

Online Workshop on Energy Efficiency Standards in Buildings
and their Implementation in the UNECE region

**Preliminary findings of the national study with
a more detailed gap analysis in the Republic of
Moldova**

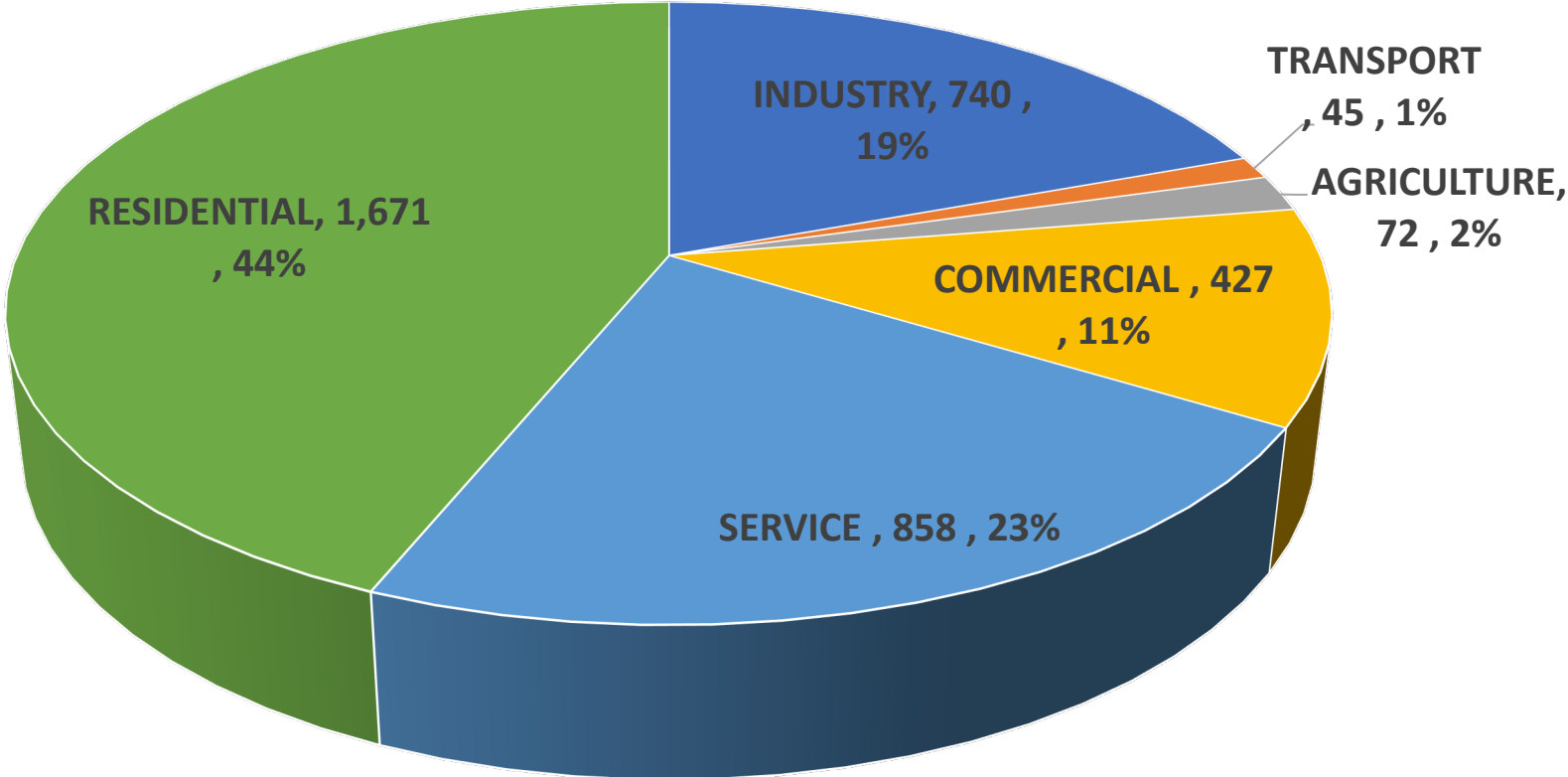
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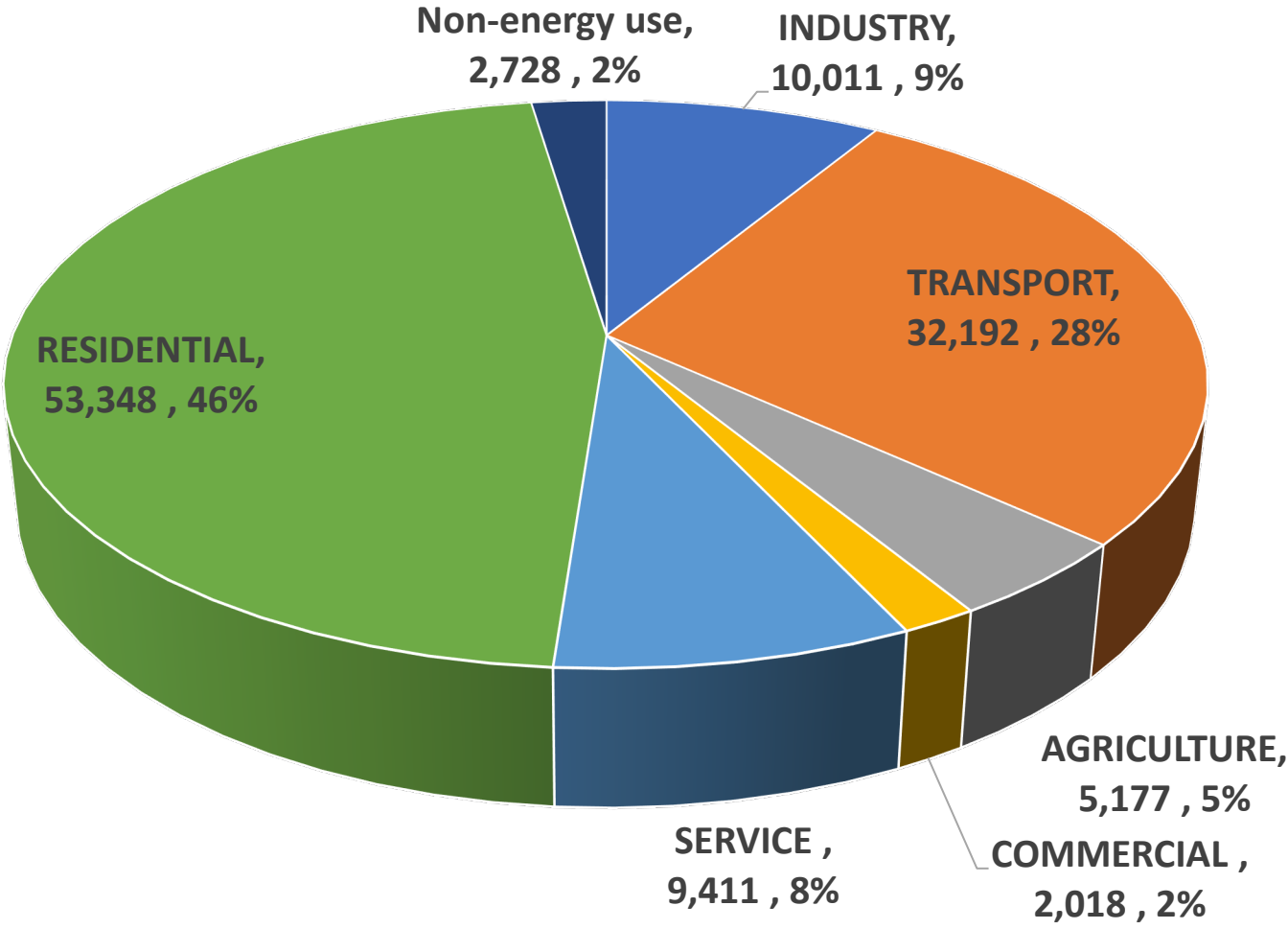
April 09, 2021

