DELIVERABLE D.T1.1.2

INDIVIDUAL REGIONAL BASELINE REPORT ON LOW CARBON INVESTMENTS FUNDING FOR SPLIT-DALMATIA

Version n°1/2019

D.T1.1.2: Individual Regional Baseline Report on Low Carbon Investments Funding for Split-Dalmatia

A.T1.1 Baseline assessment of public funds supporting low carbon investments

Partners involved

PPn°4 - PP EIHP

Interreg CENTRAL EUROPE

Priority:	2. Cooperating on low-carbon strategies in CENTRAL EUROPE	
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1. Background

The Data Collection and Reporting Guide (D.T1.1.1) is the initial task foreseen under the Work Package "T1 Assessment of availability and use of public funds supporting climate change mitigation". The aim of T1 is to assess the use of public funds dedicated to climate change mitigation in the 2014-20 period with particular focus on development of RES. The overall objective of T1 is to deliver policy recommendations targeting mainly the macro-regional strategies (EUSDR, EUSAIR, EUSBSR, EUSALP) developed in CE.

The starting point of T1 is a baseline assessment of the use of available funding for low-carbon investments in the participating regions from 2014 onwards. The funding schemes to oversee include the followings in particular:

- Decentralised funds made available from the ESI Funds through the Partnership Agreements (national, sectoral or regional operative programmes);
- EU low-carbon initiatives (H2020, LIFE, EFSI, ELENA, Jessica, SEFF schemes);
- National/federal funding schemes (grants, subsidized loans, feed in tariffs, building integrated RES schemes); and
- Cooperation with private stakeholders (EPC, ESCO schemes, crowdfunding, venture capital, etc.).

The analysis, carried out by all Project Partners (PP) in the coordination of PP8, will assess the appropriateness of funding policies, administrative procedures, planning and implementation structures, dedicated resources and impacts in environmental and economic terms. Where relevant, the environmental impacts will address the whole lifecycle of the supported RES projects. The economic analysis should particularly focus on the cost-effectiveness of the use grants and exploring best practices concerning innovative low-carbon financing solution leveraging to maximum extent private financial resources.

EIHP, as PP4 and author of this document, is responsible for delivering Individual Regional Baseline Report on Low Carbon Investment Funding for Split-Dalmatia.

2. Presentation of the target region

2.1. General presentation of the target region

The Split-Dalmatia county is the largest Croatian county, geographically located in the southern part of the country and the central part of the Adriatic coast (Figure 1). The land and islands are covering ~32% of total area while the remaining 68% is represented by the sea. The hinterland, in the continental part of the County, is crisscrossed by mountains, while the coastal area makes a narrow strip along the coast between the mountain ranges and the sea (Figure 2). The island area of the County is made up of 74 islands and 57 islets and reefs. The County is located in the area of the Adriatic type of Mediterranean climate whose basic characteristics are dry and hot summers and mild and humid winters.

