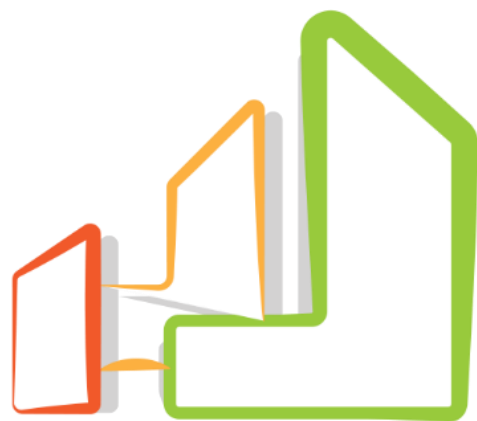


SUPPORT TO SUSTAINABLE ENERGY MARKET DEVELOPMENT IN BULGARIA AND ROMANIA

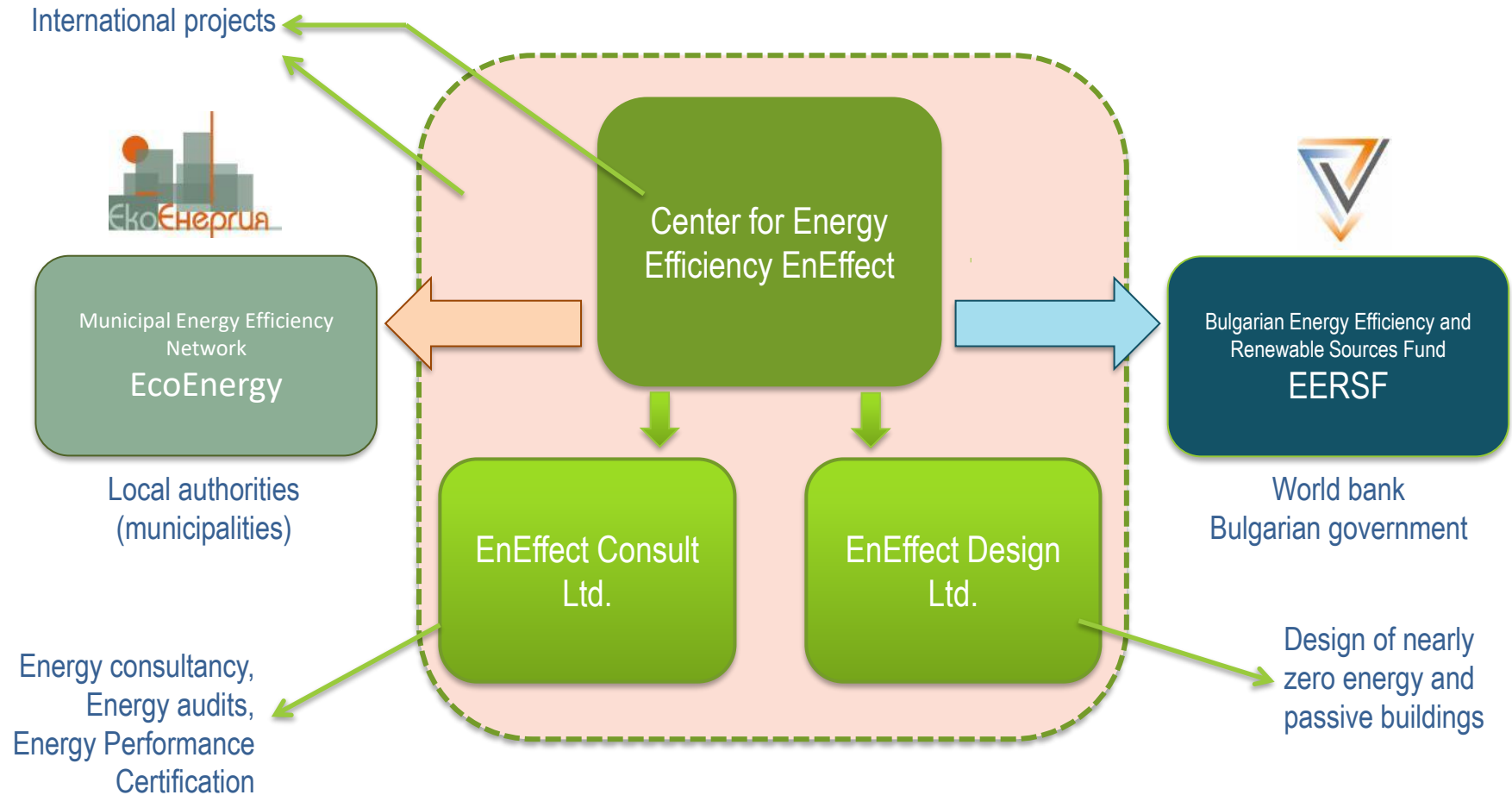


Overview of Horizon 2020 collaboration projects in the area of sustainable energy development

