

TAKING
COOPERATION
FORWARD



University of Maribor, Faculty of Energy Technology (SI)

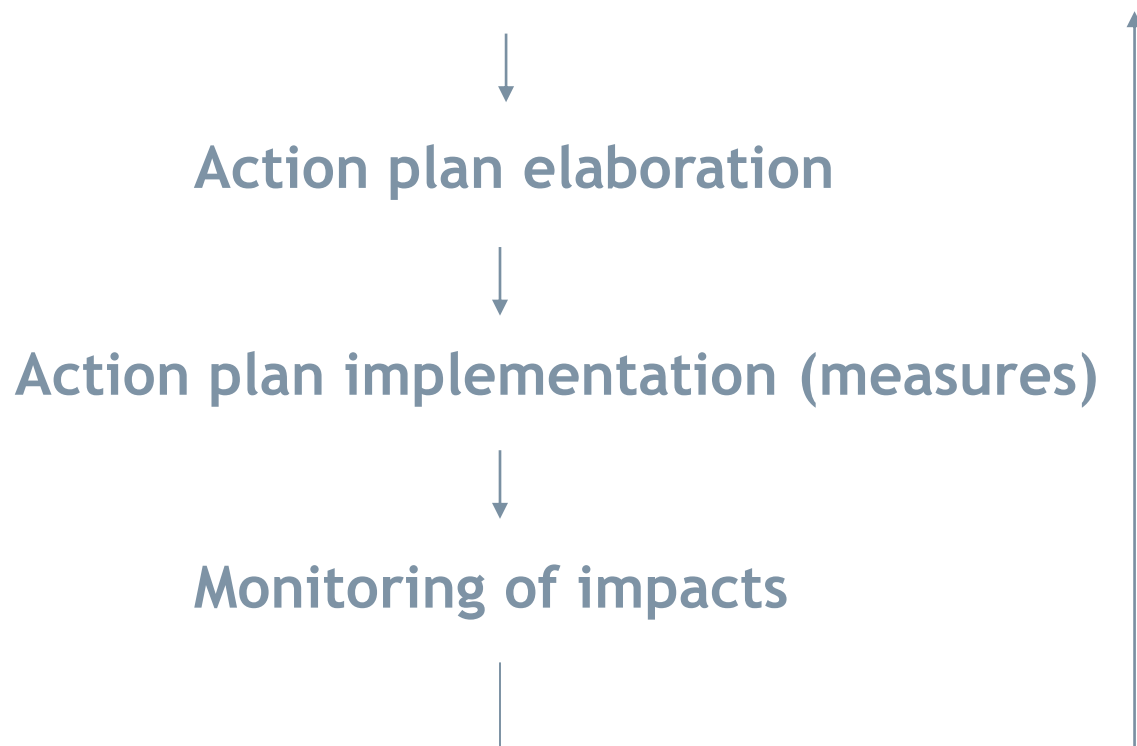


Action Plan for Energy Efficiency in Public Building Stock

Assoc. Prof. Peter Vrtič



Energy audit (if possible with the support of monitoring system)



ACTION PLAN IN PUBLIC BUILDINGS - NATIONAL ACTION PLAN LEVEL

National action plan for energy efficiency from 2018 to the end of 2020

Horizontal measures

- Energy contracting
- System of obligatory achievements of energy savings
- Training and licencing of independent experts
- Target oriented trainings
- Informing and awareness raising for target public
- EE contents included in broader process of education
- Environmental tax on air pollution with CO2 emission

Multisectoral measures

- Amendments and supplements to regulations on the energy performance of buildings
- Quality assurance scheme for energy audits
- Heating and cooling strategy, heat map
- Support Scheme for Electricity Generated from RES and CHP
- Promoting the optimization of energy systems operation
- Holistic monitoring of energy renovation of buildings