Electricity Consumption in Moldova in 2019, Mill kWh



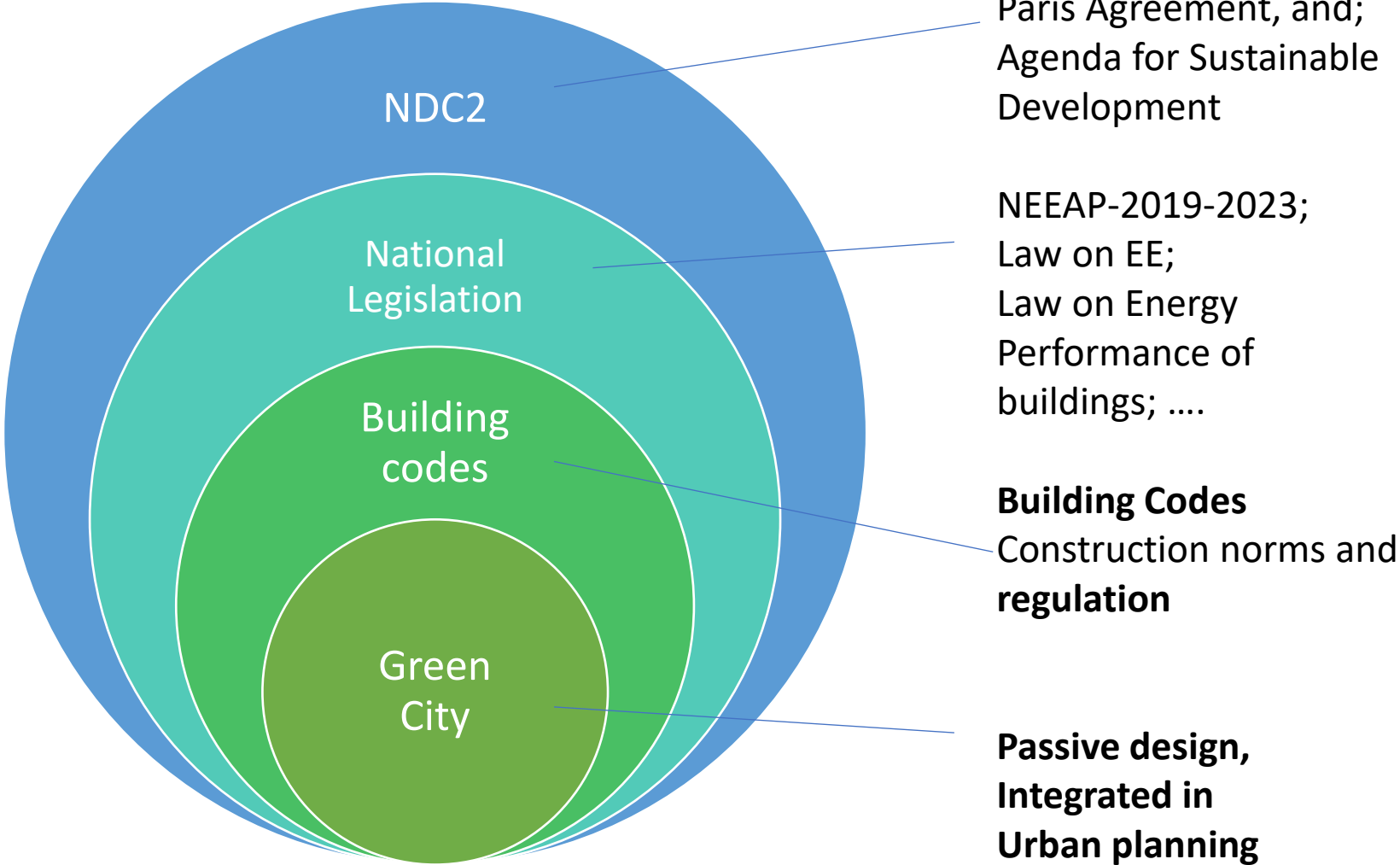
In the Republic of Moldova, buildings (residential, service, commercial) consume about 78% of the electricity.