Dragomir Tzanev, EnEffect

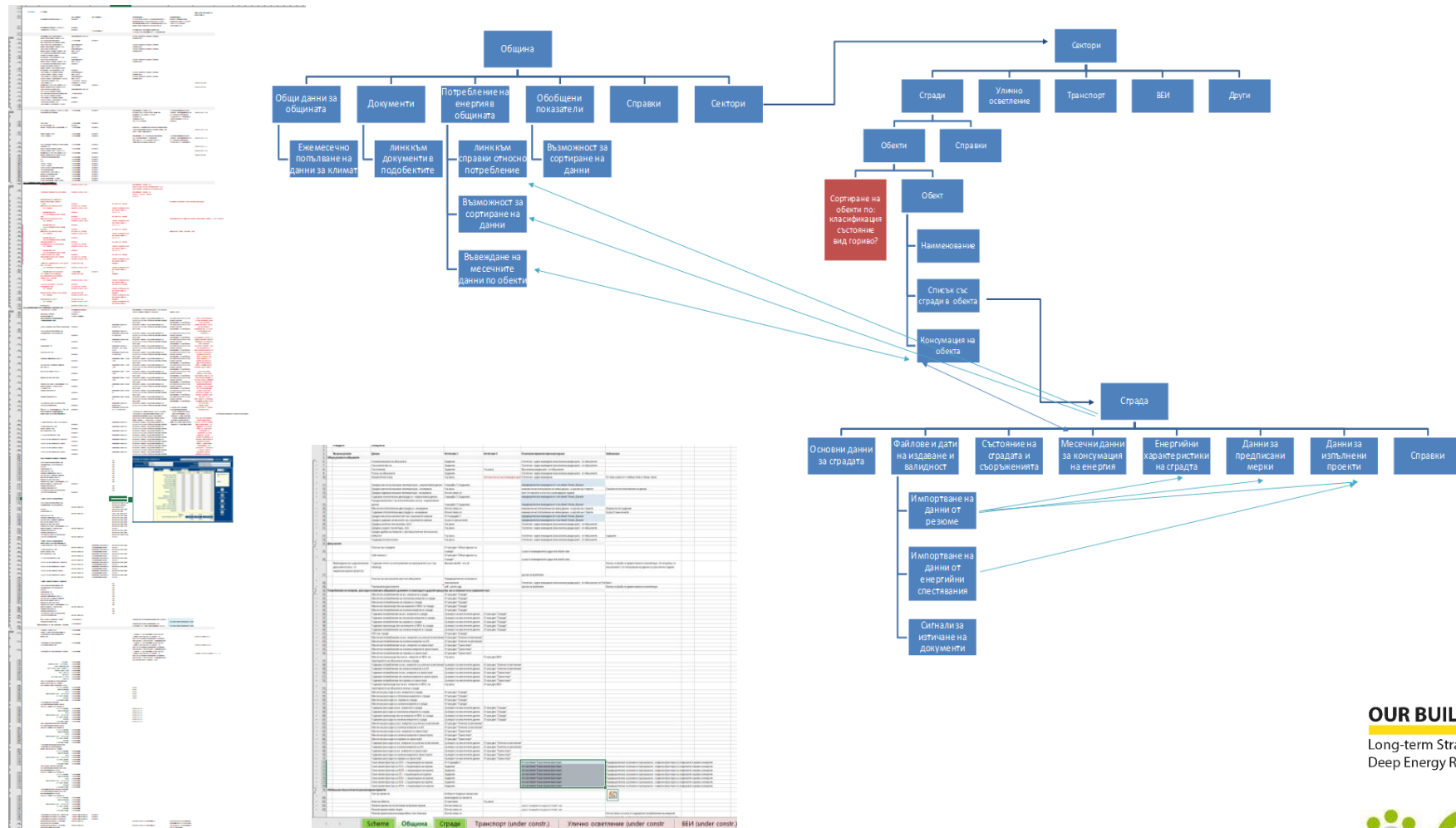
15.09.2022

Organisational structure



MUNICIPAL ENERGY PLANNING

Starting situation



Long-term Strategies for Deep Energy Retrofitting



ENERGY MANAGEMENT

User interface



MunicipalEnergy x +

municipalenergy.net

Apps Weather Buildings UnSorted AirQuality Excell ISO-та SoftUni

ЕнЕфект

Кула

Общи данни