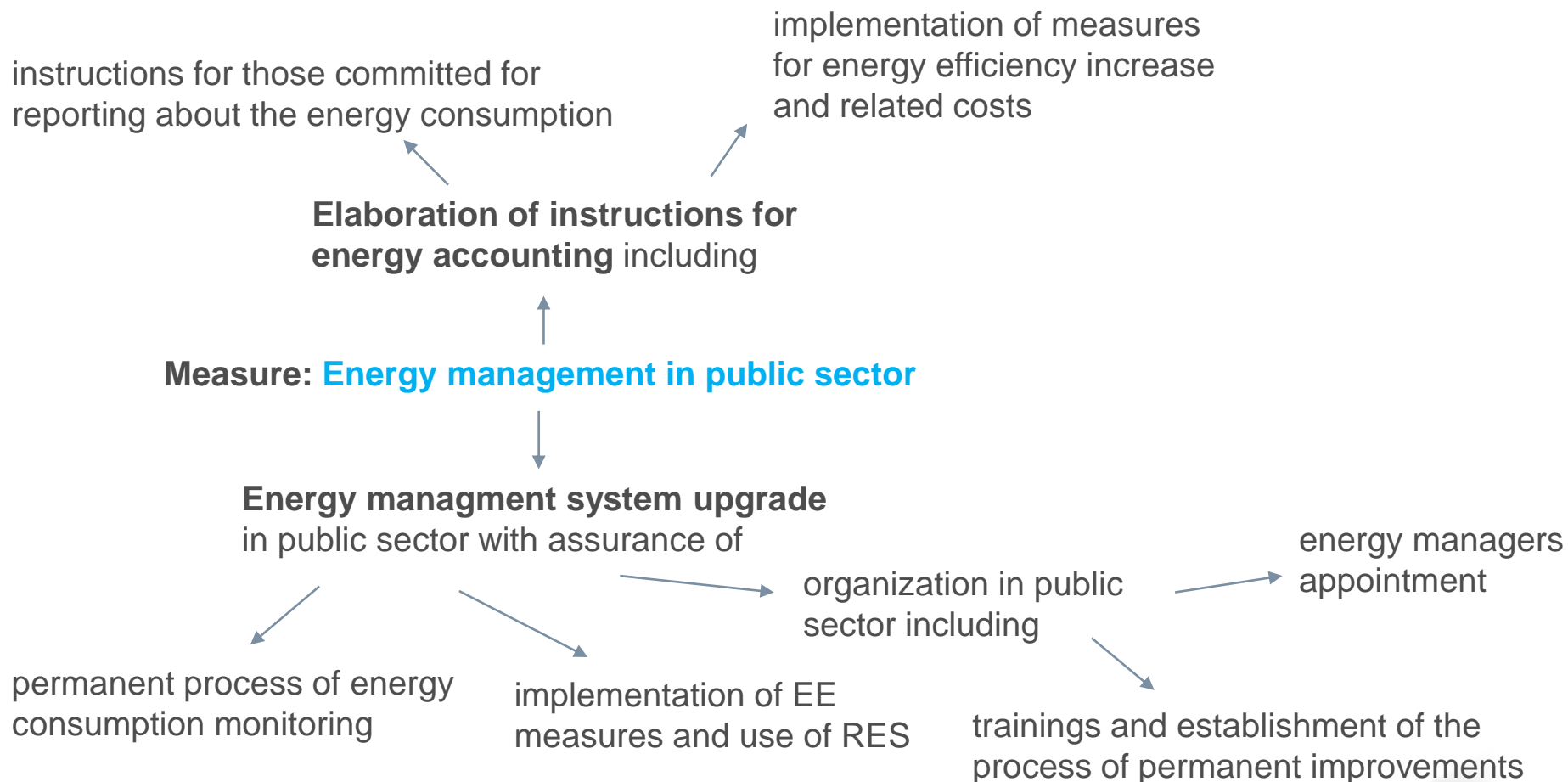
Measures for Energy efficiency in public sector

- Public sector energy management
- Quality management
- Financial incentives for comprehensive energy renovation and sustainable construction of buildings in the public sector
- Renovation of cultural heritage buildings and other specific groups of buildings
- Project office
- Green public procurements
- Creating sustainable criteria for buildings
- Use of information-based design in public tenders

