SRI-ENACT

Co-creating Tools and Services
for Smart Readiness Indicator Uptake

MODULE 2 / Policy framework and national context for SRI

SRI in National Context

The LIFE21-CET-SMARTREADY-SRI-ENACT project has received funding from the European Union's LIFE Programme under grant agreement N°101077201

Parametrisation parameters

Climate zones	Countries
Northern Europe	Finland, **Sweden**, Denmark
Western Europe	UK, Ireland, **Germany**, Austria, France, Belgium, Luxembourg, The Netherlands
Southern Europe	Portugal, Spain, Cyprus, Malta, **Italy**, Greece
North-Eastern Europe	Estonia, Latvia, Lithuania, **Poland**, Slovakia, Czech Republic
South-Eastern Europe	Slovenia, Croatia, Hungary, Bulgaria, **Romania**

5 climate zones

(Northern Europe, Western Europe, Southern Europe, North-Eastern Europe, South-Eastern Europe)

6 building types

(single-family houses, small multi-family houses, large multi-family buildings, offices, wholesale and retail buildings, and educational buildings)

5 construction periods

(pre-1960, 1960-1990, 1990-2010, post-2010)

2 renovation levels

(original construction, renovated)

The LIFE21-CET-SMARTREADY-SRI-ENACT project has received funding from the European Union's LIFE Programme under grant agreement N°101077201

Domain weightings

Key functionalities → / Impact criteria → / Technical domains ↓	Energy performance & operation		Responds to the needs of occupants				Energy flexibility
	Energy efficiency	Maintenance & fault protection	Comfort	Convenience	Health, well-being & accessibility	Info to occupants	Energy flexibility & storage
Heating	%	%	16%	10%	20%	11.4%	%
Cooling	%	%	16%	10%	20%	11.4%	%
Domestic Hot Water	%	%		10%		11.4%	%
Ventilation	%	%	16%	10%	20%	11.4%	%
Lighting	%	%	16%	10%	20%		%
Electricity	%	%		10%		11.4%	%
Dynamic Building Envelope	5%	5%	16%	10%	20%	11.4%	
Electric Vehicle Charging				10%		11.4%	5%
Monitoring & Control	20%	20%	20%	20%		20%	20%
Sum of weights	100%	100%	100%	100%	100%	100%	100%

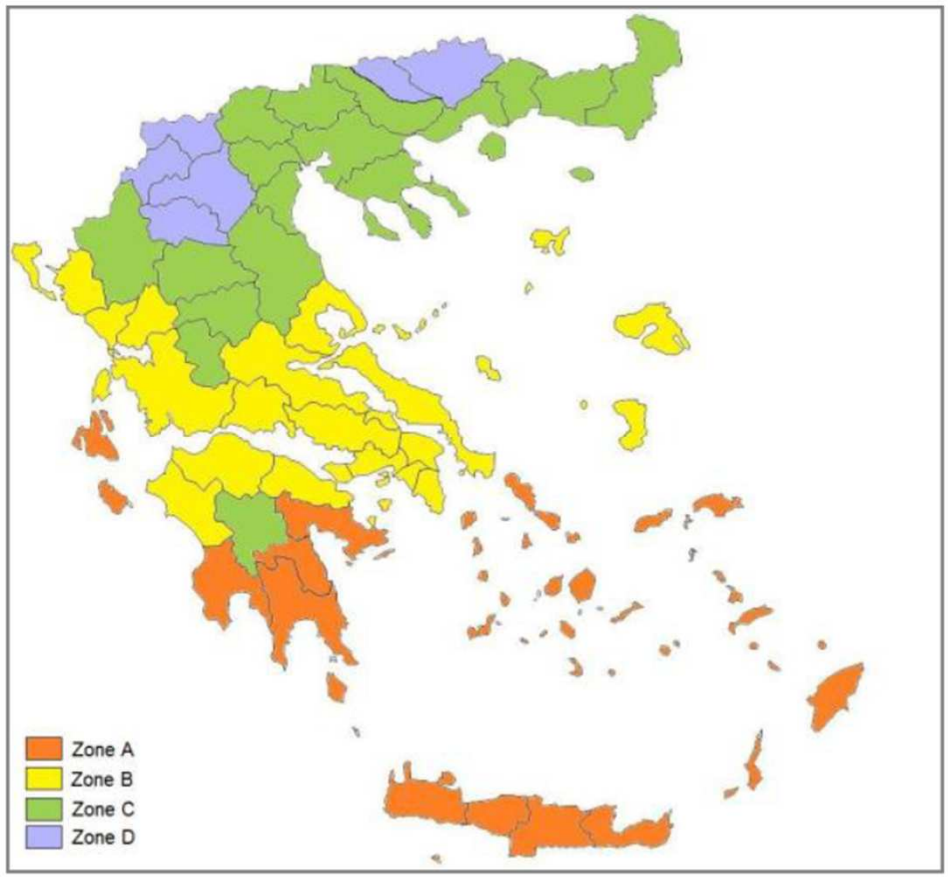
Step 1:
Fixed weights

Step 2:
Equal weights

Step 3:
Energy balance
(depending on climate zone & type of building)