Управление на обекти

Месечни данни

Справки

Общи данни за общината

Наименование:

Кула

Население:

3,654

Площ:

279

Климатична зона: ③

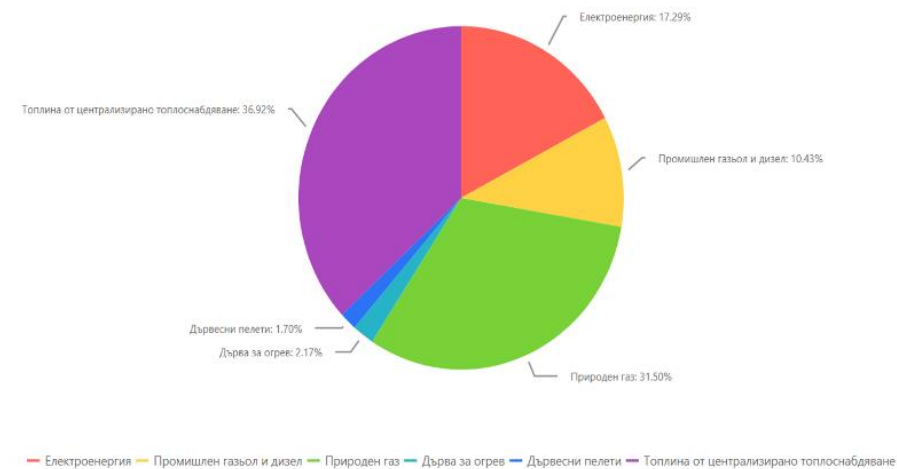
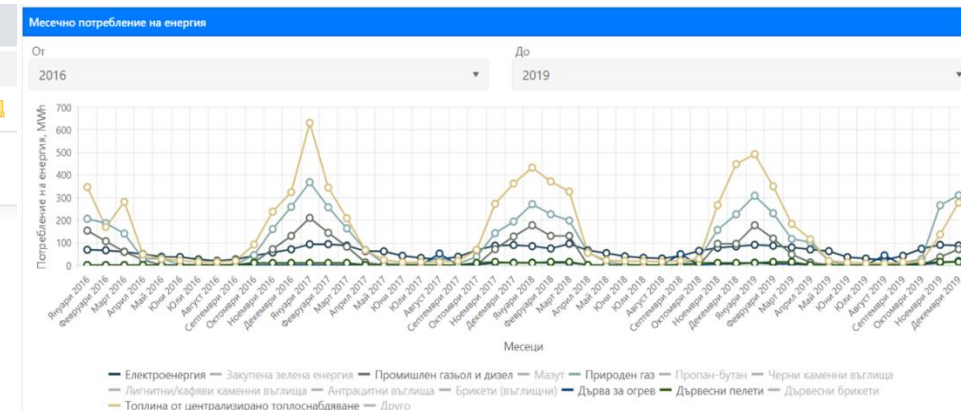
Зона 3 - Северна България - пореч

Средно количество валежи, l/m2:

Средна скорост на вятъра, m/s:

Обща годишна хоризонтална слънчева радиация, kWh/m2:

