservation measures/technologies	n/a	<i>EN 15459:2007 Energy performance of buildings – Economic evaluation procedure for energy systems in buildings (Annex A)</i>	Calculating cost-optimal levels of minimum requirements on the energy performance of new and existing residential and non-residential buildings, Table 8: Lifetime of structural and technical measures [Berechnung kostenoptimaler Niveaus von Mindestanforderungen an die Gesamtenergieeffizienz für neue und bestehende Wohn- und Nichtwohngebäude, Tabelle 8: Lebensdauer der baulichen und technischen Maßnahmen]	
4c	Guidance for producing energy audit reports	n/a	<i>EN 16247-2 Energy audits – Part 2: Buildings (section 5.6)</i>	ILNAS-EN 16247-2:2014 Energy audits - Part 2: Buildings (Section 5.6), available in French, English and German	

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Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	LUXEMBOURG
Design, construction and verification					
5a	Guidance for preparing systems manuals - these include guidance on how to operate and maintain systems e.g for new equipment installed	n/a	EN 13460:2009 Maintenance – Documents for maintenance	ILNAS-EN 13460:2009 Maintenance – Documents for maintenance, available in French, English and German	
Operations, maintenance and monitoring					
6a	Guidance for operating and maintaining new systems and equipment	n/a	ISO 15331:2011 Criteria for design, management and control of maintenance services for buildings	ILNAS-EN 15331:2011 Criteria for design, management and control of maintenance services for buildings, available in French, English and German	

MALTA

Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	MALTA
Baselining					
2a	Guidance for calculating accurate gross floor area (e.g. measuring from inside of walls, including all common areas, but excluding parking area)	► Tertiary	<i>EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling (section 3.2.6)</i>	Document F – Conservation of Fuel, Energy and Natural Resources (Minimum requirements on the Energy Performance of Buildings, 2015); Section 0.02 Definition of terms [Dokument F – Konservazzjoni tal-Fjuwil, l-Energija u r-Riżorsi Naturali (Rekwiżiti Minimi dwar ir-Rendiment tal-Energija fl-Użu tal-Bini, 2015), § 0.02 Definizzjonijiet ta' termini]	
		► Apartment blocks		Document F – Conservation of Fuel, Energy and Natural Resources (Minimum requirements on the Energy Performance of Buildings, 2015); Section 0.02 Definition of terms [Dokument F – Konservazzjoni tal-Fjuwil, l-Energija u r-Riżorsi Naturali (Rekwiżiti Minimi dwar ir-Rendiment tal-Energija fl-Użu tal-Bini, 2015), § 0.02 Definizzjonijiet ta' termini]	
2b	Guidance for recording occupancy (e.g. the number of people in a building and the time of day they are there)	n/a	<i>EN 16247-2 Energy audits buildings (Section 5.3.2 Information request)</i>		
2c	Guidance for collecting information on the building and its systems, perhaps as part of an energy audit e.g. details of air conditioning systems, lighting system, glazing	n/a	<i>EN 16247-2 Energy audits buildings Section 5.3 Collecting data, 5.3.2 Information request and Annex D</i>		
2d	Guidance for extrapolating or consolidating data to a complete calendar year	n/a	<i>ISO 16346:2013 - Energy performance of buildings -- Assessment of overall energy performance (Section 8.2.2 Extrapolation to an integral number of years)</i>		

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Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	MALTA
2e	Guidance for normalising data against relevant variables in order to compare energy performance under equivalent conditions e.g. baseline regression modelling	n/a	ISO 50006:2014 - Energy management systems -- Measuring energy performance using energy baselines (EnB) and energy performance indicators (EnPI) -- General principles and guidance Annex D Normalising energy baselines using relevant variables		
2f	A source of energy consumption benchmarks for different types of buildings	► Tertiary	Buildings Performance Institute Europe’s Data Hub for the Energy Performance of Buildings (see http://www.buildingsdata.eu/) .		
		► Apartment blocks			
Savings calculations					
4a	Defining standards for energy modelling software (dynamic energy simulation)	► Tertiary	Application of public domain or commercially available software that meets EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling, is validated according to the criteria in EN 15265:2007 Energy performance of buildings – Calculation of energy needs for space heating and cooling using dynamic methods – General criteria and validation procedures		
		► Apartment blocks			
4b	A national software certification scheme used to accredit individuals carrying out modelling (dynamic energy simulation)	► Tertiary	Not available		
		► Apartment blocks	Not available		
4d	Guidance for calculating savings when using a spreadsheet-based approach, rather than	► Tertiary	EN 16212:2012 Energy Efficiency and Savings Calculation, Top-down and Bottom-up Methods (section 6)		

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Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	MALTA
	software	► Apartment blocks			
	A national certification scheme for individuals carrying out spreadsheet-based savings calculations (rather than using software)	► Tertiary	<i>Not available</i>	Energy Auditor Training Course according to LN 910 2014	
		► Apartment blocks	<i>Not available</i>		
	A guide to carrying out dynamic energy simulation for residential buildings	n/a	<i>ISO 13790:2008 Energy performance of buildings -- Calculation of energy use for space heating and cooling</i>		
4e	A source of inflation values	n/a	<i>European Central Bank's Harmonised Index of Consumer Prices</i> (https://www.ecb.europa.eu/stats/prices/hicp/html/index.en.html)	National Statistical Office of Malta website >> Releases >> Price Statistics >> Harmonised Index of Consumer Prices	
4f	Guidance for carrying out life-cycle cost analysis	n/a	<i>ISO 15686-5:2008 Buildings and constructed assets - Service-life planning - Part 5: Life-cycle costing</i>		
4g	A list of generally accepted lifetimes for energy conservation measures/technologies	n/a	<i>EN 15459:2007 Energy performance of buildings – Economic evaluation procedure for energy systems in buildings (Annex A)</i>		
4c	Guidance for producing energy audit reports	n/a	<i>EN 16247-2 Energy audits – Part 2: Buildings (section 5.6)</i>	Guidance Note on the carrying out of mandatory energy audits by non-SMEs pursuant to LN 196/2014 transposing the Energy Efficiency Directive 2012/27/EU, Section 11. The Audit Report, <i>no Maltese language version has been identified</i>	

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Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	MALTA
Design, construction and verification					
5a	Guidance for preparing systems manuals - these include guidance on how to operate and maintain systems e.g for new equipment installed	n/a	<i>EN 13460:2009 Maintenance – Documents for maintenance</i>		
Operations, maintenance and monitoring					
6a	Guidance for operating and maintaining new systems and equipment	n/a	<i>ISO 15331:2011 Criteria for design, management and control of maintenance services for buildings</i>		

MOLDOVA

Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	MOLDOVA
Baselining					
2a	Guidance for calculating accurate gross floor area (e.g. measuring from inside of walls, including all common areas, but excluding parking area)	► Tertiary	<i>EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling (section 3.2.6)</i>	SM SR EN ISO 13790:2011 Energy performance of buildings – Calculation of energy use for space heating and cooling (section 3.2.6) [SM SR EN ISO 13790:2011 Performanța energetică a clădirilor. Calculul necesarului de energie pentru încălzirea și răcirea spațiilor (3.2.6)]	
		► Apartment blocks		SM SR EN ISO 13790:2011 Energy performance of buildings – Calculation of energy use for space heating and cooling (section 3.2.6) [SM SR EN ISO 13790:2011 Performanța energetică a clădirilor. Calculul necesarului de energie pentru încălzirea și răcirea spațiilor (3.2.6)]	
2b	Guidance for recording occupancy (e.g. the number of people in a building and the time of day they are there)	<i>n/a</i>	<i>EN 16247-2 Energy audits buildings (Section 5.3.2 Information request)</i>	SM EN 16247-2:2015 Energy audits. Part 2: Buildings (Section 5.3.2) [SM EN 16247-2:2015 Audituri energetice. Partea 2: Clădiri (5.3.2)]	
2c	Guidance for collecting information on the building and its systems, perhaps as part of an energy audit e.g. details of air conditioning systems, lighting system, glazing	<i>n/a</i>	<i>EN 16247-2 Energy audits buildings Section 5.3 Collecting data, 5.3.2 Information request and Annex D</i>	SM EN 16247-2:2015 Energy audits. Part 2: Buildings (Section 5.3, 5.3.2, Annex D) [SM EN 16247-2:2015 Audituri energetice. Partea 2: Clădiri (5.3, 5.3.2, Anexa D)]	
2d	Guidance for extrapolating or consolidating data to a complete calendar year	<i>n/a</i>	<i>ISO 16346:2013 - Energy performance of buildings -- Assessment of overall energy performance (Section 8.2.2 Extrapolation to an integral number of years)</i>		
2e	Guidance for normalising data against relevant variables in order to compare energy performance under equivalent conditions e.g. baseline regression modelling	<i>n/a</i>	<i>ISO 50006:2014 - Energy management systems -- Measuring energy performance using energy baselines (EnB) and energy performance indicators (EnPI) -- General principles and guidance Annex D Normalising energy baselines using relevant variables</i>		

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Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	MOLDOVA
2f	A source of energy consumption benchmarks for different types of buildings	► Tertiary	<i>Buildings Performance Institute Europe’s Data Hub for the Energy Performance of Buildings (see http://www.buildingsdata.eu/) .</i>		
		► Apartment blocks			
Savings calculations					
4a	Defining standards for energy modelling software (dynamic energy simulation)	► Tertiary	<i>Application of public domain or commercially available software that meets EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling, is validated according to the criteria in EN 15265:2007 Energy performance of buildings – Calculation of energy needs for space heating and cooling using dynamic methods – General criteria and validation procedures</i>	SM SR EN ISO 13790:2011 Energy performance of buildings – Calculation of energy use for space heating and cooling [SM SR EN ISO 13790:2011 Performanța energetică a clădirilor. Calculul necesarului de energie pentru încălzirea și răcirea spațiilor]	
		► Apartment blocks		SM SR EN 15265:2011 Energy performance of buildings – Calculation of energy needs for space heating and cooling using dynamic methods – General criteria and validation procedures [SM SR EN 15265:2011 Performanța termică a clădirilor. Calculul necesarului de energie pentru încălzirea și răcirea încăperilor Criterii generale și proceduri de validare] SM SR EN ISO 13790:2011 Energy performance of buildings – Calculation of energy use for space heating and cooling [SM SR EN ISO 13790:2011 Performanța energetică a clădirilor. Calculul necesarului de energie pentru încălzirea și răcirea spațiilor] SM SR EN 15265:2011 Energy performance of buildings – Calculation of energy needs for space heating and cooling using dynamic methods – General criteria and validation procedures [SM SR EN 15265:2011 Performanța termică a clădirilor. Calculul necesarului de energie pentru încălzirea și răcirea încăperilor Criterii generale și proceduri de validare]	
4b	A national software certification scheme used to accredit individuals carrying out modelling (dynamic energy simulation)	► Tertiary	<i>Not available</i>		
		► Apartment blocks	<i>Not available</i>		
4d	Guidance for calculating savings when using a spreadsheet-based approach, rather than	► Tertiary	<i>EN 16212:2012 Energy Efficiency and Savings Calculation, Top-down and Bottom-up Methods (section 6)</i>		