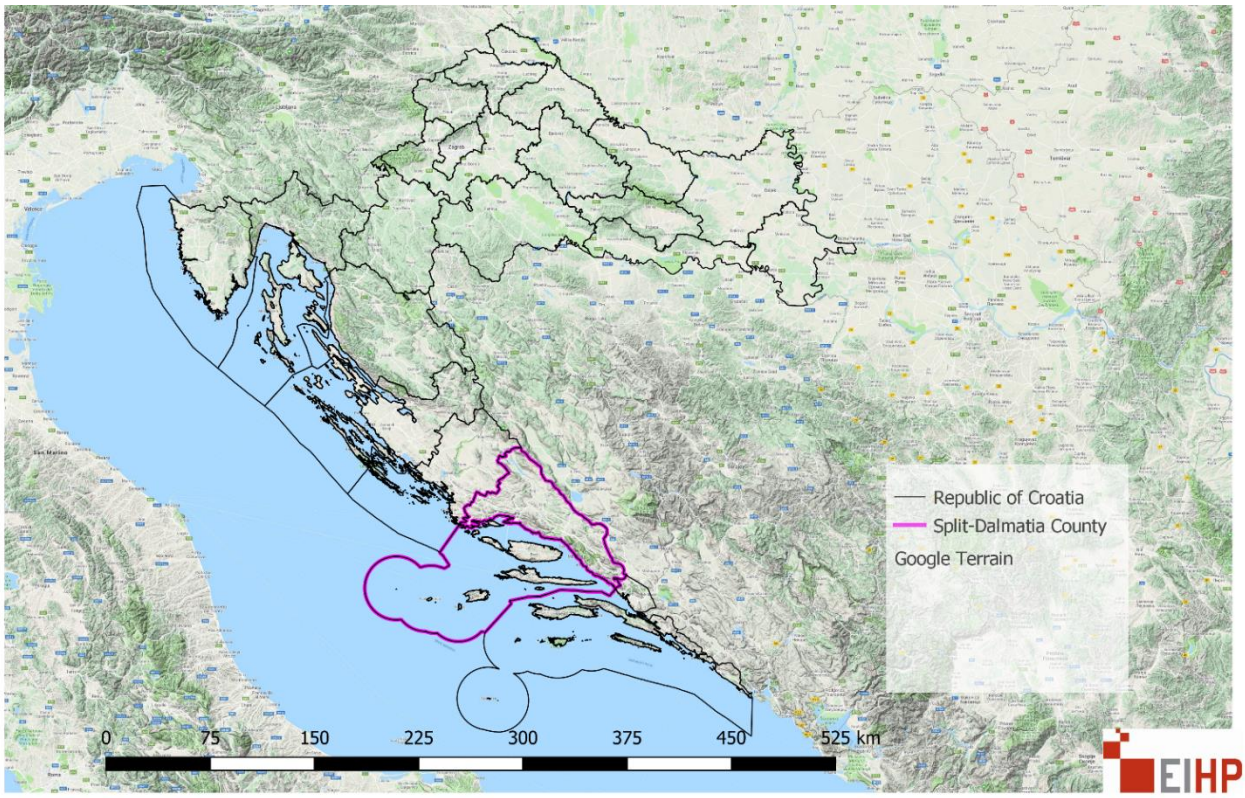

Figure 1 Split-Dalmatia County geographical position on Google Terrain (Zoom-out)