1,350



ENERGY MANAGEMENT

User interface



<https://municipalenergy.net>

Supported by:



based on a decision of the German Bundestag

MUNICIPAL ENERGY PLANNING

Action plan



	ENERGY CLASS C	ENERGY CLASS B	ENERGY CLASS A	ENERGY CLASS A+
	Your Building Moment of delivery	Renovation Step 1	Renovation Step 2	Renovation Step 3
Measures		External financing		
		Measures	Measures	Measures
		<ul style="list-style-type: none"> External Wall insulation Substitution of the old windows Roof insulation 	<ul style="list-style-type: none"> Insulation of the cellar ceiling Substitution of the heating system by a heating pump 	<ul style="list-style-type: none"> Installation of a heat pump for domestic hot water Installation of a heat recovery unit Installation of a photovoltaic system
Energy Use				
	Primary Energy Demand 283 kWh/m ² a	Primary Energy Demand 206 kWh/m ² a	Primary Energy Demand 103 kWh/m ² a	Primary Energy Demand 31 kWh/m ² a
	Main Energy Source Oil	Main Energy Source Oil	Main Energy Source Electricity	Main Energy Source Electricity
	Final Energy Demand Main Source 180 kWh/m ² a	Final Energy Demand Main Source 110 kWh/m ² a	Final Energy Demand Main Source 7 kWh/m ² a	Final Energy Demand Main Source 4 kWh/m ² a
	Second Energy Source Electricity	Second Energy Source Electricity	Second Energy Source Electricity	Second Energy Source Electricity
	Final Energy Demand second Source 12 kWh/m ² a	Final Energy Demand second Source 14 kWh/m ² a	Final Energy Demand second Source 13 kWh/m ² a	Final Energy Demand second Source 6 kWh/m ² a



ENERGY CLASS A	ENERGY CLASS A	ENERGY CLASS A+
YOUR BUILDING TODAY	RENOVATION STEP 1 NEXT FEW YEARS	RENOVATION STEP 2 2025 - 2030 NEW RENEWABLE ENERGY MARKET CONDITIONS
	WHAT TO DO? <ul style="list-style-type: none"> Change glazing with energy saving glazing New domestic hot water tank with integrated heat pump 	WHAT TO DO? <ul style="list-style-type: none"> Installation of a heat recovery unit Installation of a photovoltaic system
	INVESTMENT COSTS 65200 ₺	INVESTMENT COSTS 101000 ₺
	COSTS FOR MAINTENANCE 65200 ₺	COSTS FOR MAINTENANCE 137000 ₺
ENERGY BILL 23192 ₺/a	ENERGY BILL 18377 ₺/a	ENERGY BILL 9196 ₺/a