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Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	MOLDOVA
	software	► Apartment blocks			
	A national certification scheme for individuals carrying out spreadsheet-based savings calculations (rather than using software)	► Tertiary	<i>Not available</i>		
		► Apartment blocks	<i>Not available</i>		
	A guide to carrying out dynamic energy simulation for residential buildings	n/a	<i>ISO 13790:2008 Energy performance of buildings -- Calculation of energy use for space heating and cooling</i>	SM SR EN ISO 13790:2011 Energy performance of buildings – Calculation of energy use for space heating and cooling [SM SR EN ISO 13790:2011 Performanța energetică a clădirilor. Calculul necesarului de energie pentru încălzirea și răcirea spațiilor]	
4e	A source of inflation values	n/a	<i>European Central Bank's Harmonised Index of Consumer Prices</i> (https://www.ecb.europa.eu/stats/prices/hicp/html/index.en.html)	National Bank of Moldova website >> Inflation [Banca Națională a Moldovei website >> Rata inflației]	
4f	Guidance for carrying out life-cycle cost analysis	n/a	<i>ISO 15686-5:2008 Buildings and constructed assets - Service-life planning - Part 5: Life-cycle costing</i>		
4g	A list of generally accepted lifetimes for energy conservation measures/technologies	n/a	<i>EN 15459:2007 Energy performance of buildings – Economic evaluation procedure for energy systems in buildings (Annex A)</i>	SM SR EN 15459:2011 Energy performance of buildings – Economic evaluation procedure for energy systems in buildings (Annex A) [SM SR EN 15459:2011 Performanța energetică a clădirilor. Procedură de evaluare economică a sistemelor energetice din clădiri (Anexa A)]	
4c	Guidance for producing energy audit reports	n/a	<i>EN 16247-2 Energy audits – Part 2: Buildings (section 5.6)</i>	SM EN 16247-2:2015 Energy audits – Part 2: Buildings (section 5.6) [SM EN 16247-2:2015 Audituri energetice. Partea 2: Clădiri (5.6)]	

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Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	MOLDOVA
Design, construction and verification					
5a	Guidance for preparing systems manuals - these include guidance on how to operate and maintain systems e.g for new equipment installed	n/a	<i>EN 13460:2009 Maintenance – Documents for maintenance</i>	SM SR EN 13460:2011 Maintenance – Documents for maintenance [SM SR EN 13460:2011 Mentenanță. Documentație pentru mentenanță]	
Operations, maintenance and monitoring					
6a	Guidance for operating and maintaining new systems and equipment	n/a	<i>ISO 15331:2011 Criteria for design, management and control of maintenance services for buildings</i>		

NETHERLANDS, THE

Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	THE NETHERLANDS
Baselining					
2a	Guidance for calculating accurate gross floor area (e.g. measuring from inside of walls, including all common areas, but excluding parking area)	► Tertiary	<i>EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling (section 3.2.6)</i>	NEN 2580:2007 Areas and volumes of buildings - Terms, definitions and methods of determination [NEN 2580:2007 Oppervlakten en inhoud van gebouwen - Termen, definities en bepalingmethoden]	
		► Apartment blocks		NEN 2580:2007 Areas and volumes of buildings - Terms, definitions and methods of determination [NEN 2580:2007 Oppervlakten en inhoud van gebouwen - Termen, definities en bepalingmethoden]	
2b	Guidance for recording occupancy (e.g. the number of people in a building and the time of day they are there)	<i>n/a</i>	<i>EN 16247-2 Energy audits buildings (Section 5.3.2 Information request)</i>	NEN-EN 16247-2:2014 EN 16247-2 Energy audits buildings (Section 5.3.2 Information request) [NEN-EN 16247-2:2014 Energie-audits - Deel 2: Gebouwen, 5.3.2]	
2c	Guidance for collecting information on the building and its systems, perhaps as part of an energy audit e.g. details of air conditioning systems, lighting system, glazing	<i>n/a</i>	<i>EN 16247-2 Energy audits buildings Section 5.3 Collecting data, 5.3.2 Information request and Annex D</i>	NEN-EN 16247-2:2014 EN 16247-2 Energy audits buildings (Section 5.3 Collecting data, 5.3.2 Information request and Annex D) [NEN-EN 16247-2:2014 Energie-audits - Deel 2: Gebouwen, 5.3, 5.3.2, Bijlage D]	
2d	Guidance for extrapolating or consolidating data to a complete calendar year	<i>n/a</i>	<i>ISO 16346:2013 - Energy performance of buildings -- Assessment of overall energy performance (Section 8.2.2 Extrapolation to an integral number of years)</i>		
2e	Guidance for normalising data against relevant variables in order to compare energy performance under equivalent conditions e.g. baseline regression modelling	<i>n/a</i>	<i>ISO 50006:2014 - Energy management systems -- Measuring energy performance using energy baselines (EnB) and energy performance indicators (EnPI) -- General principles and guidance Annex D Normalising energy baselines using relevant variables</i>	NEN-ISO 50006:2015 Energy management systems -- Measuring energy performance using energy baselines (EnB) and energy performance indicators (EnPI) -- General principles and guidance (Annex D Normalising energy baselines using relevant variables) [NEN-ISO 50006:2015 Energiemanagementsystemen - Meting van energieprestatie met gebruik van energie referenties voor energieverbruik (EnB) en energieprestatie indicatoren (EnPI) - Algemene principes en richtlijn, Bijlage D]	

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Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	THE NETHERLANDS
2f	A source of energy consumption benchmarks for different types of buildings	► Tertiary	<i>Buildings Performance Institute Europe's Data Hub for the Energy Performance of Buildings (see http://www.buildingsdata.eu/) .</i>	ECN Publication ECN-E--15-068. Developing energy benchmarks for commercial and industrial buildings [ECN-E--15-068. Ontwikkeling energiekentallen utiliteitsgebouwen]	
		► Apartment blocks			
Savings calculations					
4a	Defining standards for energy modelling software (dynamic energy simulation)	► Tertiary	<i>Application of public domain or commercially available software that meets EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling, is validated according to the criteria in EN 15265:2007 Energy performance of buildings – Calculation of energy needs for space heating and cooling using dynamic methods – General criteria and validation procedures</i>	NEN-EN-ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling [NEN-EN-ISO 13790:2008 Energieprestatie van gebouwen - Berekening van het energieverbruik voor verwarming en koeling]	
		► Apartment blocks		NEN-EN 15265:2007 Energy performance of buildings – Calculation of energy needs for space heating and cooling using dynamic methods – General criteria and validation procedures [NEN-EN 15265:2007 Energieprestatie van gebouwen - Berekening van de energiebehoefte voor verwarming en koeling - Algemene criteria en validatieprocedures]	
4b	A national software certification scheme used to accredit individuals carrying out modelling (dynamic energy simulation)	► Tertiary	<i>Not available</i>		
		► Apartment blocks	<i>Not available</i>		
4d	Guidance for calculating savings when using a spreadsheet-based approach, rather than	► Tertiary	<i>EN 16212:2012 Energy Efficiency and Savings Calculation, Top-down and Bottom-up Methods (section 6)</i>	NEN-EN 16212:2012 Energy Efficiency and Savings Calculation, Top-down and Bottom-up Methods (section 6) [NEN-EN 16212:2012 Rendement van de energie-omzetting en besparingsberekening,Top-down en Bottum-up methoden, 6]	

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Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	THE NETHERLANDS
	software	► Apartment blocks		NEN-EN 16212:2012 Energy Efficiency and Savings Calculation, Top-down and Bottom-up Methods (section 6) [NEN-EN 16212:2012 Rendement van de energie-omzetting en besparingsberekening, Top-down en Bottom-up methoden, 6]	
	A national certification scheme for individuals carrying out spreadsheet-based savings calculations (rather than using software)	► Tertiary	<i>Not available</i>		
		► Apartment blocks	<i>Not available</i>		
	A guide to carrying out dynamic energy simulation for residential buildings	n/a	<i>ISO 13790:2008 Energy performance of buildings -- Calculation of energy use for space heating and cooling</i>	NEN-EN-ISO 13790:2008 Energy performance of buildings -- Calculation of energy use for space heating and cooling [NEN-EN-ISO 13790:2008 Energieprestatie van gebouwen - Berekening van het energiegebruik voor verwarming en koeling]	
4e	A source of inflation values	n/a	<i>European Central Bank's Harmonised Index of Consumer Prices</i> (https://www.ecb.europa.eu/stats/prices/hicp/html/index.en.html)	Central Bureau of Statistics (CBS) online database StatLine >> Thema's >> Prijzen >> Consumentenprijzen >> Inflatie [Central Bureau voor de Statistiek (CBS) elektronische databank StatLine >> Thema's >> Prijzen >> Consumentenprijzen >> Inflatie]	
4f	Guidance for carrying out life-cycle cost analysis	n/a	<i>ISO 15686-5:2008 Buildings and constructed assets - Service-life planning - Part 5: Life-cycle costing</i>	NEN-ISO 15686-5:2008 Buildings and constructed assets - Service-life planning - Part 5: Life-cycle costing [NEN-ISO 15686-5:2008 Gebouwen en constructies - Planning van de levensduur - Deel 5: Onderhoud en levenscyclus]	
4g	A list of generally accepted lifetimes for energy conservation measures/technologies	n/a	<i>EN 15459:2007 Energy performance of buildings – Economic evaluation procedure for energy systems in buildings (Annex A)</i>	NEN-EN 15459:2007 Energy performance of buildings – Economic evaluation procedure for energy systems in buildings (Annex A) [NEN-EN 15459:2007 Energieprestatie van gebouwen - Economische beoordelingsprocedure voor energiesystemen in gebouwen, Bijlage A]	
4c	Guidance for producing energy audit reports	n/a	<i>EN 16247-2 Energy audits – Part 2: Buildings (section 5.6)</i>	Recommendation document: Report formats for energy audits in the context of the EED, Netherlands Enterprise Agency (RVO) [Adviesdocument: Rapportage-formats voor energie-audits in het kader van de EED, versie 1, 21 Januari 2016, Rijksdienst voor Ondernemend Nederland (RVO)]	

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Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	THE NETHERLANDS
Design, construction and verification					
5a	Guidance for preparing systems manuals - these include guidance on how to operate and maintain systems e.g for new equipment installed	n/a	<i>EN 13460:2009 Maintenance – Documents for maintenance</i>	NEN-EN 13460:2009 Maintenance – Documents for maintenance [NEN-EN 13460:2009 Onderhoud - Documentatie voor onderhoud]	
Operations, maintenance and monitoring					
6a	Guidance for operating and maintaining new systems and equipment	n/a	<i>ISO 15331:2011 Criteria for design, management and control of maintenance services for buildings</i>	NEN-EN 15331:2011 Criteria for design, management and control of maintenance services for buildings [NEN-EN 15331:2011 Criteria voor ontwerp, aanpak en controle van onderhoudsdiensten voor gebouwen]	

NORWAY

Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	NORWAY
Baselining					
2a	Guidance for calculating accurate gross floor area (e.g. measuring from inside of walls, including all common areas, but excluding parking area)	► Tertiary	<i>EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling (section 3.2.6)</i>	NS 3940:2012 Calculation of areas and volumes of buildings [NS 3940:2012 Areal- og volumberegninger av bygninger]	
		► Apartment blocks		NS 3940:2012 Calculation of areas and volumes of buildings [NS 3940:2012 Areal- og volumberegninger av bygninger]	
2b	Guidance for recording occupancy (e.g. the number of people in a building and the time of day they are there)	n/a	<i>EN 16247-2 Energy audits buildings (Section 5.3.2 Information request)</i>	NS 3031:2014 Calculation of energy performance of buildings - Method and data [NS 3031:2014 Beregning av bygningers energiytelse - Metode og data]	
2c	Guidance for collecting information on the building and its systems, perhaps as part of an energy audit e.g. details of air conditioning systems, lighting system, glazing	n/a	<i>EN 16247-2 Energy audits buildings Section 5.3 Collecting data, 5.3.2 Information request and Annex D</i>	NS-EN 16247-2:2014 Energy audits - Part 2: Buildings (Section 5.3 Collecting data, 5.3.2 Information request and Annex D) [NS-EN 16247-2:2014 Energirevisjoner - Del 2: Bygninger, 5.3, 5.3.2, Vedlegg D]	
2d	Guidance for extrapolating or consolidating data to a complete calendar year	n/a	<i>ISO 16346:2013 - Energy performance of buildings -- Assessment of overall energy performance (Section 8.2.2 Extrapolation to an integral number of years)</i>	NS-EN 15603:2008 Energy performance of buildings - Overall energy use and definition of energy ratings [NS-EN 15603:2008 Bygningers energiytelse - Bestemmelse av total energibruk og energiytelse]	
2e	Guidance for normalising data against relevant variables in order to compare energy performance under equivalent conditions e.g. baseline regression modelling	n/a	<i>ISO 50006:2014 - Energy management systems -- Measuring energy performance using energy baselines (EnB) and energy performance indicators (EnPI) -- General principles and guidance Annex D Normalising energy baselines using relevant variables</i>	NS-ISO 50006:2014 Energy management systems - Measuring energy performance using energy baselines (EnB) and energy performance indicators (EnPI) - General principles and guidance [NS-ISO 50006:2014 Energiledelsessystemer - Måling av energiytelse ved bruk av energibasislinjer (EnB) og energiytelsesindikatorer (EnPI) - Generelle prinsipper og råd]	