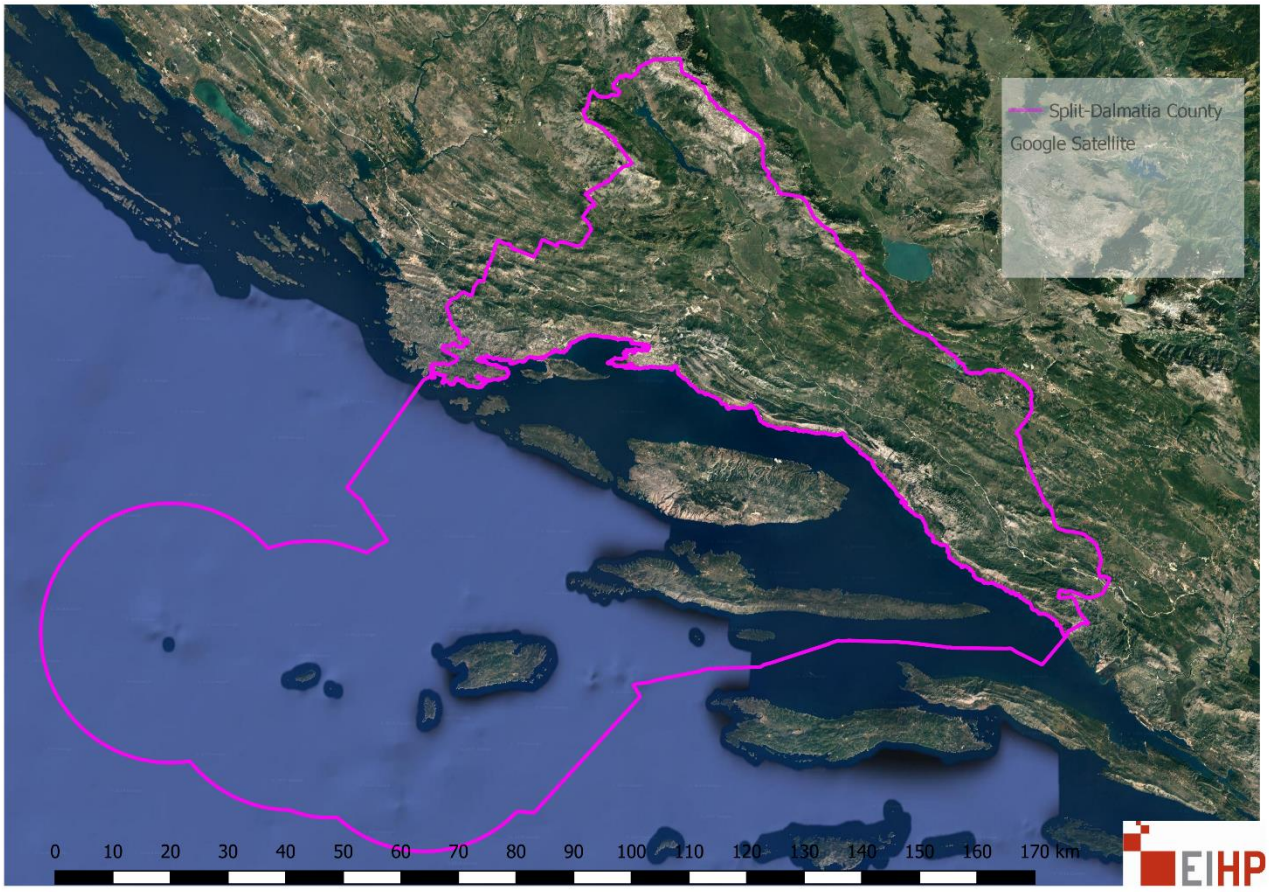

Figure 2 Split-Dalmatia county geographical position on Google Satellite 2019 (Zoom-in)

The population of Split-Dalmatia county is 454.798 and represents ~10% of population in the Republic of Croatia, however, marks a negative trend in number of inhabitants in the past years following the population decline trends in the Republic of Croatia. in The County, the average size of a household is 3,00 while the population density is higher than the national average, accordingly 100,2 inhabitants per km^2. According to the 2011 Census of Population, 77% of the total population lives in 16 county's cities, while the other 23% are settled in 39 county's municipalities. In the County capital Split lives 39,16% of the county's population.

The share of the regional economy in the national GDP is around 8,4% according to the Croatian Bureau of Statistics. With regard to the intra-regional development which directly followed the national, after the decrease trend till 2012, an increase trend has been registered in the time span from 2013 to 2016.

Since the Split-Dalmatian County is a touristic oriented county being the 2nd in Croatia by the number of beds, the highest share of GVA on regional level is dedicated to Wholesale and retail trade, Transportation, Accommodation and food service activities (27%) while the industry is undoubtedly less present regionally compared to the national share. Moreover, real estate activities have a more significant portion (14%) of GVA on a regional level compared to the national (1).

Concerning power system infrastructure, the Split-Dalmatia county all high voltage levels (400, 220 and 110 kV) are operating and a major transformation substation 400/220/110 kV Konjsko is operational, hence the transmission network is directly interconnected with the Bosnia and Herzegovina transmission network. On medium voltage level, the Croatian DSO operates on 35, 10(20) and 0,4 kV. While looking at the gas grid

infrastructure, even if the gas network reaches the County, solely few commercial and public building users have been connected so far.

As far as surface area coverage is considered, rail transport is not the common type of transport within the Split-Dalmatia county although the County has the biggest road network in the Republic of Croatia. The Split Airport is the second busiest airport by passenger traffic in the Republic of Croatia. The number of total passengers increased by almost two million from 2010, largely due to significant increase in tourism. Regarding maritime liner transport, ferries, liner transport lines, high-speed lines navigate seasonally and through the entire year in Split-Dalmatia county. The city of Split has two seaports: city port on the south (passenger-ferry port) and north port (commercial port). Moreover, under Harbour Master's Office of Split there are 15 harbours. The 2nd most visited seaport was Split with 104 visits from January to June 2019. Out of a total of 272 journeys of foreign vessels on cruise the Split-Dalmatia County has a share of (25,3%).

Transport is highly road and maritime based on regional level with a significant increase in air passenger transport each year.
Considering that official energy balances for a NUTS 3 region are not existent, the regional energy demand for D.T2.2.5 purposes, has been calculated based on the Energy Efficiency Action Plan for 2016 developed by EIHP in 2015. The total amount is ~5.607 GWh. The share of the regional consumption is 7% of the total national final consumption. The largest share is accounted for by crude oil and petroleum products, followed by electricity while minor shares are accounted for renewable energies, gas and derived heat. The share of renewables in the total final consumption is 11% and mainly covered by the residential sector, mainly due to use of wood for heating purposes since there are not district heating systems in Split-Dalmatia county.