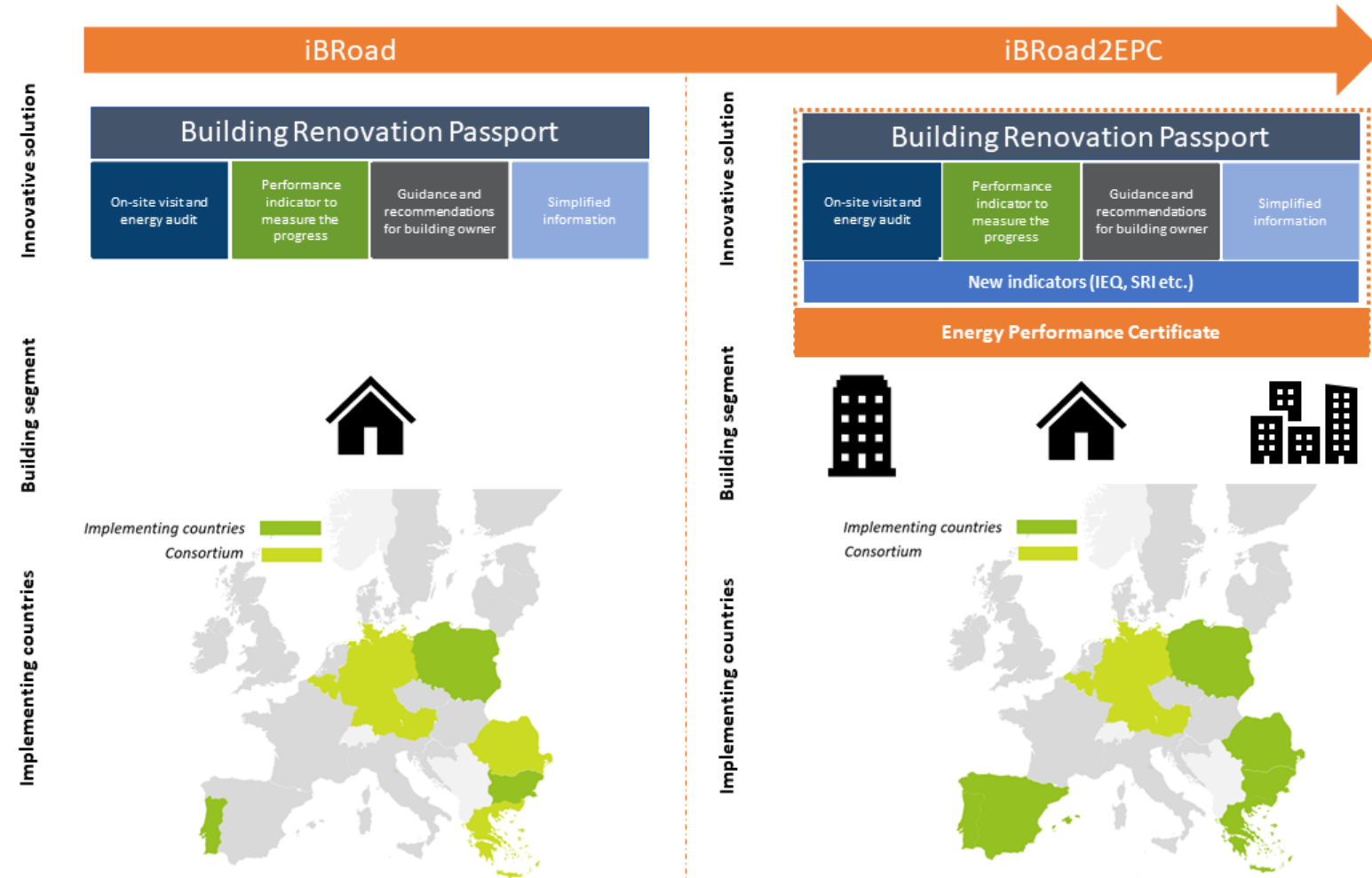


ENERGY CLASS G	ENERGY CLASS F	ENERGY CLASS B	ENERGY CLASS B
Your Building Moment of delivery	Renovation Step 1 Immediately When Boiler needs to be exchanged	Renovation Step 2 2025 - 2030 Higher Comfort Demands	Renovation Step 3
	Measures	Measures	Measures
	<ul style="list-style-type: none"> Substitution of the heating system by a biomass boiler Connection to a existing heating system 	<ul style="list-style-type: none"> Internal wall insulation Substitution of the old windows Roof insulation Improve the air permeability of the envelope 	<ul style="list-style-type: none"> Insulation of the cellar ceiling Installation of a heat recovery unit
Primary Energy Demand 252 kWh/m ² a	Primary Energy Demand 207 kWh/m ² a	Primary Energy Demand 76 kWh/m ² a	Primary Energy Demand 61 kWh/m ² a
Main Energy Source Oil	Main Energy Source Wood	Main Energy Source Wood	Main Energy Source Wood
Final Energy Demand Main Source 199 kWh/m ² a	Final Energy Demand Main Source 187 kWh/m ² a	Final Energy Demand Main Source 62 kWh/m ² a	Final Energy Demand Main Source 47 kWh/m ² a
Second Energy Source Electricity	Second Energy Source Electricity	Second Energy Source Electricity	Second Energy Source Electricity
Final Energy Demand second Source 11 kWh/m ² a	Final Energy Demand second Source 3 kWh/m ² a	Final Energy Demand second Source 3 kWh/m ² a	Final Energy Demand second Source 4 kWh/m ² a
Energy Bill 91199 ₺/a	Energy Bill 40600 ₺/a	Energy Bill 14676 ₺/a	Energy Bill 11696 ₺/a
Carbon Emissions	Carbon Emissions	Carbon Emissions	Carbon Emissions