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Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	NORWAY
2f	A source of energy consumption benchmarks for different types of buildings	► Tertiary	<i>Buildings Performance Institute Europe’s Data Hub for the Energy Performance of Buildings (see http://www.buildingsdata.eu/) .</i>	Enova Building Statistics, available for download from Enova website [Enovas Byggstatistikk]	
		► Apartment blocks			
Savings calculations					
4a	Defining standards for energy modelling software (dynamic energy simulation)	► Tertiary	<i>Application of public domain or commercially available software that meets EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling, is validated according to the criteria in EN 15265:2007 Energy performance of buildings – Calculation of energy needs for space heating and cooling using dynamic methods – General criteria and validation procedures</i>	NS 3031:2014 Calculation of energy performance of buildings - Method and data [NS 3031:2014 title: Beregning av bygningers energiytelse - Metode og data]	
		► Apartment blocks		NS 3031:2014 Calculation of energy performance of buildings - Method and data [NS 3031:2014 title: Beregning av bygningers energiytelse - Metode og data]	
4b	A national software certification scheme used to accredit individuals carrying out modelling (dynamic energy simulation)	► Tertiary	<i>Not available</i>		
		► Apartment blocks	<i>Not available</i>		
4d	Guidance for calculating savings when using a spreadsheet-based approach, rather than software	► Tertiary	<i>EN 16212:2012 Energy Efficiency and Savings Calculation, Top-down and Bottom-up Methods (section 6)</i>		
		► Apartment blocks			
	A national certification scheme for individuals carrying out spreadsheet-based savings calculations (rather than using software)	► Tertiary	<i>Not available</i>		
		► Apartment blocks	<i>Not available</i>		

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Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	NORWAY
	A guide to carrying out dynamic energy simulation for residential buildings	n/a	<i>ISO 13790:2008 Energy performance of buildings -- Calculation of energy use for space heating and cooling</i>		
4e	A source of inflation values	n/a	<i>European Central Bank's Harmonised Index of Consumer Prices</i> (https://www.ecb.europa.eu/stats/prices/hicp/html/index.en.html)	Statistics Norway, Consumer Price Index [Statistisk sentralbyrå, Konsumprisindeksen]	
4f	Guidance for carrying out life-cycle cost analysis	n/a	<i>ISO 15686-5:2008 Buildings and constructed assets - Service-life planning - Part 5: Life-cycle costing</i>	NS-EN 16627:2015 Sustainability of construction works - Assessment of economic performance of buildings - Calculation methods [NS-EN 16627:2015 Bærekraftige byggverk - Vurdering av bygningers økonomiske prestasjon - Beregningsmetoder]	
4g	A list of generally accepted lifetimes for energy conservation measures/technologies	n/a	<i>EN 15459:2007 Energy performance of buildings – Economic evaluation procedure for energy systems in buildings (Annex A)</i>		
4c	Guidance for producing energy audit reports	n/a	<i>EN 16247-2 Energy audits – Part 2: Buildings (section 5.6)</i>	NS-EN 16247-1:2012 Energy audits - Part 1: General requirements, Section 5.6 [NS-EN 16247-1:2012 Energirevisjoner - Del 1: Generelle krav, 5.6]	
Design, construction and verification					
5a	Guidance for preparing systems manuals - these include guidance on how to operate and maintain systems e.g for new equipment installed	n/a	<i>EN 13460:2009 Maintenance – Documents for maintenance</i>	Fixed installations: NS 3456:2010 Documentation for management, operation, maintenance and development of construction works [NS 3456:2010 Dokumentasjon for forvaltning, drift, vedlikehold og utvikling (FDVU) for byggverk] Equipment: NS 5820:1994 Supplier's documentation of equipment [NS 5820:1994 Dokumentasjon av utstyrsleveranser]	
Operations, maintenance and monitoring					
6a	Guidance for operating and maintaining new systems and equipment	n/a	<i>ISO 15331:2011 Criteria for design, management and control of maintenance services for buildings</i>		

POLAND

Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	POLAND
Baselining					
2a	Guidance for calculating accurate gross floor area (e.g. measuring from inside of walls, including all common areas, but excluding parking area)	► Tertiary	<i>EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling (section 3.2.6)</i>	PN-ISO 9836:2015-12 Performance standards in building -- Definition and calculation of area and space indicators [PN-ISO 9836:2015-12 Właściwości użytkowe w budownictwie -- Określanie i obliczanie wskaźników powierzchniowych i kubaturowych]	
		► Apartment blocks		PN-ISO 9836:2015-12 Performance standards in building -- Definition and calculation of area and space indicators [PN-ISO 9836:2015-12 Właściwości użytkowe w budownictwie -- Określanie i obliczanie wskaźników powierzchniowych i kubaturowych]	
2b	Guidance for recording occupancy (e.g. the number of people in a building and the time of day they are there)	n/a	<i>EN 16247-2 Energy audits buildings (Section 5.3.2 Information request)</i>	PN-EN 16247-2:2014-06 Energy audits buildings, Section 5.3.2 Information request [PN-EN 16247-2:2014-06 Audyty energetyczne -- Część 2: Budynki, 5.3.2]	
2c	Guidance for collecting information on the building and its systems, perhaps as part of an energy audit e.g. details of air conditioning systems, lighting system, glazing	n/a	<i>EN 16247-2 Energy audits buildings Section 5.3 Collecting data, 5.3.2 Information request and Annex D</i>	Minister of Infrastructure Regulation of 17 March 2009, Section 3 Detailed scope of an energy audit of the building; Annex 1 [Rozporządzenie Ministra Infrastruktury z dnia 17 marca 2009, Rozdział 3 Szczegółowy zakres audytu energetycznego budynku; Załącznik nr. 1]	
2d	Guidance for extrapolating or consolidating data to a complete calendar year	n/a	<i>ISO 16346:2013 - Energy performance of buildings -- Assessment of overall energy performance (Section 8.2.2 Extrapolation to an integral number of years)</i>		
2e	Guidance for normalising data against relevant variables in order to compare energy performance under equivalent conditions e.g. baseline regression modelling	n/a	<i>ISO 50006:2014 - Energy management systems -- Measuring energy performance using energy baselines (EnB) and energy performance indicators (EnPI) -- General principles and guidance Annex D Normalising energy baselines using relevant variables</i>		

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Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	POLAND
2f	A source of energy consumption benchmarks for different types of buildings	► Tertiary	<i>Buildings Performance Institute Europe's Data Hub for the Energy Performance of Buildings (see http://www.buildingsdata.eu/) .</i>		
		► Apartment blocks			
Savings calculations					
4a	Defining standards for energy modelling software (dynamic energy simulation)	► Tertiary	<i>Application of public domain or commercially available software that meets EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling, is validated according to the criteria in EN 15265:2007 Energy performance of buildings – Calculation of energy needs for space heating and cooling using dynamic methods – General criteria and validation procedures</i>	PN-EN ISO 13790:2009 Energy performance of buildings – Calculation of energy use for space heating and cooling [PN-EN ISO 13790:2009 Energetyczne właściwości użytkowe budynków -- Obliczanie zużycia energii na potrzeby ogrzewania i chłodzenia]	
		► Apartment blocks		PN-EN 15265:2011 Energy performance of buildings – Calculation of energy needs for space heating and cooling using dynamic methods – General criteria and validation procedures [PN-EN 15265:2011 Energetyczne właściwości użytkowe budynków -- Obliczanie zapotrzebowania na energię do ogrzewania i chłodzenia pomieszczeń z zastosowaniem metod dynamicznych -- Kryteria ogólne i procedury walidacji]	PN-EN ISO 13790:2009 Energy performance of buildings – Calculation of energy use for space heating and cooling [PN-EN ISO 13790:2009 Energetyczne właściwości użytkowe budynków -- Obliczanie zużycia energii na potrzeby ogrzewania i chłodzenia]
4b	A national software certification scheme used to accredit individuals carrying out modelling (dynamic energy simulation)	► Tertiary	<i>Not available</i>		
		► Apartment blocks	<i>Not available</i>		
4d	Guidance for calculating savings when using a spreadsheet-based approach, rather than	► Tertiary	<i>EN 16212:2012 Energy Efficiency and Savings Calculation, Top-down and Bottom-up Methods (section 6)</i>	Minister of Infrastructure Regulation of 17 March 2009, Chapter 3 Detailed scope of an energy audit of the building, pages 4076 to 4088 [Rozporządzenie Ministra Infrastruktury z dnia 17 marca 2009, Rozdział 3 Szczegółowy zakres audytu energetycznego budynku, strony 4076-4088]	

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Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	POLAND
	software	► Apartment blocks		Minister of Infrastructure Regulation of 17 March 2009, Chapter 3 Detailed scope of an energy audit of the building, pages 4076 to 4088 [Rozporządzenie Ministra Infrastruktury z dnia 17 marca 2009, Rozdział 3 Szczegółowy zakres audytu energetycznego budynku, strony 4076-4088]	
	A national certification scheme for individuals carrying out spreadsheet-based savings calculations (rather than using software)	► Tertiary	<i>Not available</i>		
		► Apartment blocks	<i>Not available</i>		
	A guide to carrying out dynamic energy simulation for residential buildings	n/a	<i>ISO 13790:2008 Energy performance of buildings -- Calculation of energy use for space heating and cooling</i>	PN-EN ISO 13790:2009 Energy performance of buildings – Calculation of energy use for space heating and cooling [PN-EN ISO 13790:2009 Energetyczne właściwości użytkowe budynków -- Obliczanie zużycia energii na potrzeby ogrzewania i chłodzenia]	
4e	A source of inflation values	n/a	<i>European Central Bank's Harmonised Index of Consumer Prices</i> (https://www.ecb.europa.eu/stats/prices/hicp/html/index.en.html)	Central Statistical Office of Poland website >> Databases >> Poland macroeconomic indicators [Główny Urząd Statystyczny stronie internetowej >> Banki i bazy danych >> Wskaźniki makroekonomiczne]	
4f	Guidance for carrying out life-cycle cost analysis	n/a	<i>ISO 15686-5:2008 Buildings and constructed assets - Service-life planning - Part 5: Life-cycle costing</i>		
4g	A list of generally accepted lifetimes for energy conservation measures/technologies	n/a	<i>EN 15459:2007 Energy performance of buildings – Economic evaluation procedure for energy systems in buildings (Annex A)</i>	PN-EN 15459:2008 Energy performance of buildings – Economic evaluation procedure for energy systems in buildings, Annex A [PN-EN 15459:2008 Charakterystyka energetyczna budynków -- Ekonomiczna ocena instalacji energetycznych w budynkach, Załącznik A]	
4c	Guidance for producing energy audit reports	n/a	<i>EN 16247-2 Energy audits – Part 2: Buildings (section 5.6)</i>		
Design, construction and verification					
5a	Guidance for preparing systems manuals - these include guidance on how to operate and maintain systems e.g for new equipment installed	n/a	<i>EN 13460:2009 Maintenance – Documents for maintenance</i>	PN-EN 13460:2009 Maintenance – Documents for maintenance [PN-EN 13460:2009 Obsługiwanie -- Dokumenty dotyczące obsługiowania]	