The main regional particularity is the absence of district heating systems. Even though the gas grid reaches the county due to infrastructure investment projects there were no massive customers connections till now. In terms of regional supply mix, electricity is generated by renewable energy sources solely, respectively hydro, wind and solar photovoltaic. The electrical energy generated per year is ~80% from hydro, ~18% from wind and ~2% from solar photovoltaic power plants. The total installed capacity of hydro power plants in Split-Dalmatia is 919 MW and is based on the hydropower system of the river Cetina. Concerning self-supply of electricity, the installed capacities in Split-Dalmatia county are producing almost double in relation to the actual electricity demand (generated capacity of 3014 GWh/a). Moreover, due to the absence of district heating plants electrical energy is used for heating purposes.

According to D.T2.2.5 Energy report for Split-Dalmatia (1), the CO_2 emissions are estimated at 1,2 million tons per year, with the share of 8% in the national. As expected, the major share of regional emissions is derived from transport (59%), followed by residential (15%) and service (14%) while the industry represents solely 8%.

2.2. Potentials for low carbon sector development

2.2.1. Energy Efficiency

The potential for increasing energy efficiency can be considered in three major sections, buildings, industry and transport.

The highest potential for increasing efficiency is always allocated to buildings with high percentage of usage (24/7). These are residential buildings, health institutions and care centres for young and elderly population. HVAC and lighting systems have significant shares of final energy consumption and represent

the highest potential for savings. Each building is specific and to allocate real potential is necessary to perform quality energy audit that will define and calculate potential and energy efficiency measure that can be applied. The most common energy efficiency measures are insulation of building envelope (and window replacement), installation of LED lighting system and increasing efficiency of HVAC systems.

The state and regional aid for implementing efficiency measures is often available and it helps presented efficiency measures to be more economically feasible.

The increase of energy efficiency in industry is mainly observed through increasing production process efficiency (device replacement), waste heat utilization projects and increasing efficiency of lighting systems. Increasing efficiency in transport is highly dependable of cities/municipalities action plans. The aim should be to increase percentage of electric vehicles in public transport and number of fast charging stations for electric cars.

2.2.2. Renewables

Key technologies for the Split-Dalmatia supply mix are hydro wind and solar. The total installed capacity of hydro power plants in Split-Dalmatia is 919 MW and is based on the hydropower system of the river Cetina which includes: HPP Peruća, HPP Orlovac, HPP Đale, HPP Zakučac and HPP Kraljevac and small HPP Prančevići.

Even if PV solar energy is used in minor share, high values are registered for solar irradiation (1,35 to 1,6 MWh/m^2) and number of sunny days (reaching ~2700 on the islands) which is favourable for PV farms.

For the use of wind energy, the power carried by constant and moderate winds is favourable. In Split-Dalmatia local coastal circulation triggers such winds that blow from land to sea at night and from sea to land during the day.

The largest resource potential for further exploitation are thus solar and wind energy. On the other band biomass and hydro potential are also considerable as well as exploiting sea in the process of production heating and cooling energy (heat pumps).

The heat pump technology is a big potential for increasing energy efficiency in buildings (residential and non-residential). The most common technology is air to air heat pumps, but highest potential can be achieved while using sea for cooling of condensate (in cooling season). For increasing resource potential and energy efficiency purposes, waste heat utilization projects in different fields of industry (fishery, meat and milk industry) should also be considered.

In view of high dependence for electricity for heating and cooling purposes in the region, demand-response mechanisms with local load aggregation could be imperative for balancing supply and demand on local level.

2.3. Regional low carbon policies, institutional framework

Besides the Annual Energy Efficiency Action Plan, which is a planning document for a period of one year and defines the implementation of energy efficiency improvement policies in the County, no formalized regional low carbon policies are existent nor applicable for these purposes.

The preparation and implementation of the annual plan is set through the Energy Efficiency Act (OG 127/2014, 116/18). The latest available document for Split-Dalmatia is for year 2016, and is publicly available [link - (2)].