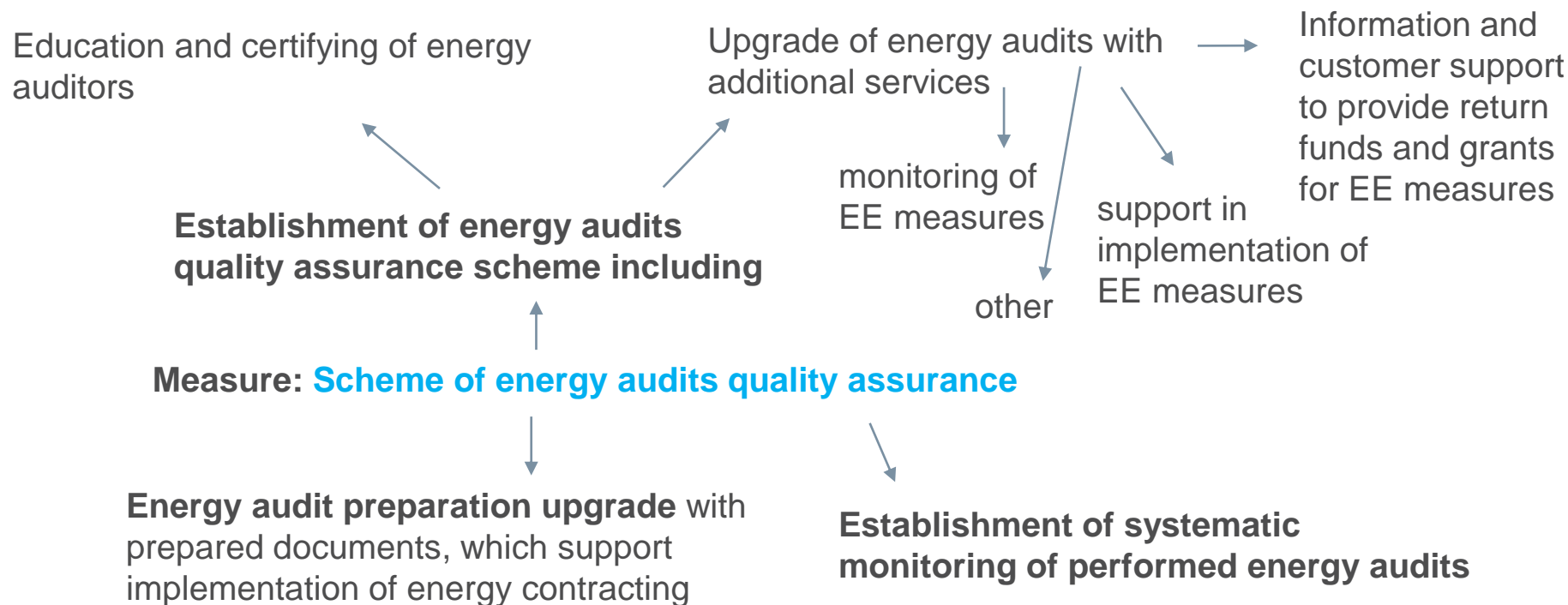
The goal in Slovenia is that until 2020 the share of primary energy must not be increased according to the year 2012 for more than 2%.



ACTION PLAN IN PUBLIC BUILDINGS - NATIONAL ACTION PLAN LEVEL



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The goal is quality and usefulness of energy audits.



ACTION PLAN IN PUBLIC BUILDINGS - NATIONAL ACTION PLAN LEVEL

Preparation and implementation of long-term communication programmes of informing and raising awareness about EE and use of RES for public sector



Measure: Informing and raising awareness of target public



Establishment of systematic impacts
monitoring, achieved with performing
informative and awareness raising
activities



ACTION PLAN IN PUBLIC BUILDINGS - IMPLEMENTATION ON LOCAL LEVEL

Name of the owner	Name of the building	Type of the building	Location of the building
Municipality of Velenje	Kindergarten "Najdihojca"	Educational building	Prešernova cesta 3, 3320 Velenje, Slovenia
Type of instrument (energy strategy, plan), which can be supported by the AP	<ul style="list-style-type: none"> - SEAP, approved in 2011 with the target of reducing CO₂ emissions by 20% by 2020 - through the implementation of energy efficiency measures, exploitation of renewable energy sources (RES), effective energy management and control, education and other measures; - Sustainable Urban Strategy by 2023 approved in 2015 - management of natural resources (including energy renovation of buildings of the public sector) 		
Write your goal statement here	<ul style="list-style-type: none"> - Reducing energy consumption by 5-10% by 2020 (reference year: 2003); - Reducing CO₂ emissions through measures in the field of electricity and heat; - educating, rising awareness and informing users of public buildings; 		