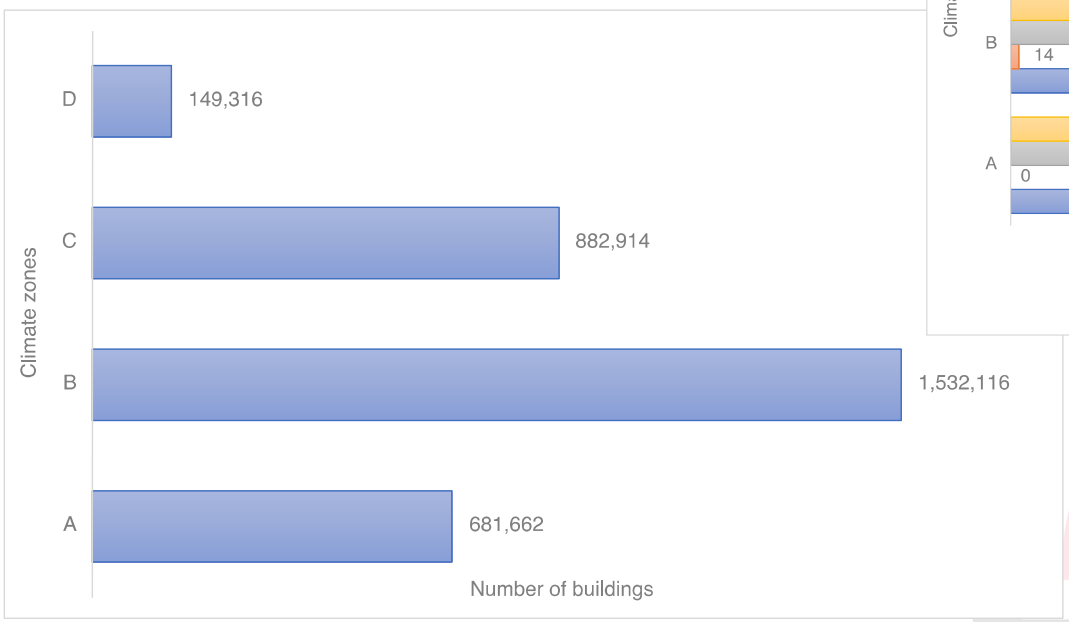
The LIFE21-CET-SMARTREADY-SRI-ENACT project has received funding from the European Union's LIFE Programme under grant agreement N°101077201

Climate zones – National allocation

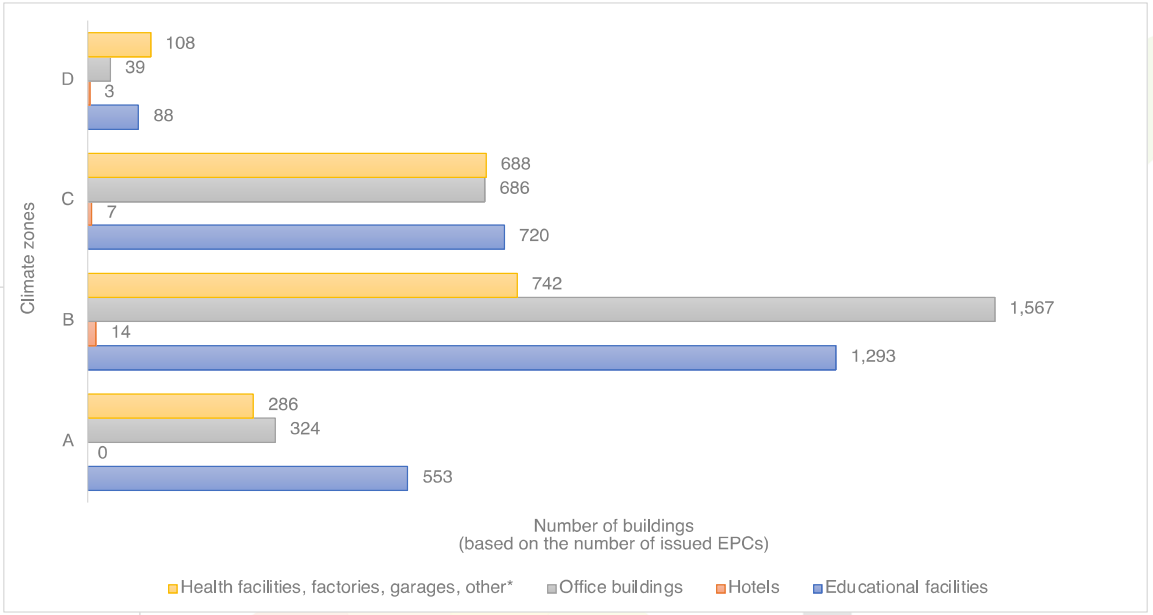


The LIFE21-CET-SMARTREADY-SRI-ENACT project has received funding from the European Union's LIFE Programme under grant agreement N°101077201