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Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	POLAND
Operations, maintenance and monitoring					
6a	Guidance for operating and maintaining new systems and equipment	n/a	<i>ISO 15331:2011 Criteria for design, management and control of maintenance services for buildings</i>	PN-EN 15331:2011 Criteria for design, management and control of maintenance services for buildings [PN-EN 15331:2011 Zasady planowania, zarządzania i nadzorowania prac konserwacyjnych w budynkach]	

PORTUGAL

Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	PORTUGAL
Baselining					
2a	Guidance for calculating accurate gross floor area (e.g. measuring from inside of walls, including all common areas, but excluding parking area)	► Tertiary	<i>EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling (section 3.2.6)</i>	Decree-Law No. 118/2013 (20/08/2013) with current amendments, Article 2 Definitions [Decreto-Lei n.º 118/2013, de 20 de agosto na sua redação atual, Artigo 2.º Definições]	
		► Apartment blocks		Decree-Law No. 118/2013 (20/08/2013) with current amendments, Article 2 Definitions [Decreto-Lei n.º 118/2013, de 20 de agosto na sua redação atual, Artigo 2.º Definições]	
2b	Guidance for recording occupancy (e.g. the number of people in a building and the time of day they are there)	n/a	<i>EN 16247-2 Energy audits buildings (Section 5.3.2 Information request)</i>	NP EN 16247-2:2014 Energy audits; Part 2: Buildings, Section 5.3.2 Information request [NP EN 16247-2:2014 Auditorias energéticas; Parte 2: Imóveis, 5.3.2]	
2c	Guidance for collecting information on the building and its systems, perhaps as part of an energy audit e.g. details of air conditioning systems, lighting system, glazing	n/a	<i>EN 16247-2 Energy audits buildings Section 5.3 Collecting data, 5.3.2 Information request and Annex D</i>	Ordinance No. 349-D/2013 (02/12/2013) with current amendments, Table 1.03 Minimum items to be considered in the survey and / or characterization of the building for the purposes of the multizone dynamic simulation method [Portaria n.º 349-D/2013 de 2 de dezembro na sua redação atual, Tabela I.03 Elementos mínimos a considerar no levantamento e/ou caracterização do edifício para efeitos de aplicação do método de simulação dinâmica multizona]	
2d	Guidance for extrapolating or consolidating data to a complete calendar year	n/a	<i>ISO 16346:2013 - Energy performance of buildings -- Assessment of overall energy performance (Section 8.2.2 Extrapolation to an integral number of years)</i>		
2e	Guidance for normalising data against relevant variables in order to compare energy performance under equivalent conditions e.g. baseline regression modelling	n/a	<i>ISO 50006:2014 - Energy management systems -- Measuring energy performance using energy baselines (EnB) and energy performance indicators (EnPI) -- General principles and guidance Annex D Normalising energy baselines using relevant variables</i>		

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Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	PORTUGAL
2f	A source of energy consumption benchmarks for different types of buildings	► Tertiary	<i>Buildings Performance Institute Europe’s Data Hub for the Energy Performance of Buildings (see http://www.buildingsdata.eu/) .</i>		
		► Apartment blocks			
Savings calculations					
4a	Defining standards for energy modelling software (dynamic energy simulation)	► Tertiary	<i>Application of public domain or commercially available software that meets EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling, is validated according to the criteria in EN 15265:2007 Energy performance of buildings – Calculation of energy needs for space heating and cooling using dynamic methods – General criteria and validation procedures</i>		
		► Apartment blocks			
4b	A national software certification scheme used to accredit individuals carrying out modelling (dynamic energy simulation)	► Tertiary	<i>Not available</i>		
		► Apartment blocks	<i>Not available</i>		
4d	Guidance for calculating savings when using a spreadsheet-based approach, rather than software	► Tertiary	<i>EN 16212:2012 Energy Efficiency and Savings Calculation, Top-down and Bottom-up Methods (section 6)</i>		
		► Apartment blocks			
	A national certification scheme for individuals carrying out spreadsheet-based savings calculations (rather than using software)	► Tertiary	<i>Not available</i>		
		► Apartment blocks	<i>Not available</i>		

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Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	PORTUGAL
	A guide to carrying out dynamic energy simulation for residential buildings	n/a	<i>ISO 13790:2008 Energy performance of buildings -- Calculation of energy use for space heating and cooling</i>		
4e	A source of inflation values	n/a	<i>European Central Bank's Harmonised Index of Consumer Prices</i> (https://www.ecb.europa.eu/stats/prices/hicp/html/index.en.html)	National Institute of Statistics (INE) >> Consumer Price Index [Instituto Nacional de Estatística (INE) >> Índice de Preços no Consumidor]	
4f	Guidance for carrying out life-cycle cost analysis	n/a	<i>ISO 15686-5:2008 Buildings and constructed assets - Service-life planning - Part 5: Life-cycle costing</i>		
4g	A list of generally accepted lifetimes for energy conservation measures/technologies	n/a	<i>EN 15459:2007 Energy performance of buildings – Economic evaluation procedure for energy systems in buildings (Annex A)</i>		
4c	Guidance for producing energy audit reports	n/a	<i>EN 16247-2 Energy audits – Part 2: Buildings (section 5.6)</i>	NP EN 16247-2:2014 Energy audits; Part 2: Buildings, Section 5.6 [NP EN 16247-2:2014 Auditorias energéticas; Parte 2: Imóveis, 5.6]	
Design, construction and verification					
5a	Guidance for preparing systems manuals - these include guidance on how to operate and maintain systems e.g for new equipment installed	n/a	<i>EN 13460:2009 Maintenance – Documents for maintenance</i>	Dispatch (extract) No. 15793-G / 2013: Minimum elements to be included in the test procedure and reception facilities and minimum elements to be included in the maintenance plan (PM) and respective terminology, Section 2: Plan of Maintenance [Despacho (extrato) n.º 15793-G/2013: elementos mínimos a incluir no procedimento de ensaio e receção das instalações e dos elementos mínimos a incluir no plano de manutenção (PM) e respetiva terminologia, 2. Plano de Manutenção]	
Operations, maintenance and monitoring					
6a	Guidance for operating and maintaining new systems and equipment	n/a	<i>ISO 15331:2011 Criteria for design, management and control of maintenance services for buildings</i>	Decree-Law No. 118/2013 (20/08/2013) with current amendments [Decreto-Lei n.º 118/2013, de 20 de agosto na sua redação atual]	

ROMANIA

Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	ROMANIA
Baselining					
2a	Guidance for calculating accurate gross floor area (e.g. measuring from inside of walls, including all common areas, but excluding parking area)	► Tertiary	<i>EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling (section 3.2.6)</i>	Methodology for calculating the energy performance of buildings Mc 001-2006, Part I - the building envelope, Section I.5.2.2 [Metodologie de calcul al performanței energetice a clădirilor Mc 001-2006, Partea I - Anvelopa Clădirii, I.5.2.2]	
		► Apartment blocks		Methodology for calculating the energy performance of buildings Mc 001-2006, Part I - the building envelope, Section I.5.2.2 [Metodologie de calcul al performanței energetice a clădirilor Mc 001-2006, Partea I - Anvelopa Clădirii, I.5.2.2]	
2b	Guidance for recording occupancy (e.g. the number of people in a building and the time of day they are there)	n/a	<i>EN 16247-2 Energy audits buildings (Section 5.3.2 Information request)</i>	SR EN 16247-2:2014 Energy audits - Part 2: Buildings (Section 5.3.2) [SR EN 16247-2:2014 Audit energetic. Partea 2: Clădiri (5.3.2)]	
2c	Guidance for collecting information on the building and its systems, perhaps as part of an energy audit e.g. details of air conditioning systems, lighting system, glazing	n/a	<i>EN 16247-2 Energy audits buildings Section 5.3 Collecting data, 5.3.2 Information request and Annex D</i>	Methodology for calculating the energy performance of buildings Mc 001-2006, Part III - Auditing and building energy performance certification, Chapter I; Building energy audit [Metodologie de calcul al performanței energetice a clădirilor Mc 001-2006, Partea a III-a – Auditul și certificatul de performanță energetică a clădirii, Capitolul I: Auditul energetic al clădirii]	
2d	Guidance for extrapolating or consolidating data to a complete calendar year	n/a	<i>ISO 16346:2013 - Energy performance of buildings -- Assessment of overall energy performance (Section 8.2.2 Extrapolation to an integral number of years)</i>		

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2e	Guidance for normalising data against relevant variables in order to compare energy performance under equivalent conditions e.g. baseline regression modelling	n/a	ISO 50006:2014 - Energy management systems -- Measuring energy performance using energy baselines (EnB) and energy performance indicators (EnPI) -- General principles and guidance Annex D Normalising energy baselines using relevant variables		
2f	A source of energy consumption benchmarks for different types of buildings	► Tertiary	Buildings Performance Institute Europe’s Data Hub for the Energy Performance of Buildings (see http://www.buildingsdata.eu/) .		
		► Apartment blocks			
Savings calculations					
4a	Defining standards for energy modelling software (dynamic energy simulation)	► Tertiary	Application of public domain or commercially available software that meets EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling, is validated according to the criteria in EN 15265:2007 Energy performance of buildings – Calculation of energy needs for space heating and cooling using dynamic methods – General criteria and validation procedures	SR EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling [SR EN ISO 13790:2008 Performanța energetică a clădirilor. Calculul necesarului de energie pentru încălzirea și răcirea spațiilor]	
		► Apartment blocks		SR EN 15265:2008 Energy performance of buildings - Calculation of energy needs for space heating and cooling using dynamic methods - General criteria and validation procedures [SR EN 15265:2008 Performanța termică a clădirilor. Calculul necesarului de energie pentru încălzirea și răcirea încăperilor. Criterii generale și proceduri de validare] SR EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling [SR EN ISO 13790:2008 Performanța energetică a clădirilor. Calculul necesarului de energie pentru încălzirea și răcirea spațiilor] SR EN 15265:2008 Energy performance of buildings - Calculation of energy needs for space heating and cooling using dynamic methods - General criteria and validation procedures [SR EN 15265:2008 Performanța termică a clădirilor. Calculul necesarului de energie pentru încălzirea și răcirea încăperilor. Criterii generale și proceduri de validare]	
4b	A national software certification scheme used	► Tertiary	Not available		