Energy consumption by sector in Moldova in 2019, TJ



The residential, service, commercial sector consume about 56% of the final energy.

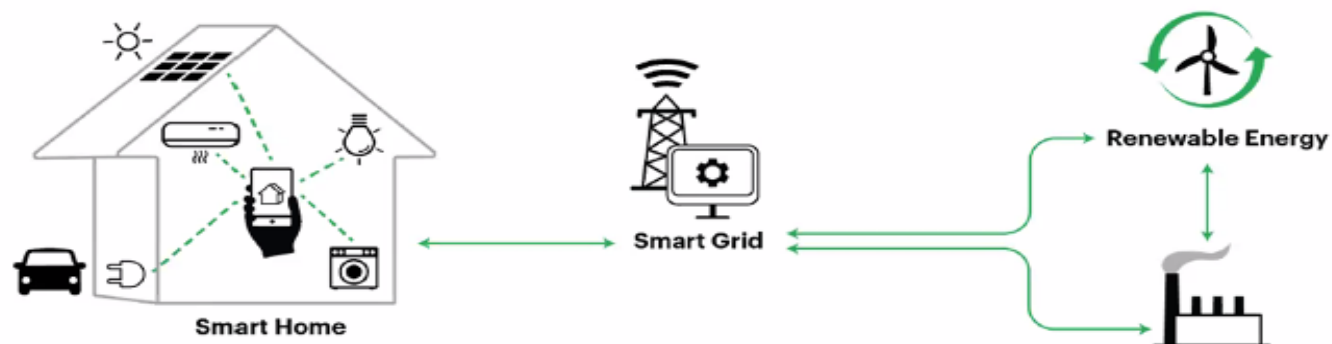
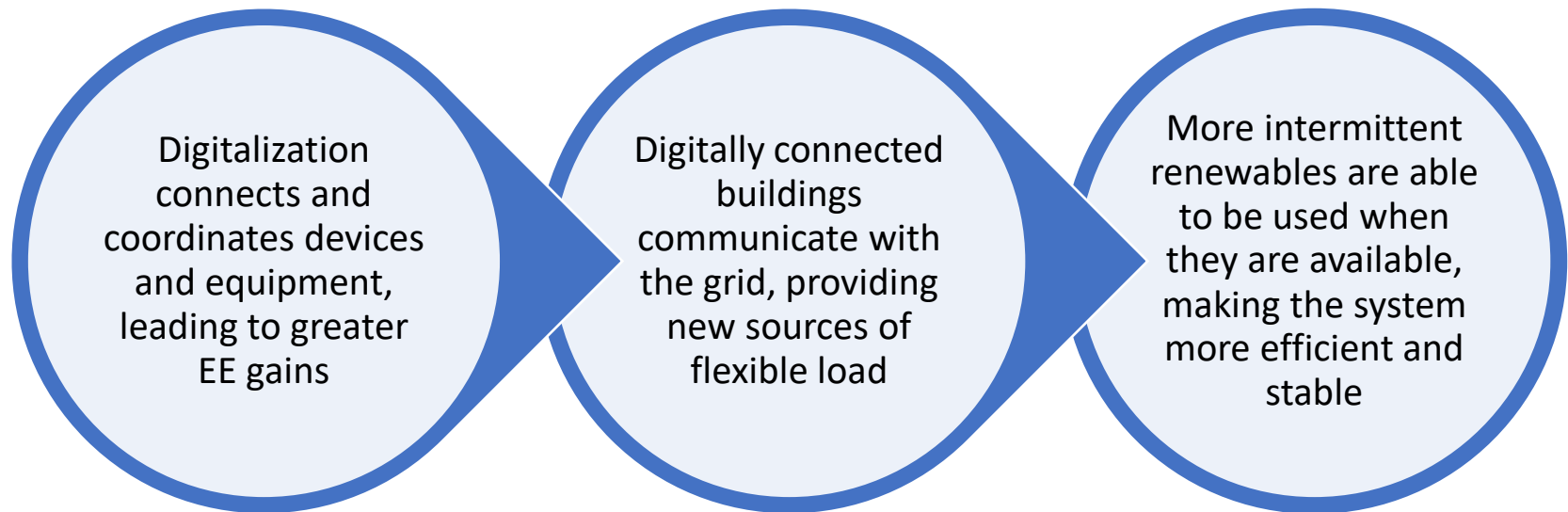
Holistic approach of EE in buildings