Climate zones - Buildings



Number of residential buildings in each climate zone



Number of tertiary buildings broken down per building use in each climate zone

Source: ELSTAT 2015

The LIFE21-CET-SMARTREADY-SRI-ENACT project has received funding from the European Union's LIFE Programme under grant agreement N°101077201

Weighting parameter

$$\mathbf{WF_{ebd}} = \left(\mathbf{100\%} - \sum(\mathbf{fixed\ weights})\right) \cdot \mathbf{a_d}$$

- WF_{ebd} stands for the weighting factor of a domain based on the “Energy balance” method
- a_d represents the relative importance of a given “technical domain” in the used energy balance

$$\boldsymbol{a_d} = \frac{\boldsymbol{Q_d}}{\boldsymbol{Q_{total}}}$$

$$Q_{total} = Q_{Heating} + Q_{Domestic\ Hot\ Water} + Q_{Cooling} + Q_{Ventilation} + Q_{Lighting} + Q_{Renewables}$$

- Q_d is the primary energy use for the domain under examination

…

The LIFE21-CET-SMARTREADY-SRI-ENACT project has received funding from the European Union’s LIFE Programme under grant agreement N°101077201

Assumptions

1 Heating
- Electricity
- Natural gas
- Oil

2 Cooling
- Electricity

3 Domestic hot water
- Electricity
- Natural gas

4 Ventilation
- Electricity

5 Lighting
- Electricity

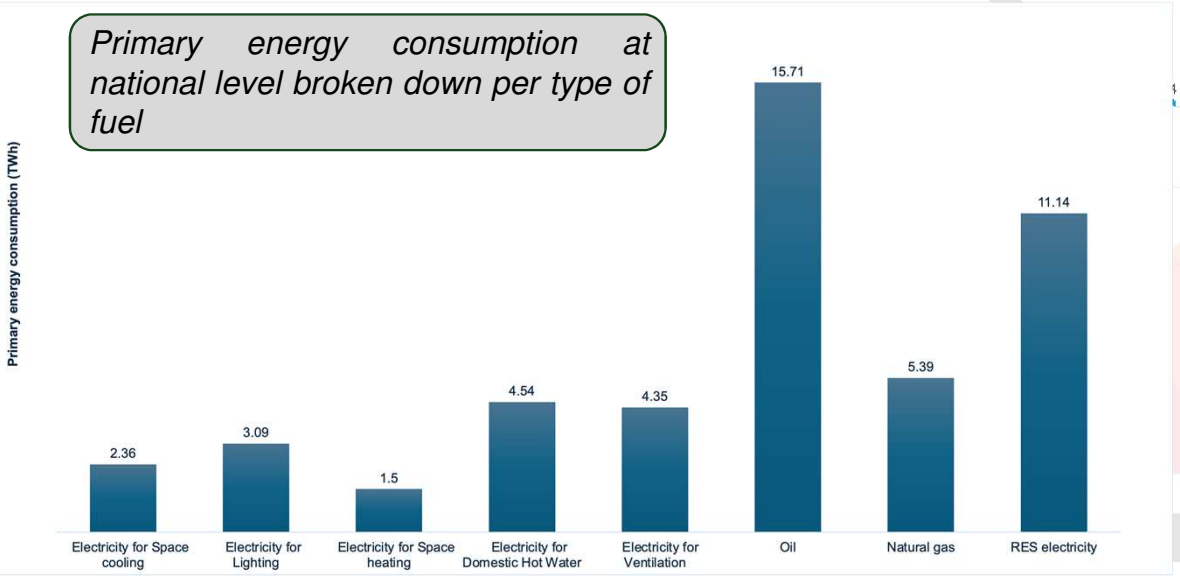
- Climate zone A: Heraklion
- Climate zone B: Athens
- Climate zone C: Thessaloniki
- Climate zone D: Kastoria

Source: YPEKA 2014

The LIFE21-CET-SMARTREADY-SRI-ENACT project has received funding from the European Union's LIFE Programme under grant agreement N°101077201