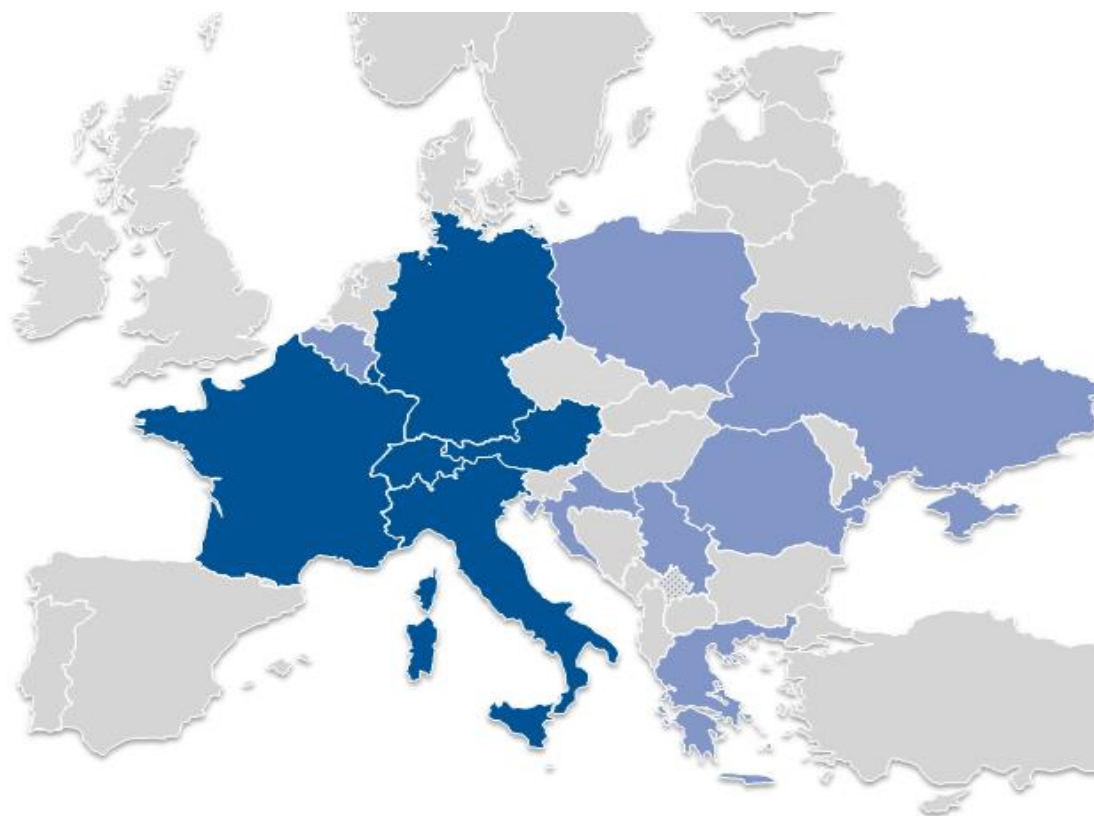
Green home certification

The future: iBRoad2EPC

<https://ibroad2epc.eu/>



EXCITE: eea implementation in CEE



Ordinary member countries with national programmes			
	Austria		Liechtenstein
	France		Luxembourg
	Germany		Monaco
	Italy		Switzerland
			
Pilot countries			
Belgium, Croatia, Greece, Poland, Romania, Serbia, Ukraine			

Involvement of Bulgaria, North Macedonia and Slovenia as pilot countries and strengthening the activities in Romania and Ukraine

EXCITE Achievements



Country	Municipality	Population	Involved officials
Bulgaria	Sofia (EU Climate Neutral City)	1 287 000	5
	Gabrovo (EU Climate Neutral City)	62 763	12
	Dobrich	91 030	3
	TOTAL	1 440 793	20
Macedonia	Karposh	60 725	5
	Kochani	37 800	7
	Kichevo	30 138	3
	TOTAL	128 663	15
Slovenia	Celje	49 070	6
	Velenje (EU Climate Neutral City)	33 640	9
	Slovenj Gradec	16 610	5
	TOTAL	99 320	20
Romania	Cluj-Napoca (EU Climate Neutral City)	324 676	6
	Zalau	56 202	3
	Deva	56 647	3
	Turda	47 744	5
	Iasi	378 954	6
	Alba Iulia	63 536	5
	TOTAL	927 759	28
	TOTALS COMBINED	2 843 515	175
Ukraine	Sievierodonetsk	102 396	22
	Trostanets	20 638	15
	Myrhorod	38 630	25
	Chortkiv	28 414	12
	Novovolynsk	56 902	18
	TOTAL	246 980	92