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	to accredit individuals carrying out modelling (dynamic energy simulation)	► Apartment blocks	<i>Not available</i>		
4d	Guidance for calculating savings when using a spreadsheet-based approach, rather than software	► Tertiary	<i>EN 16212:2012 Energy Efficiency and Savings Calculation, Top-down and Bottom-up Methods (section 6)</i>	Methodology for calculating the energy performance of buildings Mc 001-2006, Part III, Section I.4 Establishing technical solutions to increase the building energy performance for the construction and the installations [Metodologie de calcul al performanței energetice a clădirilor Mc 001-2006, Partea a III-a, § I.4 Stabilirea soluțiilor tehnice de creștere a performanței energetice pentru construcție și instalații, aplicabile clădirilor]	
		► Apartment blocks		Methodology for calculating the energy performance of buildings Mc 001-2006, Part III, Section I.4 Establishing technical solutions to increase the building energy performance for the construction and the installations [Metodologie de calcul al performanței energetice a clădirilor Mc 001-2006, Partea a III-a, § I.4 Stabilirea soluțiilor tehnice de creștere a performanței energetice pentru construcție și instalații, aplicabile clădirilor]	
	A national certification scheme for individuals carrying out spreadsheet-based savings calculations (rather than using software)	► Tertiary	<i>Not available</i>	Certified building energy auditor grade I [Auditor energetic pentru clădiri, grad profesional I, specialitățile construcții și instalații]	
		► Apartment blocks	<i>Not available</i>	Certified building energy auditor grade II [Auditor energetic pentru clădiri, grad profesional I, specialitățile construcții și instalații]	
	A guide to carrying out dynamic energy simulation for residential buildings	n/a	<i>ISO 13790:2008 Energy performance of buildings -- Calculation of energy use for space heating and cooling</i>		
4e	A source of inflation values	n/a	<i>European Central Bank's Harmonised Index of Consumer Prices</i> (https://www.ecb.europa.eu/stats/prices/hicp/html/index.en.html)	National Institute of Statistics website >> Consumer Price Index [Institutul National de Statistica website >> Indicele anual al preturilor de consum]	
4f	Guidance for carrying out life-cycle cost analysis	n/a	<i>ISO 15686-5:2008 Buildings and constructed assets - Service-life planning - Part 5: Life-cycle costing</i>		

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4g	A list of generally accepted lifetimes for energy conservation measures/technologies	n/a	<i>EN 15459:2007 Energy performance of buildings – Economic evaluation procedure for energy systems in buildings (Annex A)</i>	SR EN 15459:2008 Energy performance of buildings – Economic evaluation procedure for energy systems in buildings (Annex A) [SR EN 15459:2008 Performanța energetică a clădirilor. Procedură de evaluare economică a sistemelor energetice din clădiri (Anexa A)]	
4c	Guidance for producing energy audit reports	n/a	<i>EN 16247-2 Energy audits – Part 2: Buildings (section 5.6)</i>	Methodology for calculating the energy performance of buildings Mc 001-2006, Part III, Section II.3 Content of the energy performance certificate of a building [Metodologie de calcul al performanței energetice a clădirilor Mc 001-2006, Partea a III-a, § II.3 Conținutul certificatului de performanță energetică al unei clădiri]	
Design, construction and verification					
5a	Guidance for preparing systems manuals - these include guidance on how to operate and maintain systems e.g for new equipment installed	n/a	<i>EN 13460:2009 Maintenance – Documents for maintenance</i>	Decision no. 273 of 14 June 1994 (updated on 3 June 2014) approving the Regulation on the reception of construction works and related installations, Annex 6 Technical documentation of the building [Hotărâre nr. 273 din 14 iunie 1994 (actualizată la data de 3 iunie 2014) privind aprobarea Regulamentului de recepție a lucrărilor de construcții și instalații aferente acestora, Anexa 6 Cartea tehnică a construcției]	
Operations, maintenance and monitoring					
6a	Guidance for operating and maintaining new systems and equipment	n/a	<i>ISO 15331:2011 Criteria for design, management and control of maintenance services for buildings</i>	I 5-2010, Normative of 22 June 2011 on the design, manufacture and operation of ventilation and air conditioning systems [I 5-2010, Normativ din 22 iunie 2011 pentru proiectarea, executarea și exploatarea instalațiilor de ventilare și climatizare] I 13-2015, Standard for the design, execution and operation of central heating (revision and consolidation of standards and I 13-2002 and I 13/1-2002) [I 13-2015, Normativ pentru proiectarea, executarea și exploatarea instalațiilor de încălzire centrală (revizuire și comasare normativele I 13-2002 și I 13/1-2002)]	

SLOVAKIA

Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	SLOVAKIA
Baselining					
2a	Guidance for calculating accurate gross floor area (e.g. measuring from inside of walls, including all common areas, but excluding parking area)	► Tertiary	<i>EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling (section 3.2.6)</i>	STN EN ISO 13790/NA:2010 Energy performance of buildings – Calculation of energy use for space heating and cooling, national annex [STN EN ISO 13790/NA:2010 Energetická hospodárnosť budov. Výpočet potreby energie na vykurovanie a chladenie, národná príloha]	
		► Apartment blocks		STN EN ISO 13790/NA:2010 Energy performance of buildings – Calculation of energy use for space heating and cooling, national annex [STN EN ISO 13790/NA:2010 Energetická hospodárnosť budov. Výpočet potreby energie na vykurovanie a chladenie, národná príloha]	
2b	Guidance for recording occupancy (e.g. the number of people in a building and the time of day they are there)	<i>n/a</i>	<i>EN 16247-2 Energy audits buildings (Section 5.3.2 Information request)</i>	STN EN 16247-2:2016 Energy audits buildings (Section 5.3.2) [STN EN 16247-2:2016 Energetické audity. Časť 2: Budovy, § 5.3.2]	
2c	Guidance for collecting information on the building and its systems, perhaps as part of an energy audit e.g. details of air conditioning systems, lighting system, glazing	<i>n/a</i>	<i>EN 16247-2 Energy audits buildings Section 5.3 Collecting data, 5.3.2 Information request and Annex D</i>	STN EN 16247-2:2016 Energy audits buildings (Sections 5.3, 5.3.2, Annex D) [STN EN 16247-2:2016 Energetické audity. Časť 2: Budovy (§ 5.3, 5.3.2, príloha D)]	
2d	Guidance for extrapolating or consolidating data to a complete calendar year	<i>n/a</i>	<i>ISO 16346:2013 - Energy performance of buildings -- Assessment of overall energy performance (Section 8.2.2 Extrapolation to an integral number of years)</i>	STN EN 15603/NA:2012 Energy performance of buildings. The total energy requirement and definition of energy rating [STN EN 15603/NA:2012 Energetická hospodárnosť budov. Celková potreba energie a definície energetického hodnotenia]	
2e	Guidance for normalising data against relevant variables in order to compare energy performance under equivalent conditions e.g. baseline regression modelling	<i>n/a</i>	<i>ISO 50006:2014 - Energy management systems -- Measuring energy performance using energy baselines (EnB) and energy performance indicators (EnPI) -- General principles and guidance Annex D Normalising energy baselines using relevant variables</i>		

Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	SLOVAKIA
2f	A source of energy consumption benchmarks for different types of buildings	► Tertiary	<i>Buildings Performance Institute Europe's Data Hub for the Energy Performance of Buildings (see http://www.buildingsdata.eu/) .</i>		
		► Apartment blocks			
Savings calculations					
4a	Defining standards for energy modelling software (dynamic energy simulation)	► Tertiary	<i>Application of public domain or commercially available software that meets EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling, is validated according to the criteria in EN 15265:2007 Energy performance of buildings – Calculation of energy needs for space heating and cooling using dynamic methods – General criteria and validation procedures</i>	STN EN ISO 13790:2009 Energy performance of buildings – Calculation of energy use for space heating and cooling [STN EN ISO 13790:2009 Energetická hospodárnosť budov. Výpočet potreby energie na vykurovanie a chladenie]	
		► Apartment blocks		STN EN ISO 13790:2009 Energy performance of buildings – Calculation of energy use for space heating and cooling [STN EN ISO 13790:2009 Energetická hospodárnosť budov. Výpočet potreby energie na vykurovanie a chladenie]	STN EN 15265:2007 Energy performance of buildings – Calculation of energy needs for space heating and cooling using dynamic methods – General criteria and validation procedures [STN EN 15265:2007 Energetická hospodárnosť budov. Výpočet potreby energie na vykurovanie a chladenie. Všeobecné kritériá a postupy overovania]
4b	A national software certification scheme used to accredit individuals carrying out modelling (dynamic energy simulation)	► Tertiary	<i>Not available</i>		
		► Apartment blocks	<i>Not available</i>		
4d	Guidance for calculating savings when using a spreadsheet-based approach, rather than	► Tertiary	<i>EN 16212:2012 Energy Efficiency and Savings Calculation, Top-down and Bottom-up Methods (section 6)</i>	STN EN 16212:2013 Energy Efficiency and Savings Calculation, Top-down and Bottom-up Methods (section 6) [STN EN 16212:2013 Energetická účinnosť a výpočet úspor, metódy Top-down (zhora-nadol) a Bottom-up (zdola-nahor) (§ 6)]	

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	software	► Apartment blocks		STN EN 16212:2013 Energy Efficiency and Savings Calculation, Top-down and Bottom-up Methods (section 6) [STN EN 16212:2013 Energetická účinnosť a výpočet úspor, metódy Top-down (zhora-nadol) a Bottom-up (zdola-nahor) (§ 6)]	
	A national certification scheme for individuals carrying out spreadsheet-based savings calculations (rather than using software)	► Tertiary	<i>Not available</i>		
		► Apartment blocks	<i>Not available</i>		
	A guide to carrying out dynamic energy simulation for residential buildings	n/a	<i>ISO 13790:2008 Energy performance of buildings -- Calculation of energy use for space heating and cooling</i>	STN EN ISO 13790:2009 Energy performance of buildings – Calculation of energy use for space heating and cooling [STN EN ISO 13790:2009 Energetická hospodárnosť budov. Výpočet potreby energie na vykurovanie a chladenie]	
4e	A source of inflation values	n/a	<i>European Central Bank's Harmonised Index of Consumer Prices</i> (https://www.ecb.europa.eu/stats/prices/hicp/html/index.en.html)	National Slovak Bank website >> Statistics >> Macroeconomic indicators [Národná banka Slovenska, webová stránka >> Štatistika >> Makroekonomické ukazovatele]	
4f	Guidance for carrying out life-cycle cost analysis	n/a	<i>ISO 15686-5:2008 Buildings and constructed assets - Service-life planning - Part 5: Life-cycle costing</i>		
4g	A list of generally accepted lifetimes for energy conservation measures/technologies	n/a	<i>EN 15459:2007 Energy performance of buildings – Economic evaluation procedure for energy systems in buildings (Annex A)</i>	STN EN 15459:2009 Energy performance of buildings – Economic evaluation procedure for energy systems in buildings (Annex A) [STN EN 15459:2009 Energetická hospodárnosť budov. Postupy ekonomického hodnotenia energetických systémov v budovách (Príloha A)]	
4c	Guidance for producing energy audit reports	n/a	<i>EN 16247-2 Energy audits – Part 2: Buildings (section 5.6)</i>	Decree of Ministry of Economy No. 179/2015 Coll. Of the 6th July 2015 on the energy audit (§3, Annex 1 and Annex 2) [Vyhláška Ministerstva hospodárstva Slovenskej republiky 179/2015 Z.z. zo 6. júla 2015 o energetickom audite (§3, Príloha 1, Príloha 2)]	

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Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	SLOVAKIA
Design, construction and verification					
5a	Guidance for preparing systems manuals - these include guidance on how to operate and maintain systems e.g for new equipment installed	n/a	<i>EN 13460:2009 Maintenance – Documents for maintenance</i>	STN EN 13460:2009 Maintenance – Documents for maintenance [STN EN 13460:2009 Údržba. Dokumentácia údržby]	
Operations, maintenance and monitoring					
6a	Guidance for operating and maintaining new systems and equipment	n/a	<i>ISO 15331:2011 Criteria for design, management and control of maintenance services for buildings</i>	STN EN 15331:2012 Criteria for design, management and control of maintenance services for buildings [STN EN 15331:2012 Kritériá návrhu, manažérstva a riadenia činností údržby budov]	