ACTION PLAN IN PUBLIC BUILDINGS - IMPLEMENTATION ON LOCAL LEVEL

Main tools to introduce and implement

- ❑ Together project library
- ❑ Integrated training materials related to the energy efficiency in public buildings (available in the project website)
- ❑ Communication tools for the engagement of the users (origami, tutorials, colouring book, Energy TIPS for visitors, for those responsible for maintenance and for owners & managers)
- ❑ Step by step procedures' handbook for the EnMS in school buildings
- ❑ Energy Performance Integrated Contract (EPIC)
- ❑ Transnational Good Governance Handbook
- ❑ Set of subsidies and incentives integrated with Demand Side Management (DSM)
- ❑ Set of financial instruments integrated with DSM
- ❑ Transnational protocol for the definition of the system for calculating the savings generated by the Pilot Actions
- ❑ Negotiating Panel Concept
- ❑ Building Alliance Concept
- ❑ DSM Tools for the engagement of the building users



ACTION PLAN IN PUBLIC BUILDINGS - IMPLEMENTATION ON LOCAL LEVEL

DESCRIPTION OF THE ACTION	RESPONSIBLE PERSON / DEPARTMENT	RESOURCES REQUIRED (staff, technical)	DESIRED OUTCOME
Educating one employee of the kindergarten in the field of EE and measures for EE	Municipality of Velenje/Local Energy Agency	One staff member	Educating employee who is going to educate others on how to behave in energy efficient way
Educating building users - employees (including maintenance personnel, cleaning staff etc.)	The director of the kindergarten	One employee who attended the training on EE	Elimination of bad habits that employees have, which reduce the energy efficiency of the building
Implementation of Communication Tools (origami, colouring book) for the children	The director of the kindergarten	All kindergarten teachers	Introducing EE to children in a fun way and raising awareness on how the energy is used
Implementation of energy bookkeeping and data analysis	The director of the kindergarten	One staff member	Control of energy consumption in the building and elimination of excessive use of energy (in-house)
Finding funds for installing real time monitoring system	Municipality of Velenje	One staff member	Obtaining higher resolution data for identification of consumption paths and dynamics that would not be observed otherwise



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Finding Energy Service Company (ESCO) for concluding Energy Performance Integrated Contract (EPIC)	Municipality of Velenje	One staff member	To generate Energy and monetary savings and educate employees by external experts
Lighting reconstruction	The director of the kindergarten	One employee - maintenance worker	Energy savings with easy and low cost measures
Sharing energy bills to provide feedback to the building users - employees	The director of the kindergarten	One employee	To encourage building users to change their behaviour, as this way they can see how consumption has changed in comparison to the same period of the previous year, giving them the chance to work out what might have caused the change
Edutainment and gamification tools	The director of the kindergarten	All kindergarten teachers	To motivate and encourage building users to save energy, with solutions that use fun to keep them engaged
Competition between kindergartens	Municipality of Velenje / The director of the kindergarten	All employees and children	To generate Energy savings through competition, that creates a fun and positive environment that engages and gives something to look forward to



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Explore financial possibilities, available for public entities of the EU Member States	Municipality of Velenje / The director of the kindergarten	One employee	Finding the most appropriate financial tool for energy efficiency actions and energy refurbishment of the building
Establishment of Negotiating Panel - a group of people on a specific object/building who work together in a joint effort to reach the set goals of energy saving, thereby achieving mutual benefits (economic and environmental);	The director of the kindergarten	1 staff member who represents building owner, one representative of the building users (employees) and building manager	Engaging all relevant stakeholders in an open discussion, where they define measures and deliver desired energy saving targets at building level. Fostering energy efficiency goals. Taking a first step in introducing full-scale energy management system in a building.
Signing Building Alliance	Municipality of Velenje / The director of the kindergarten	One employee	Formalization of the measures, defined by Negotiating Panel, and signed by the representative of the Negotiating Panel



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