EXCITE: In the pipeline

- ✓ Training for local authorities in Cluj-Napoca, July 2022
- ✓ Study visit in Austria, September 2022
- ✓ Finalisation of pilot evaluation of the participating cities, Autumn 2022
- ✓ Participation in EUSEW, September 2022
- ✓ Participation in the eea award ceremony, Luxemburg, October 2022



Green Home & Green Mortgage

Bulgarian Green Home & Green Mortgage Program



- ✓ Determining the monthly energy costs
- ✓ Determining the monthly “ownership costs”
- ✓ Reliability
 - Pre-certification on design phase
 - Final certification after the construction completion
 - Monitoring of energy consumption and costs
 - Information to the partnering banks
- ✓ Consistence with the national legislation
 - Energy performance calculations according the national methodology
 - Accredited energy auditors

Green Home & Green Mortgage

Bulgarian Green Home & Green Mortgage Program

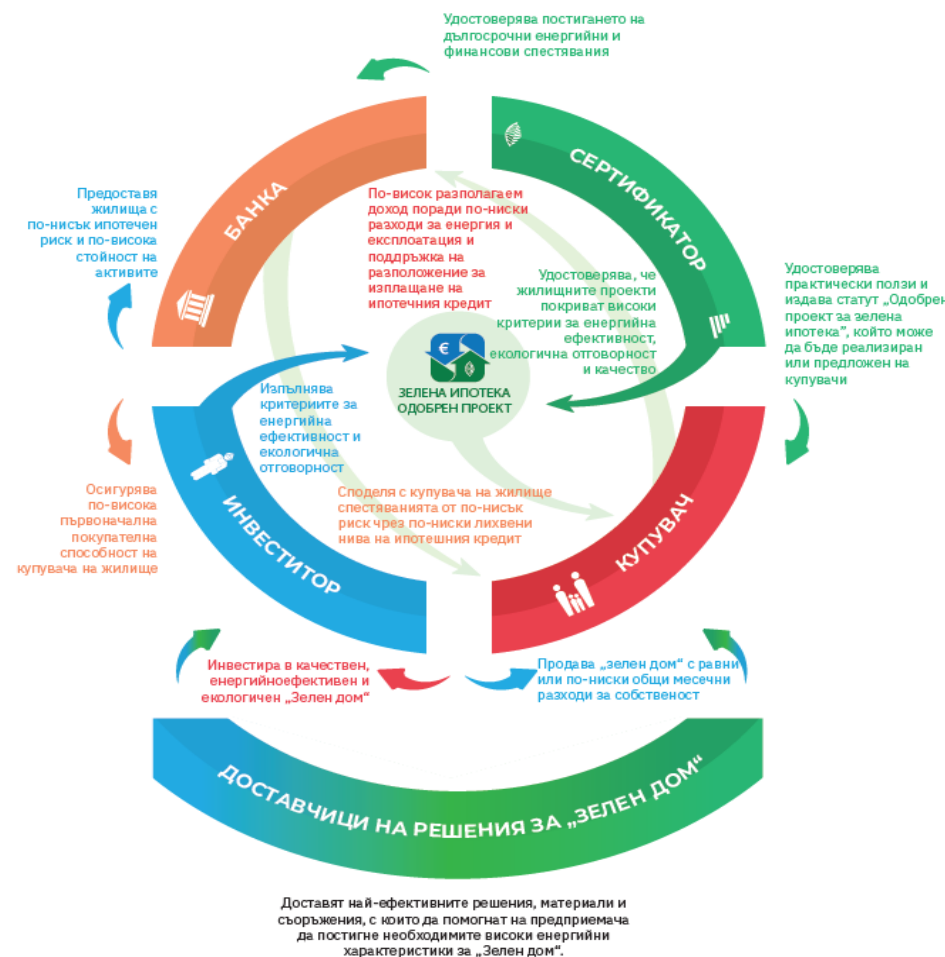


„ЗЕЛЕН ДОМ“

СЕРТИФИЦИРАН ОТ
SMARTER



ОДОБРЕНИЕ ЗА
ПОЛУЧАВАНЕ НА
„ЗЕЛЕНА ИПОТЕКА“



The nZEB Roadshow

nZEB days in Southeast Europe



**URBAN
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The nZEB Roadshow

nZEB days in Southeast Europe



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Personal engagement



Mult-level communication



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