The Annual Energy Efficiency Plan (hereinafter: Annual Plan) shall, with the prior approval of the National Coordination Body, be issued by the executive body of the local (regional) government, thus the executive body of the big city (3). The Annual Plan is a planning document, adopted by the end of the recurrent year, which sets the implementation of energy efficiency policies on local or regional level. The Annual Plan comprehends:

- analyses of achieved goals through the Action Plan (3-year period), including indicative energy savings objective on local/regional level;
- activity responsible and deadlines;
- measures for improving energy efficiency aligned with the Energy Strategy and other strategic documents of the Republic of Croatia;
- calculation of planned savings in accordance with ordinance of article 22, item 1 of the Energy Efficiency Act (OG 127/2014, 116/18).
- methodology for financing the plan.

The result of the Annual plan is a list of activities which are correlated with the guidelines of the Energy Efficiency Act and National Energy Efficiency Action Plan 2014-2016 (NAPEn3) and other documents as well as financial frameworks (Financing Plan and Program of the EPEEF[1], Horizon 2020, domestic and foreign institutions, etc.).

3. Decentralised funds made available from ESI funds through the Partnership Agreement

3.1. National/federal horizontal (sectoral) operative programmes

An analysis carried out jointly by the European Commission and the Government of the Republic of Croatia showed that Croatia is going to meet the goals of the Europe 2020 Strategy, facing six major challenges (4):

1. Economic competitiveness,
2. Environmental protection and resource efficiency,
3. Development of sustainable and modern transport and network infrastructure,
4. Participation in the labour market for the quality of education,
5. Poverty, inequality and discrimination,
6. Effectiveness of public administrations.

Croatia choose to finance investments within all eleven thematic objective (4), and the concentration of funds in the first four objectives (TC1 Research and Innovation, TC2 Information and Communication Technologies, TC3 Enterprise Competitiveness and TC4 Low Carbon Economy) is allocated 57,2% which is more than the minimum requirement of 50%. European Structural Funds (ESF) share under the Investment in Growth and Jobs target is 26%, while the minimum share set for Croatia is 24,6%. More than 12% of the ESI funds allocated it is intended to contribute climate change mitigation and adaptation (5).

[1] Environmental Protection and Energy Efficiency Fund

For the period 2014-2020, Croatia has been allocated 8,61 billion € for cohesion policy and 2 billion € for the development of the agricultural sector and rural areas (6).

For the purpose of efficient use of available funds, four programs have been developed:

- Operational Program "Competitiveness and Cohesion 2014-2020"
- Operational Program "Effective Human Resources 2014-2020"
- Rural Development Program
- Fisheries Operational Program.

The basic document for the use of these funds is the so-called Partnership agreement signed by the Government of the Republic of Croatia and the European Commission, which states that "ESI funds are the basis of Croatia's development strategy" (4). The planned EU financing, national co-financing and total financing are publicly available data [link - (6)], visible in Figure 3 Total Budget by Theme (situation on December 2019): *Competitiveness and Cohesion - HR - ERDF/CF, EUR billion* .