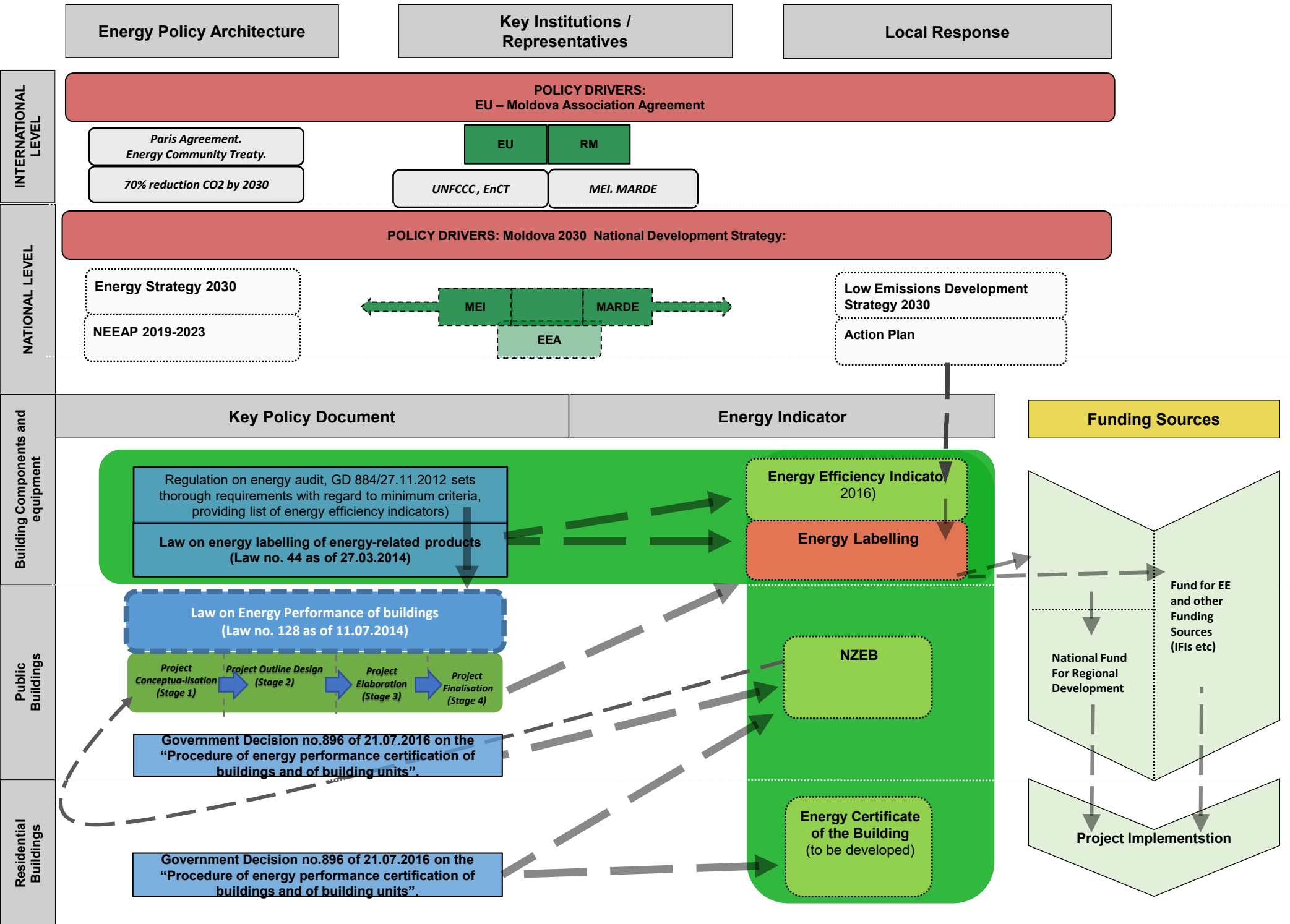
For example...