SLOVENIA

Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	SLOVENIA
Baselining					
2a	Guidance for calculating accurate gross floor area (e.g. measuring from inside of walls, including all common areas, but excluding parking area)	► Tertiary	<i>EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling (section 3.2.6)</i>	SIST ISO 9836:2011 Performance standards in building - Definition and calculation of area and space indicators [SIST ISO 9836:2011 Standardi za lastnosti stavb - Definicija in računanje indikatorjev površine in prostornine]	
		► Apartment blocks		SIST ISO 9836:2011 Performance standards in building - Definition and calculation of area and space indicators [SIST ISO 9836:2011 Standardi za lastnosti stavb - Definicija in računanje indikatorjev površine in prostornine]	
2b	Guidance for recording occupancy (e.g. the number of people in a building and the time of day they are there)	n/a	<i>EN 16247-2 Energy audits buildings (Section 5.3.2 Information request)</i>	SIST EN 16247-2 Energy audits - Part 2: Buildings, Section 5.3.2 Information request [SIST EN 16247-2:2014 Energetske presoje - 2. del: Stavbe, 5.3.2]	
2c	Guidance for collecting information on the building and its systems, perhaps as part of an energy audit e.g. details of air conditioning systems, lighting system, glazing	n/a	<i>EN 16247-2 Energy audits buildings Section 5.3 Collecting data, 5.3.2 Information request and Annex D</i>	Methodology for implementation of the energy audit (2007), The Ministry of Environment and Spatial Planning [Metodologija izvedbe energetskega pregleda (2007), Ministrstvo za okolje in prostor]	
2d	Guidance for extrapolating or consolidating data to a complete calendar year	n/a	<i>ISO 16346:2013 - Energy performance of buildings -- Assessment of overall energy performance (Section 8.2.2 Extrapolation to an integral number of years)</i>		
2e	Guidance for normalising data against relevant variables in order to compare energy performance under equivalent conditions e.g. baseline regression modelling	n/a	<i>ISO 50006:2014 - Energy management systems -- Measuring energy performance using energy baselines (EnB) and energy performance indicators (EnPI) -- General principles and guidance Annex D Normalising energy baselines using relevant variables</i>		

ENERGY EFFICIENCY PERFORMANCE PROTOCOL

ANNEX A: INDEX OF NATIONAL RESOURCES

Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	SLOVENIA
2f	A source of energy consumption benchmarks for different types of buildings	► Tertiary	<i>Buildings Performance Institute Europe’s Data Hub for the Energy Performance of Buildings (see http://www.buildingsdata.eu/) .</i>		
		► Apartment blocks		Statistical Office of the Republic of Slovenia, Database SI-STAT, Energy consumption in households [Statistični urad RS, Podatkovni portal SI-STAT, Poraba energije in goriv v gospodinjstvih]	
Savings calculations					
4a	Defining standards for energy modelling software (dynamic energy simulation)	► Tertiary	<i>Application of public domain or commercially available software that meets EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling, is validated according to the criteria in EN 15265:2007 Energy performance of buildings – Calculation of energy needs for space heating and cooling using dynamic methods – General criteria and validation procedures</i>	SIST EN ISO 13790:2008 Energy performance of buildings - Calculation of energy use for space heating and cooling [SIST EN ISO 13790:2008 Energijske lastnosti stavb - Račun rabe energije za ogrevanje in hlajenje prostorov]	
		► Apartment blocks		SIST EN 15265:2007 Energy performance of buildings - Calculation of energy needs for space heating and cooling using dynamic methods - General criteria and validation procedures [SIST EN 15265:2007 Energijske značilnosti stavb - Računanje porabljene energije za segrevanje in hlajenje prostora z dinamično metodo - Splošna merila in validacija postopka]	SIST EN ISO 13790:2008 Energy performance of buildings - Calculation of energy use for space heating and cooling [SIST EN ISO 13790:2008 Energijske lastnosti stavb - Račun rabe energije za ogrevanje in hlajenje prostorov]
4b	A national software certification scheme used to accredit individuals carrying out modelling (dynamic energy simulation)	► Tertiary	<i>Not available</i>		
		► Apartment blocks	<i>Not available</i>		
4d	Guidance for calculating savings when using a spreadsheet-based approach, rather than	► Tertiary	<i>EN 16212:2012 Energy Efficiency and Savings Calculation, Top-down and Bottom-up Methods (section 6)</i>	Regulations establishing methods for determining energy savings (Official Gazette of RS, no. 67/15), Annex 1 Methods for calculating energy savings, renewable energy and CO2 reduction [Pravilnik o metodah za določanje prihrankov energije (Uradni list RS, št. 67/15), Priloga 1 Metode za izračun prihrankov energije, rabe obnovljivih virov energije in zmanjšanja izpustov CO2]	

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Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	SLOVENIA
	software	► Apartment blocks		Regulations establishing methods for determining energy savings (Official Gazette of RS, no. 67/15), Annex 1 Methods for calculating energy savings, renewable energy and CO2 reduction [Pravilnik o metodah za določanje prihrankov energije (Uradni list RS, št. 67/15), Priloga 1 Metode za izračun prihrankov energije, rabe obnovljivih virov energije in zmanjšanja izpustov CO2]	
	A national certification scheme for individuals carrying out spreadsheet-based savings calculations (rather than using software)	► Tertiary	<i>Not available</i>		
		► Apartment blocks	<i>Not available</i>		
	A guide to carrying out dynamic energy simulation for residential buildings	n/a	<i>ISO 13790:2008 Energy performance of buildings -- Calculation of energy use for space heating and cooling</i>	SIST EN ISO 13790:2008 Energy performance of buildings - Calculation of energy use for space heating and cooling [SIST EN ISO 13790:2008 Energijske lastnosti stavb - Račun rabe energije za ogrevanje in hlajenje prostorov]	
4e	A source of inflation values	n/a	<i>European Central Bank's Harmonised Index of Consumer Prices</i> (https://www.ecb.europa.eu/stats/prices/hicp/html/index.en.html)	Statistical Office of the Republic of Slovenia >> Data by sector >> Prices and Inflation >> Consumer Prices - Inflation [Republika Slovenija, Statistični Urad RS >> Podatki po področjih >> Cene in inflacija >> Cene življenjskih potrebščin – inflacija]	
4f	Guidance for carrying out life-cycle cost analysis	n/a	<i>ISO 15686-5:2008 Buildings and constructed assets - Service-life planning - Part 5: Life-cycle costing</i>		
4g	A list of generally accepted lifetimes for energy conservation measures/technologies	n/a	<i>EN 15459:2007 Energy performance of buildings – Economic evaluation procedure for energy systems in buildings (Annex A)</i>	Regulations establishing methods for determining energy savings (Official Gazette of RS, no. 67/15), Annex 2 Lifespan of energy efficiency improvement measures [Pravilnik o metodah za določanje prihrankov energije (Uradni list RS, št. 67/15), Priloga 2 Življenjska doba ukrepov za izboljšanje energetske učinkovitosti]	
4c	Guidance for producing energy audit reports	n/a	<i>EN 16247-2 Energy audits – Part 2: Buildings (section 5.6)</i>	Methodology for implementation of the energy audit (2007), The Ministry of Environment and Spatial Planning, Sections 3.4, 3.5, Annexes 3, 4 [Metodologija izvedbe energetskega pregleda (2007), Ministrstvo za okolje in prostor, 3.4, 3.5, Priloga 3, Priloga 4]	

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Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	SLOVENIA
Design, construction and verification					
5a	Guidance for preparing systems manuals - these include guidance on how to operate and maintain systems e.g for new equipment installed	n/a	<i>EN 13460:2009 Maintenance – Documents for maintenance</i>	SIST EN 13460:2009 Maintenance - Documentation for maintenance [SIST EN 13460:2009 Vzdrževanje - Dokumentacija za vzdrževanje]	
Operations, maintenance and monitoring					
6a	Guidance for operating and maintaining new systems and equipment	n/a	<i>ISO 15331:2011 Criteria for design, management and control of maintenance services for buildings</i>	SIST EN 15331:2011 Criteria for design, management and control of maintenance services for buildings [SIST EN 15331:2011 Merila za načrtovanje, upravljanje in kontrolo storitev vzdrževanja stavb]	

SPAIN

Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	SPAIN
Baselining					
2a	Guidance for calculating accurate gross floor area (e.g. measuring from inside of walls, including all common areas, but excluding parking area)	► Tertiary	<i>EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling (section 3.2.6)</i>	UNE-EN ISO 13790:2011 Energy performance of buildings - Calculation of energy use for space heating and cooling, Section 3.2.6 [UNE-EN ISO 13790:2011 Eficiencia energética de los edificios. Cálculo del consumo de energía para calefacción y refrigeración de espacios, 3.2.6]	
		► Apartment blocks		UNE-EN ISO 13790:2011 Energy performance of buildings - Calculation of energy use for space heating and cooling, Section 3.2.6 [UNE-EN ISO 13790:2011 Eficiencia energética de los edificios. Cálculo del consumo de energía para calefacción y refrigeración de espacios, 3.2.6]	
2b	Guidance for recording occupancy (e.g. the number of people in a building and the time of day they are there)	n/a	<i>EN 16247-2 Energy audits buildings (Section 5.3.2 Information request)</i>	UNE-EN 16247-2:2014 Energy audits - Part 2: Buildings, Section 5.3.2 [UNE-EN 16247-2:2014 Audits énergétiques - Partie 2: Bâtiments, 5.3.2]	
2c	Guidance for collecting information on the building and its systems, perhaps as part of an energy audit e.g. details of air conditioning systems, lighting system, glazing	n/a	<i>EN 16247-2 Energy audits buildings Section 5.3 Collecting data, 5.3.2 Information request and Annex D</i>	UNE-EN 16247-2:2014 Energy audits - Part 2: Buildings, Section 5.3, 5.3.2, Annex D [UNE-EN 16247-2:2014 Audits énergétiques - Partie 2: Bâtiments, 5.3, 5.3.2, Anexo D]	
2d	Guidance for extrapolating or consolidating data to a complete calendar year	n/a	<i>ISO 16346:2013 - Energy performance of buildings -- Assessment of overall energy performance (Section 8.2.2 Extrapolation to an integral number of years)</i>		
2e	Guidance for normalising data against relevant variables in order to compare energy performance under equivalent conditions e.g. baseline regression modelling	n/a	<i>ISO 50006:2014 - Energy management systems -- Measuring energy performance using energy baselines (EnB) and energy performance indicators (EnPI) -- General principles and guidance Annex D Normalising energy baselines using relevant variables</i>		

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Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	SPAIN
2f	A source of energy consumption benchmarks for different types of buildings	► Tertiary	<i>Buildings Performance Institute Europe’s Data Hub for the Energy Performance of Buildings (see http://www.buildingsdata.eu/)</i> .		
		► Apartment blocks			
Savings calculations					
4a	Defining standards for energy modelling software (dynamic energy simulation)	► Tertiary	<i>Application of public domain or commercially available software that meets EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling, is validated according to the criteria in EN 15265:2007 Energy performance of buildings – Calculation of energy needs for space heating and cooling using dynamic methods – General criteria and validation procedures</i>	UNE-EN ISO 13790:2011 Energy performance of buildings - Calculation of energy use for space heating and cooling [UNE-EN ISO 13790:2011 Eficiencia energética de los edificios. Cálculo del consumo de energía para calefacción y refrigeración de espacios]	
		► Apartment blocks		UNE-EN ISO 13790:2011 Energy performance of buildings - Calculation of energy use for space heating and cooling [UNE-EN ISO 13790:2011 Eficiencia energética de los edificios. Cálculo del consumo de energía para calefacción y refrigeración de espacios]	
4b	A national software certification scheme used to accredit individuals carrying out modelling (dynamic energy simulation)	► Tertiary	<i>Not available</i>		
		► Apartment blocks	<i>Not available</i>		
4d	Guidance for calculating savings when using a spreadsheet-based approach, rather than software	► Tertiary	<i>EN 16212:2012 Energy Efficiency and Savings Calculation, Top-down and Bottom-up Methods (section 6)</i>	UNE-EN 16212:2013 Energy Efficiency and Savings Calculation, Top-down and Bottom-up Methods [UNE-EN 16212:2013 Eficiencia energética y cálculo de ahorros. Métodos descendentes y ascendentes]	
		► Apartment blocks		UNE-EN 16212:2013 Energy Efficiency and Savings Calculation, Top-down and Bottom-up Methods [UNE-EN 16212:2013 Eficiencia energética y cálculo de ahorros. Métodos descendentes y ascendentes]	
	A national certification scheme for individuals	► Tertiary	<i>Not available</i>	Building Energy Auditor certification, Association of Energy Efficiency (a3e) [Curso Auditor Energético en Edificación, Asociación de Empresas de Eficiencia Energética (a3e)]	