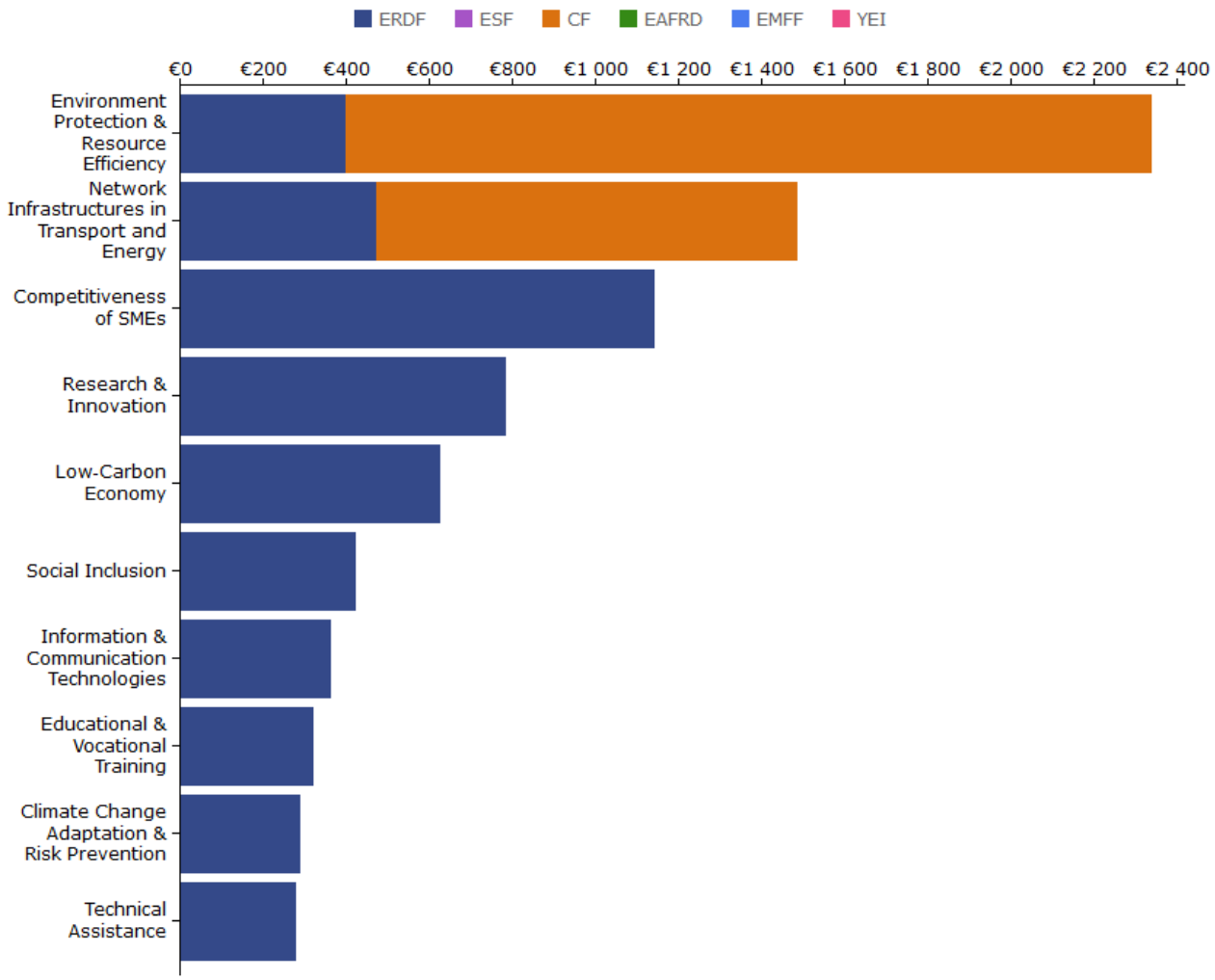

Figure 3 Total Budget by Theme (situation on December 2019): Competitiveness and Cohesion - HR - ERDF/CF, EUR billion (6)

Energy efficiency and renewable energies are the backbone of EU 2020 strategies and a key area through which the EU will meet its GHG emission reduction targets by 2020, 2030 and 2050. That is why thematic objective number 4 of the European Cohesion Policy is "Supporting the transition towards an economy based on low CO_2 emissions in all sectors" and financial support for energy efficiency and renewable energy projects in the Republic of Croatia is provided through Thematic objective 4 of the Partnership Agreement "low carbon economy in all sectors". For this purpose, 532 million € were provided from the European Regional Development Fund under the Operative Programme for Competitiveness and Cohesion, 216 million € from the European Agricultural Fund for Rural Development and 8 million € from the European Maritime and Fisheries Fund (5).

The Partnership Agreement (4) states that, due to ESI funding constraints, investments that encourage the transition to a low carbon economy will be concentrated on improving the energy efficiency of residential and public buildings and on promoting energy efficiency and renewable energy use in manufacturing and service industries. The building sector will be an absolute priority, with a focus on improving the energy efficiency of public buildings and on investments in heating and cooling this the implementation of total energy retrofitting, with the installation of small plants using renewable energy sources, meant for their self-consumption.

Since renewables and energy efficiency are the subject of this analysis, and they are formally included in the Competitiveness and Cohesion Operational Program, the priority this deliverable focuses on Priority Axis 4 "Promoting energy efficiency and renewable energy".