Digitalization

Digitalization, with right policies, enables a progression to optimizing the efficiency of the whole system and enabling optimum distributed energy systems.



Energy Efficiency Framework in the Republic of Moldova



Framework legislation

- **Law no.139 on Energy Efficiency** - This Law implements Directive 2012/27/EU of the European Parliament and of the Council on energy efficiency and Directive 2009/125/EC of the European Parliament and of the Council establishing a framework for the setting of ecodesign requirements for energy-related products.
- **Law no.75 on Dwellings** - The Law no. 75 on Dwellings was adopted on 30.04.2015 and entered into force on 29.11.2015, except for the provisions relating to the energy performance of buildings with reference to ventilation, cooling and lighting (entered into force on 01.01.2017)
- **Law on eco-design requirements applicable for energy-related products (Law no. 151 as of 01.07.2016)** – is being supported by the Regulation 750/2016 which establishes requirements for equipment such as household dishwashers, air conditioners etc.
- **Regulation (GD no.750 of 13.06.2016) on the “Requirements on eco-design applicable to products with an energy impact”** - The Regulation transposes EC Regulation No 643/2009 of 22 July 2009 on implementing Directive 2005/32 / EC of the European Parliament and of the Council on eco- design requirements for household refrigerating appliances (Official Journal of the European Union L 191/53 of 23 July 2009), as well as amendments and additions made by European Commission (EC) Regulation 2016/2282 of 30 November 2016.

Framework legislation

- **National Energy Efficiency Action Plan (NEEAP 2019-2021) (G.D. no. 698 of 27.19.2019)** - To facilitate energy efficient retrofits of public buildings with cumulative savings of 58 ktoe by end of 2021 and energy efficient retrofits of multi-apartment residential buildings, in frame of a separate programme by the end of 2021 with average annual savings of 83,6 ktoe (cumulative savings of 193,6 ktoe by the end of 2021).
- **Law on Energy Performance of buildings (Law no. 128 as of 11.07.2014) - Near Zero Buildings**
 - 15. Nearly zero-energy buildings requirement will follow the timeline below:
 - (1) After June 30, 2019, new public buildings must be buildings whose energy consumption is nearly zero.
 - (2) After June 30, 2021, all new buildings must be buildings whose energy consumption is nearly zero.

After the government restructuring (2017), the Ministry of Economy and Infrastructure took over the functions of the Ministry of Regional Development and Constructions
- **Law on energy labelling of energy-related products (Law no. 44 as of 27.03.2014)** - is being supported by the Regulation 1003/2014 which establishes a set of labelling requirements for the following appliances – household tumble driers, air conditioners, domestic ovens and range hoods, electrical lamps and luminaries, household washing machines, household dishwashers, household refrigerating appliances and TV sets.