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Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	SPAIN
	carrying out spreadsheet-based savings calculations (rather than using software)	► Apartment blocks	<i>Not available</i>	Building Energy Auditor certification, Association of Energy Efficiency (a3e) [Curso Auditor Energético en Edificación, Asociación de Empresas de Eficiencia Energética (a3e)]	
	A guide to carrying out dynamic energy simulation for residential buildings	n/a	<i>ISO 13790:2008 Energy performance of buildings -- Calculation of energy use for space heating and cooling</i>	Manual of the technical basis of the energy certification of existing buildings CE3 (IDAE) [Manual de fundamentos técnicos de calificación energética de edificios existentes CE3 (IDAE)]	
4e	A source of inflation values	n/a	<i>European Central Bank's Harmonised Index of Consumer Prices</i> (https://www.ecb.europa.eu/stats/prices/hicp/html/index.en.html)	Spanish Statistical Office (INE) >> Economic indicators IMF >> Consumer Price Index (CPI) [Instituto Nacional de Estadística (INE) >> Indicadores económicos. FMI >> Índice de Precios de Consumo (CPI)]	
4f	Guidance for carrying out life-cycle cost analysis	n/a	<i>ISO 15686-5:2008 Buildings and constructed assets - Service-life planning - Part 5: Life-cycle costing</i>		
4g	A list of generally accepted lifetimes for energy conservation measures/technologies	n/a	<i>EN 15459:2007 Energy performance of buildings – Economic evaluation procedure for energy systems in buildings (Annex A)</i>		
4c	Guidance for producing energy audit reports	n/a	<i>EN 16247-2 Energy audits – Part 2: Buildings (section 5.6)</i>	Scope of Energy Audits guide (a3e) [Alcance de las Auditorías Energéticas (a3e)]	
Design, construction and verification					
5a	Guidance for preparing systems manuals - these include guidance on how to operate and maintain systems e.g for new equipment installed	n/a	<i>EN 13460:2009 Maintenance – Documents for maintenance</i>	UNE-EN 13460:2009 Maintenance - Documentation for maintenance [UNE-EN 13460:2009 Mantenimiento. Documentos para el mantenimiento]	
Operations, maintenance and monitoring					
6a	Guidance for operating and maintaining new systems and equipment	n/a	<i>ISO 15331:2011 Criteria for design, management and control of maintenance services for buildings</i>	Decree 165/2006, of September 19, by which the model, the formalities and the contents of the Building Book are determined [Decreto 165/2006, de 19 de septiembre, por el que se determina el modelo, las formalidades y contenido del Libro del Edificio]	

SWEDEN

Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	SWEDEN
Baselining					
2a	Guidance for calculating accurate gross floor area (e.g. measuring from inside of walls, including all common areas, but excluding parking area)	► Tertiary	<i>EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling (section 3.2.6)</i>	SS 21054:2009 Area and volume of buildings - Terminology and measurement [SS 21054:2009 Area och volym för husbyggnader - Terminologi och mätregler]	
		► Apartment blocks		SS 21054:2009 Area and volume of buildings - Terminology and measurement [SS 21054:2009 Area och volym för husbyggnader - Terminologi och mätregler]	
2b	Guidance for recording occupancy (e.g. the number of people in a building and the time of day they are there)	n/a	<i>EN 16247-2 Energy audits buildings (Section 5.3.2 Information request)</i>	SS-EN 16247-2:2014 Energy audits - Part 2: Buildings [SS-EN 16247-2:2014 Energikartläggning - Del 2: Byggnader]	
2c	Guidance for collecting information on the building and its systems, perhaps as part of an energy audit e.g. details of air conditioning systems, lighting system, glazing	n/a	<i>EN 16247-2 Energy audits buildings Section 5.3 Collecting data, 5.3.2 Information request and Annex D</i>	SIS HB 10 Energy audits of buildings - apartment buildings and non-residential buildings Handbook [SIS HB 10 Energibesiktning av byggnader - flerbostadshus och lokaler]	
2d	Guidance for extrapolating or consolidating data to a complete calendar year	n/a	<i>ISO 16346:2013 - Energy performance of buildings -- Assessment of overall energy performance (Section 8.2.2 Extrapolation to an integral number of years)</i>		
2e	Guidance for normalising data against relevant variables in order to compare energy performance under equivalent conditions e.g. baseline regression modelling	n/a	<i>ISO 50006:2014 - Energy management systems -- Measuring energy performance using energy baselines (EnB) and energy performance indicators (EnPI) -- General principles and guidance Annex D Normalising energy baselines using relevant variables</i>		

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Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	SWEDEN
2f	A source of energy consumption benchmarks for different types of buildings	► Tertiary	<i>Buildings Performance Institute Europe's Data Hub for the Energy Performance of Buildings (see http://www.buildingsdata.eu/) .</i>		
		► Apartment blocks		Statistics Sweden (SCB) >> Finding Statistics >> Energy >> Energy supply and use >> Energy statistics for multi-dwelling buildings / one- and two dwelling buildings [Statistiska centralbyrån >> Hiita statistic >> Energi >> Tillförsel och användning av energi >> Energistatistik för flerbostadshus / Energistatistik för småhus]	
Savings calculations					
4a	Defining standards for energy modelling software (dynamic energy simulation)	► Tertiary	<i>Application of public domain or commercially available software that meets EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling, is validated according to the criteria in EN 15265:2007 Energy performance of buildings – Calculation of energy needs for space heating and cooling using dynamic methods – General criteria and validation procedures</i>	SS-EN ISO 13790:2008 Energy performance of buildings - Calculation of energy use for space heating and cooling [SS-EN ISO 13790:2008 Byggnaders energiprestanda - Beräkning av energianvändning för uppvärmning och kylning]	
		► Apartment blocks		SS-EN 15265:2007 Energy performance of buildings - Calculation of energy needs for space heating and cooling using dynamic methods - General criteria and validation procedures [SS-EN 15265:2007 Byggnaders energiprestanda - Dynamiska metoder för beräkning av uppvärmningsbehov och kylbehov - Krav och valideringsmetoder] SS-EN ISO 13790:2008 Energy performance of buildings - Calculation of energy use for space heating and cooling [SS-EN ISO 13790:2008 Byggnaders energiprestanda - Beräkning av energianvändning för uppvärmning och kylning] SS-EN 15265:2007 Energy performance of buildings - Calculation of energy needs for space heating and cooling using dynamic methods - General criteria and validation procedures [SS-EN 15265:2007 Byggnaders energiprestanda - Dynamiska metoder för beräkning av uppvärmningsbehov och kylbehov - Krav och valideringsmetoder]	
4b	A national software certification scheme used to accredit individuals carrying out modelling (dynamic energy simulation)	► Tertiary	<i>Not available</i>		
		► Apartment blocks	<i>Not available</i>		
4d	Guidance for calculating savings when using a spreadsheet-based approach, rather than	► Tertiary	<i>EN 16212:2012 Energy Efficiency and Savings Calculation, Top-down and Bottom-up Methods (section 6)</i>	SIS HB 10 Energy audits of buildings - apartment buildings and non-residential buildings Handbook, Section 3 Calculation of cost-effective energy measures [SIS HB 10 Energibesiktning av byggnader - flerbostadshus och lokaler, 3 Beräkning av kostnadseffektiva energiåtgärder]	

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Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	SWEDEN
	software	► Apartment blocks		SIS HB 10 Energy audits of buildings - apartment buildings and non-residential buildings Handbook, Section 3 Calculation of cost-effective energy measures [SIS HB 10 Energibesiktning av byggnader - flerbostadshus och lokaler, 3 Beräkning av kostnadseffektiva energiåtgärder]	
	A national certification scheme for individuals carrying out spreadsheet-based savings calculations (rather than using software)	► Tertiary	<i>Not available</i>		
		► Apartment blocks	<i>Not available</i>		
	A guide to carrying out dynamic energy simulation for residential buildings	n/a	<i>ISO 13790:2008 Energy performance of buildings -- Calculation of energy use for space heating and cooling</i>	SS-EN ISO 13790:2008 Energy performance of buildings - Calculation of energy use for space heating and cooling [SS-EN ISO 13790:2008 Byggnaders energiprestanda - Beräkning av energianvändning för uppvärmning och kylning]	
4e	A source of inflation values	n/a	<i>European Central Bank's Harmonised Index of Consumer Prices</i> (https://www.ecb.europa.eu/stats/prices/hicp/html/index.en.html)	Statistics Sweden (SCB) >> Finding Statistics >> Prices and Consumption >> Consumer Price Index [Statistiska centralbyrån >> Hitta statistik >> Priser och konsumtion >> Hushållens inköpsplaner Konsumentprisindex Köpkraftspariteter]	
4f	Guidance for carrying out life-cycle cost analysis	n/a	<i>ISO 15686-5:2008 Buildings and constructed assets - Service-life planning - Part 5: Life-cycle costing</i>	The Total Concept method, Guidebook for Implementation and Quality Assurance (v 1.2 2015), Chapter 3: The economic principles of the Total Concept method [Totalmetodiken för omfattande energieffektivisering i lokalbyggnade, Guidebook for Implementation and Quality assurance, Chapter 3]	
4g	A list of generally accepted lifetimes for energy conservation measures/technologies	n/a	<i>EN 15459:2007 Energy performance of buildings – Economic evaluation procedure for energy systems in buildings (Annex A)</i>	The Total Concept method, Guidebook for Implementation and Quality Assurance (v 1.2 2015), Appendix 3. Examples of recommended economic lifetimes for different measures [Totalmetodiken för omfattande energieffektivisering i lokalbyggnader, Guidebook for Implementation and Quality assurance, Appendix 3]	
4c	Guidance for producing energy audit reports	n/a	<i>EN 16247-2 Energy audits – Part 2: Buildings (section 5.6)</i>	SIS HB 10 Energy audits of buildings - apartment buildings and non-residential buildings Handbook, Appendix 3: Structure of the energy audit report [SIS HB 10 Energibesiktning av byggnader - flerbostadshus och lokaler, Bilaga 3: Struktur för energibesiktningsrapport]	

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Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	SWEDEN
Design, construction and verification					
5a	Guidance for preparing systems manuals - these include guidance on how to operate and maintain systems e.g for new equipment installed	n/a	<i>EN 13460:2009 Maintenance – Documents for maintenance</i>	SS-EN 13460:2009 Maintenance - Documentation for maintenance [SS-EN 13460:2009 Underhåll - Underhållsdokumentation]	
Operations, maintenance and monitoring					
6a	Guidance for operating and maintaining new systems and equipment	n/a	<i>ISO 15331:2011 Criteria for design, management and control of maintenance services for buildings</i>	SS-EN 15331:2011 Criteria for design, management and control of maintenance services for buildings [SS-EN 15331:2011 Underhållsteknik - Kriterier för utförande, förvaltning och kontroll av underhållstjänster för byggnader]	