Within the Operational Program Competitiveness and Cohesion 2014-2020, nine priority axes have been defined, investment priorities have been set within each axis, and one or more specific objectives have been set for each investment priority. For each specific objective, two levels of intermediary bodies are assigned - Level 1 communicates with the Ministry of Regional Development and European Funds, which manages the entire Operational Program, and Level 2 communicates with the end user of the funds and the Level 1 intermediate body (5).

Priority Axis 4 it is intended 12,3% of ERDF for the implementation of the Operational Program Competitiveness and Cohesion (OPCC), or 7,73% of the total OPCC funds (5). The focus is on energy efficiency and renewable energy in public infrastructure and residential buildings. Interventions were planned in sectors with the highest share of energy consumption:

- private sector (buildings and manufacturing processes);
- public and residential buildings and public energy infrastructure (centralized heat system and public lighting);
- introduction of new technologies in energy management (smart networks).

Priority Axis 4 has three investment priorities:

1. Promotion of energy efficiency and renewable energy in companies: it is expected that companies will contribute to the set goals in the use of renewable energy and energy efficiency
2. Support for energy efficiency, advanced energy management and the use of renewable energy in public infrastructure (including public buildings) and in the housing sector: the construction sector is expected to make the greatest contribution in achieving the energy efficiency targets set and to make an important contribution to increase the share of renewable energy (primarily for heating and cooling purposes and security of supply)
3. Development and implementation of advanced low and medium voltage distribution systems: system improvements will contribute to increased security of supply and more efficient energy management.

Table 1, developed in (5), shows investment priorities, specific objectives and bodies involved in the management and use of the funds intended for this priority axis.

Table 1 Structure of Axis 4 "Promoting energy efficiency and renewable energy" (5)

Label and name of investment priority	*The tag and name of the specific target*	*Intermediate body of level 1*	*Intermediate body of level 2*
4b Promoting energy efficiency and the use of renewable energy in enterprises	4b1 Increasing energy efficiency and use of RES in manufacturing industries	Ministry of the Economy / or Ministry in charge of Energy today Ministry of Environment and Energy	Energy Efficiency and Environmental Protection Fund
	4b2 Increasing energy efficiency and use of RES in the private service sector (tourism and trade)	Ministry of the Economy / or Ministry in charge of Energy today Ministry of Environment and Energy	Energy Efficiency and Environmental Protection Fund
4c Supporting energy efficiency, smart management energy and the use of RES in public infrastructure, including public buildings and in the residential sector	4c1 Reducing energy consumption in public sector buildings	Ministry of the Economy / or Ministry in charge of Energy today Ministry of Environment and Energy	Energy Efficiency and Environmental Protection Fund
	4c2 Reducing energy consumption in residential buildings (in multi-family buildings and single-family homes)	Ministry of the Economy / or Ministry in charge of Energy today Ministry of Environment and Energy	Energy Efficiency and Environmental Protection Fund
	4c3 Increasing the efficiency of the heating system	Ministry of the Economy / or Ministry in charge of Energy today Ministry of Environment and Energy	Energy Efficiency and Environmental Protection Fund
	4c4 Increasing the efficiency of public lighting systems	Ministry of the Economy / or Ministry in charge of Energy today Ministry of Environment and Energy	Energy Efficiency and Environmental Protection Fund
4d Development and implementation of smart distribution systems operating at low and medium voltage levels	4d1 Advanced Network Implementation Pilot Project	Ministry of the Economy / or Ministry in charge of Energy today Ministry of Environment and Energy	Energy Efficiency and Environmental Protection Fund

The total amounts planned for energy efficiency and renewable energy under the OPCC are:

- Renewable Energy - Solar Energy: 35 million €
- Renewable energy sources - biomass energy: 60 million €
- Energy efficiency of public infrastructure: 181,8 million €
- Energy efficiency of residential buildings: 90 million €
- Advanced distribution systems: 20 million €
- High efficiency cogeneration and district heating systems: 80 million €
- Energy efficiency and demonstration projects in small and medium-sized enterprises: 20 million €
- Environmentally friendly processes and resource efficiency in small and medium-sized enterprises: 20 million €

- Energy efficiency in large enterprises: 25 million €

The financial situation on December 2019 (end of the programming period) is presented in Figure 4. As shown, solely 21% of the total dedicated amount in the Partnership Agreement was actually spent while 85% was dedicated. The highest spending rate of 8% recorded from 2018 to 2019. Following the total amount, the related spending by funds are presented in Figure 5.