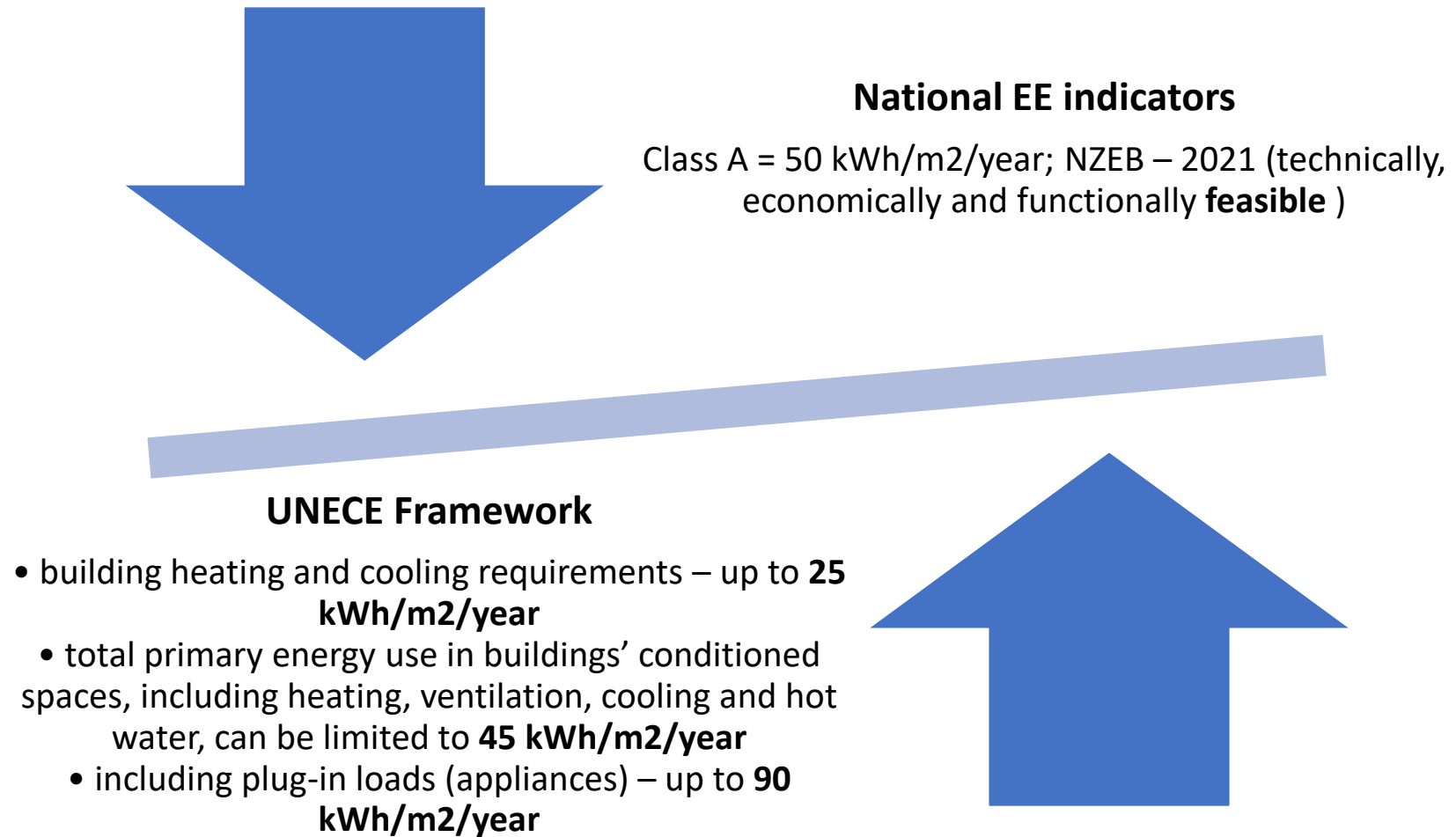
Energy performance certification

- The energy performance certification based on the European standards was implemented in the Republic of Moldova through the Government Decision no. **896 of 21.07.2016 on the “Procedure of energy performance certification of buildings and of building units”**.
- **NCM M.01.02:2016 „Energy Performance of Buildings. Methodology for calculation of the Energy Performance of Buildings”** - The document presents the methodology and conversion factors for energy units for calculation of the Energy Performance of Buildings.
- **Energy Audits, 2020** - The normative document CP G.04.02-2003 "Regulation on energy audits of existing buildings and the heating and domestic hot water , provide the basis for conducting energy audit of existing buildings: requirements, the content, the energy audit documentation and the way for approval .
When central and local public authorities apply for funding by EEA, from state or local public authorities budgets, the project has to be accompanied by an energy audit that has to be deployed by experienced energy auditors. Regulation on energy audit, GD 884/27.11.2012 sets thorough requirements with regard to minimum criteria, providing list of energy efficiency indicators.
- **CP E.04.05-2006 Design of thermal protection for buildings** - This document has a status of practical code and contains methods on the design and calculation of thermal and technical characteristics of building envelope elements, recommendations and informative materials. It also formulates requirements for construction and architectural solutions related to the thermal protection of buildings.
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- **CP E.04.02-2003 Technical implementation rules for exterior/interior thermal insulation of buildings** - CP E.04.02-2003 Technical implementation rules for exterior/interior thermal insulation of buildings with fine plaster on insulation - This standard puts forward technological procedures for different elements of the building envelope and different materials. It also proposes a number of control parameters for materials and works.
- **CP G.04.02-2003 Regulation on energy audits of existing buildings and the heating and domestic hot water**

SWOT Analyses

Strength:	Weakness:
<ul style="list-style-type: none">• Developed framework legislation, including laws on energy efficiency, NEEAPs• Adoption of building energy codes• Law on energy performance in buildings• Energy labelling requirements• Incentives programmes, EE fund	<ul style="list-style-type: none">• Absence of ESCOs• Residential sector is the largest energy consumer• Heat supply system technology is in a transition phase• High energy consumption of existing building stock (esp. constructed during the Soviet time)