SWITZERLAND

Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	SWITZERLAND
Baselining					
2a	Guidance for calculating accurate gross floor area (e.g. measuring from inside of walls, including all common areas, but excluding parking area)	► Tertiary	<i>EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling (section 3.2.6)</i>	SIA 416 :2003 Areas and volumes of buildings [SIA 416 :2003 Flächen und Volumen von Gebäuden]	
		► Apartment blocks		SIA 416 :2003 Areas and volumes of buildings [SIA 416 :2003 Flächen und Volumen von Gebäuden]	
2b	Guidance for recording occupancy (e.g. the number of people in a building and the time of day they are there)	n/a	<i>EN 16247-2 Energy audits buildings (Section 5.3.2 Information request)</i>	SIA 380/1:2007 Thermal energy in buildings, §3.5 Input data [SIA 380/1:2007 Thermische Energie im Hochbau, §3.5 Eingabedaten]	
2c	Guidance for collecting information on the building and its systems, perhaps as part of an energy audit e.g. details of air conditioning systems, lighting system, glazing	n/a	<i>EN 16247-2 Energy audits buildings Section 5.3 Collecting data, 5.3.2 Information request and Annex D</i>		
2d	Guidance for extrapolating or consolidating data to a complete calendar year	n/a	<i>ISO 16346:2013 - Energy performance of buildings -- Assessment of overall energy performance (Section 8.2.2 Extrapolation to an integral number of years)</i>		
2e	Guidance for normalising data against relevant variables in order to compare energy performance under equivalent conditions e.g. baseline regression modelling	n/a	<i>ISO 50006:2014 - Energy management systems -- Measuring energy performance using energy baselines (EnB) and energy performance indicators (EnPI) -- General principles and guidance Annex D Normalising energy baselines using relevant variables</i>		

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Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	SWITZERLAND
2f	A source of energy consumption benchmarks for different types of buildings	► Tertiary	<i>Buildings Performance Institute Europe's Data Hub for the Energy Performance of Buildings (see http://www.buildingsdata.eu/) .</i>		
		► Apartment blocks			
Savings calculations					
4a	Defining standards for energy modelling software (dynamic energy simulation)	► Tertiary	<i>Application of public domain or commercially available software that meets EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling, is validated according to the criteria in EN 15265:2007 Energy performance of buildings – Calculation of energy needs for space heating and cooling using dynamic methods – General criteria and validation procedures</i>	SIA 382/2:2011 Air-conditioned buildings - power and energy needs [SIA 382/2:2011 Klimatisierte Gebäude - Leistungs- und Energiebedarf]	
		► Apartment blocks		SIA 2044:2011 Air-conditioned building - standard methods of calculating the performance and energy needs [SIA 2044:2011 Klimatisierte Gebäude - Standard-Berechnungsverfahren für den Leistungs- und Energiebedarf]	
4b	A national software certification scheme used to accredit individuals carrying out modelling (dynamic energy simulation)	► Tertiary	<i>Not available</i>		
		► Apartment blocks	<i>Not available</i>		
4d	Guidance for calculating savings when using a spreadsheet-based approach, rather than software	► Tertiary	<i>EN 16212:2012 Energy Efficiency and Savings Calculation, Top-down and Bottom-up Methods (section 6)</i>	SIA 2040:2011 SIA path to energy efficiency [SIA 2040:2011 (D) SIA-Effizienzpfad Energie / (F) La voie SIA vers l'efficacité énergétique / (I) La via SIA verso l'efficienza energetica]	
		► Apartment blocks		SIA 2040:2011 SIA path to energy efficiency [SIA 2040:2011 (D) SIA-Effizienzpfad Energie / (F) La voie SIA vers l'efficacité énergétique / (I) La via SIA verso l'efficienza energetica]	
	A national certification scheme for individuals carrying out spreadsheet-based savings calculations (rather than using software)	► Tertiary	<i>Not available</i>	act Energy Specialist accreditation [act Energiespezialist/in Akkreditierung]	
		► Apartment blocks	<i>Not available</i>		

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Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	SWITZERLAND
	A guide to carrying out dynamic energy simulation for residential buildings	n/a	<i>ISO 13790:2008 Energy performance of buildings -- Calculation of energy use for space heating and cooling</i>		
4e	A source of inflation values	n/a	<i>European Central Bank's Harmonised Index of Consumer Prices</i> (https://www.ecb.europa.eu/stats/prices/hicp/html/index.en.html)	Swiss Federal Statistical Office website >> National consumer price index >> Inflation forecasts [Bundesamt für Statistik >> Landesindex der Konsumentenpreise >> Teuerungsprognosen]	
4f	Guidance for carrying out life-cycle cost analysis	n/a	<i>ISO 15686-5:2008 Buildings and constructed assets - Service-life planning - Part 5: Life-cycle costing</i>	IFMA Switzerland, Lifecycle cost evaluation of property, Model incl. Application Tool [IFMA Schweiz, Lebenszykluskosten-Ermittlung von Immobilien, Modell inkl. Anwendungstool]	
4g	A list of generally accepted lifetimes for energy conservation measures/technologies	n/a	<i>EN 15459:2007 Energy performance of buildings – Economic evaluation procedure for energy systems in buildings (Annex A)</i>	SIA 480:2016 Business case for investment in buildings, Annex B lifetimes [SIA 480:2016 Wirtschaftlichkeitsrechnung für Investitionen im Hochbau, Anhang B Nutzungsdauer]	
4c	Guidance for producing energy audit reports	n/a	<i>EN 16247-2 Energy audits – Part 2: Buildings (section 5.6)</i>	SN EN 16247-2:2014 Energy audits - Part 2: Buildings (section 5.6) [SN EN 16247-2:2014 Energy audits - Part 2: Buildings (§), available in German, English and French]	
Design, construction and verification					
5a	Guidance for preparing systems manuals - these include guidance on how to operate and maintain systems e.g for new equipment installed	n/a	<i>EN 13460:2009 Maintenance – Documents for maintenance</i>	KBOB/IPB recommendation document on Building documentation in building construction [KBOB/IPB Empfehlung Bauwerksdokumentation im Hochbau]	
Operations, maintenance and monitoring					
6a	Guidance for operating and maintaining new systems and equipment	n/a	<i>ISO 15331:2011 Criteria for design, management and control of maintenance services for buildings</i>	Directive SWKI RE101-01 (2003-1) Maintenance of cooling systems [Richtlinie SWKI RE101-01 (2003-1) Instandhaltung kältetechnischer Anlagen] Directive SWKI HE101-01 (2003-2) Maintenance of heating systems [Richtlinie SWKI HE101-01 (2003-2) Instandhaltung heizungstechnischer Anlagen]	

UNITED KINGDOM, THE

Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	THE UNITED KINGDOM
Baselining					
2a	Guidance for calculating accurate gross floor area (e.g. measuring from inside of walls, including all common areas, but excluding parking area)	► Tertiary	<i>EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling (section 3.2.6)</i>	CIBSE TM47: Operational Ratings and Display Energy Certificates	
		► Apartment blocks		Improving the energy efficiency of our buildings: A guide to Energy Performance Certificates for the marketing, sale and let of dwellings (Annex A)	
2b	Guidance for recording occupancy (e.g. the number of people in a building and the time of day they are there)	<i>n/a</i>	<i>EN 16247-2 Energy audits buildings (Section 5.3.2 Information request)</i>	CIBSE Guide F: Energy Efficiency in Buildings (Section 19)	
2c	Guidance for collecting information on the building and its systems, perhaps as part of an energy audit e.g. details of air conditioning systems, lighting system, glazing	<i>n/a</i>	<i>EN 16247-2 Energy audits buildings Section 5.3 Collecting data, 5.3.2 Information request and Annex D</i>	CIBSE Guide F: Energy Efficiency in Buildings (Section 18)	
2d	Guidance for extrapolating or consolidating data to a complete calendar year	<i>n/a</i>	<i>ISO 16346:2013 - Energy performance of buildings -- Assessment of overall energy performance (Section 8.2.2 Extrapolation to an integral number of years)</i>	CIBSE Guide F: Energy Efficiency in Buildings (Section 19)	
2e	Guidance for normalising data against relevant variables in order to compare energy performance under equivalent conditions e.g. baseline regression modelling	<i>n/a</i>	<i>ISO 50006:2014 - Energy management systems -- Measuring energy performance using energy baselines (EnB) and energy performance indicators (EnPI) -- General principles and guidance Annex D Normalising energy baselines using relevant variables</i>	CIBSE Guide F: Energy Efficiency in Buildings (Section 19)	

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Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	THE UNITED KINGDOM
2f	A source of energy consumption benchmarks for different types of buildings	► Tertiary	<i>Buildings Performance Institute Europe’s Data Hub for the Energy Performance of Buildings (see http://www.buildingsdata.eu/) .</i>	CIBSE TM46 Energy Benchmarks	
		► Apartment blocks			
Savings calculations					
4a	Defining standards for energy modelling software (dynamic energy simulation)	► Tertiary	<i>Application of public domain or commercially available software that meets EN ISO 13790:2008 Energy performance of buildings – Calculation of energy use for space heating and cooling, is validated according to the criteria in EN 15265:2007 Energy performance of buildings – Calculation of energy needs for space heating and cooling using dynamic methods – General criteria and validation procedures</i>	DCLG approval procedure for Detailed Simulation Models (DSMs) software	
		► Apartment blocks		CIBSE TM33: Tests for Software Accreditation & Verification	
4b	A national software certification scheme used to accredit individuals carrying out modelling (dynamic energy simulation)	► Tertiary	<i>Not available</i>	CIBSE Low Carbon Energy Assessor (LCEA) Level 4 or 5 certification	
		► Apartment blocks	<i>Not available</i>		
4d	Guidance for calculating savings when using a spreadsheet-based approach, rather than software	► Tertiary	<i>EN 16212:2012 Energy Efficiency and Savings Calculation, Top-down and Bottom-up Methods (section 6)</i>		
		► Apartment blocks			
	A national certification scheme for individuals carrying out spreadsheet-based savings calculations (rather than using software)	► Tertiary	<i>Not available</i>	CIBSE low carbon consultant accreditation	
		► Apartment blocks	<i>Not available</i>	CIBSE low carbon consultant accreditation	

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Protocol cross ref	Resource type	Building type	Relevant European or International Resource	National resource title	THE UNITED KINGDOM
	A guide to carrying out dynamic energy simulation for residential buildings	n/a	<i>ISO 13790:2008 Energy performance of buildings -- Calculation of energy use for space heating and cooling</i>		
4e	A source of inflation values	n/a	<i>European Central Bank's Harmonised Index of Consumer Prices</i> (https://www.ecb.europa.eu/stats/prices/hicp/html/index.en.html)	Office for National Statistics >> Consumer Price Inflation	
4f	Guidance for carrying out life-cycle cost analysis	n/a	<i>ISO 15686-5:2008 Buildings and constructed assets - Service-life planning - Part 5: Life-cycle costing</i>	UK Office of Government Commerce (OGC), Achieving Excellence Procurement Guides, 07 Whole-life costing and cost management	
4g	A list of generally accepted lifetimes for energy conservation measures/technologies	n/a	<i>EN 15459:2007 Energy performance of buildings – Economic evaluation procedure for energy systems in buildings (Annex A)</i>		
4c	Guidance for producing energy audit reports	n/a	<i>EN 16247-2 Energy audits – Part 2: Buildings (section 5.6)</i>	CIBSE Guide F (section 18.9)	
Design, construction and verification					
5a	Guidance for preparing systems manuals - these include guidance on how to operate and maintain systems e.g for new equipment installed	n/a	<i>EN 13460:2009 Maintenance – Documents for maintenance</i>	CIBSE Guide M section 9	
Operations, maintenance and monitoring					
6a	Guidance for operating and maintaining new systems and equipment	n/a	<i>ISO 15331:2011 Criteria for design, management and control of maintenance services for buildings</i>	CIBSE Guide M	

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