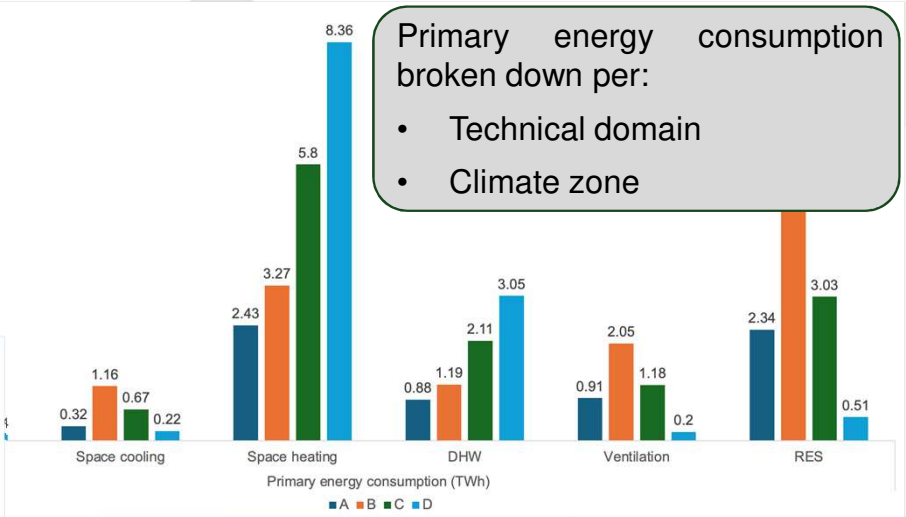
Primary energy consumption

Primary energy consumption at national level broken down per type of fuel



Primary energy consumption broken down per:

- Technical domain
- Climate zone



The LIFE21-CET-SMARTREADY-SRI-ENACT project has received funding from the European Union's LIFE Programme under grant agreement N°101077201

Relative importance

Tailored a_d values for each climate zone of Greece

Relative importance (%) for residential buildings	Climate zone A	Climate zone B	Climate zone C	Climate zone D
Heating	32.2	27.7	42.5	67.0
DHW	11.7	8.3	15.5	24.4
Cooling	4.2	8.0	4.9	1.8
Ventilation	12.1	14.3	8.7	1.6
Lighting	8.6	10.1	6.2	1.1
Electricity (RES generation)	31.1	36.5	22.2	4.1

The LIFE21-CET-SMARTREADY-SRI-ENACT project has received funding from the European Union's LIFE Programme under grant agreement N°101077201

Regulatory policies

- **Article 70(1) of Law 4602/2019**
  - Successor of Article 8(1) of Law 4122/2013
  - As of 1 January 2021, all new buildings should comply with nearly zero-energy buildings requirements
  - For new state- and public-owned buildings intended for housing services, the respective obligation came in effect in 2019
- **Law 4122/2013**
  - Transposes Directive 2010/31/EU on the energy performance of buildings
  - Sets minimum requirements for new buildings and existing buildings that are heavily renovated
  - Provides for measures, funding programmes and other means to support the energy efficiency increase in both new and existing buildings.
- **Article 10(3) of Law 3851/2010**
  - Minimum threshold of 60% of hot water needs to be covered by solar thermal systems on an annual basis
  - From 31 December 2019, all new buildings should meet their primary energy consumption using renewable energy systems, heat cogeneration, and district heating systems, as well as heat pumps
  - For new buildings providing public services, this obligation came into effect back in 2014

The LIFE21-CET-SMARTREADY-SRI-ENACT project has received funding from the European Union's LIFE Programme under grant agreement N°101077201

Funding mechanisms

- **Exoikonomo Programme (2021-2030)**
  - Energy renovation of at least 105,000 homes by 2025
  - Officially in effect until the end of 2021
  - Supported by the National Recovery and Resilience Plan in a next round during the second half of 2022
  - Future support (planning period 2021-2027) from ERDF
- **“ELECTRA” (2020-2026)**
  - Renovation program for public buildings
  - Rolled out in 2022, managed by CRES
  - Total budget of €640 million covered by Deposits and Loans Fund
  - Leverage additional private funding reaching €1 billion
  - Eligible buildings: energy class C or lower - elevated to energy class B or even higher after the implementation of the renovation measures
- **Exoikonomo-Epixeiro Programme**
  - Energy efficiency interventions in SMEs
  - Total budget of €200 million
  - Half allocated to the tourism sector - half to the commercial sector and services.
- **Infrastructure fund**
  - Intended to both private and public sectors
  - Favourable financing terms for the implementation of small- and medium-sized projects, with an emphasis on energy, environment and urban development

The LIFE21-CET-SMARTREADY-SRI-ENACT project has received funding from the European Union’s LIFE Programme under grant agreement N°101077201

SRI-ENACT

Co-creating Tools and Services for Smart Readiness Indicator Uptake

https://srienact.eu

https://www.srienact-tool.eu

The LIFE21-CET-SMARTREADY-SRI-ENACT project has received funding from the European Union's LIFE Programme under grant agreement N°101077201