Opportunity:	Threats:
<ul style="list-style-type: none">• Major access to district heating system where consumption can be easier reduced (up to 45 per cent)• Adopted standards and labels for appliances• Requirements for regular inspection of heating systems• Dedicated energy agency	<ul style="list-style-type: none">• Absence of mandatory energy performance monitoring requirements• Absence of penalties for non-compliance with building energy codes• Technical readiness for implementation of new technologies• Financial instruments

Gap analysis



CONCLUSIONS

- **Legal:** NDC2 are not in line with EE targets; Secondary legislation is not updated to new decarbonization commitment; Mandatory energy performance monitoring requirements are absent, Energy Certificate of the building is not integrated in business model on the market.
- **Capacity development:** Specific incentives for improving compliance with more ambitious building energy codes are absent; low awareness on the benefits of energy efficiency at the individual level can preclude or limit the introduction of energy efficiency measures both at individual and community level
- **Technology:** low readiness at national level to implement advanced clean technologies. Life-cycle cost is not used to assess the new technologies.
- **Investments and financial incentives:** ESCO marked underdeveloped due to missing financial instruments; Low energy prices (due to subsidy) also make the payback periods for energy efficiency improvements too long to be considered attractive by banks, other financial institutions and population.

RECOMENDATIONS

- Energy Efficiency targets (including Building's) to be updated to NDC2 climate targets (MEI)
- Renewable energy consideration to be mandatory for building design and certification (MEI, MARDE)
- Certification of existing residential and non-residential buildings to be implemented in marked model (MEI, MARDE)
- The minimum energy performance standards should be more ambitious for both new and existing buildings. (MEI)
- To introduce the initial incentive for purchase of energy saving technologies. (MEI, AEE)
- Digital tools - to be considered to enhance flexibility and clean energy deployment
- Financial incentives should be introduced to encourage investment in the long-lasting high efficiency improvements, including ESCO contracting. (MEI, AEE)
- The stakeholders in the building sector should be educated on the importance of building energy codes in order to increase support for compliance and effective implementation of the energy efficiency policy. (MEI, AEE, MARDE, home owners associations, suppliers of building products, research institutions, NGO)

Thank You !

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