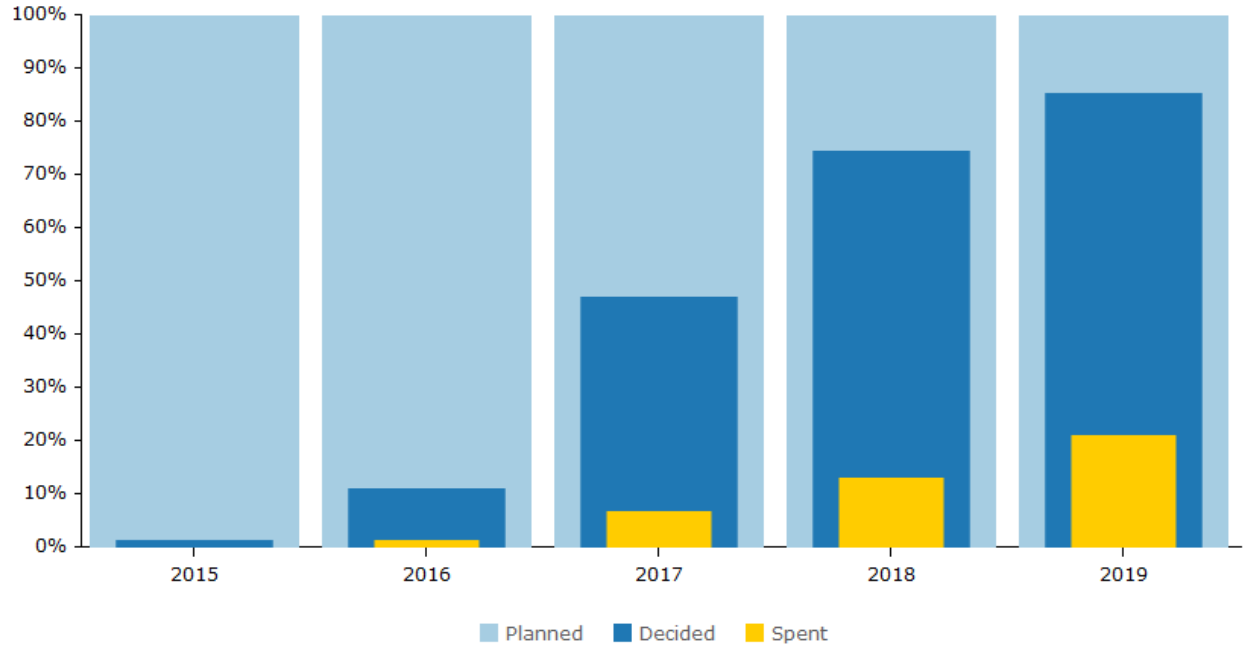

Figure 4 Finances: Implemented (Total Cost): Competitiveness and Cohesion - HR - ERDF/CF (6)

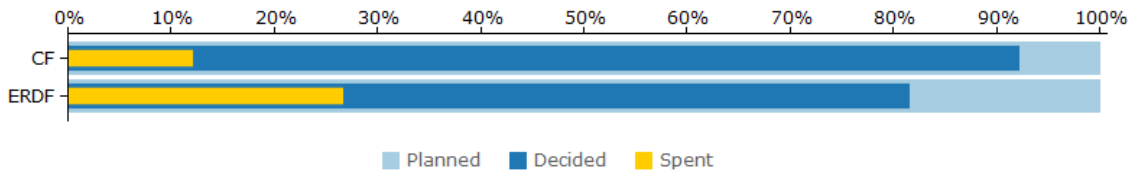

Figure 5 Implementation by Fund, (Total Cost) % of Planned: Competitiveness and Cohesion - HR - ERDF/CF (6)

For the purpose of this deliverable, analyses of publicly available data (6) on European Structural and Investment Funds spending has been made for Croatia.

For supporting energy efficiency and renewable energy projects 532 million € were provided from the European Regional Development Fund (ERDF). As shown in Figure 6 solely 160,76 million € were spent, mainly in 2018 and 2019, while in 2019 more financial funds were dedicated that actually agreed trough the Partnership Agreement. Even if there the spending has significantly increased between 2018 and 2019, with more than double increase rate, a suggestive total underspending has been recorded.

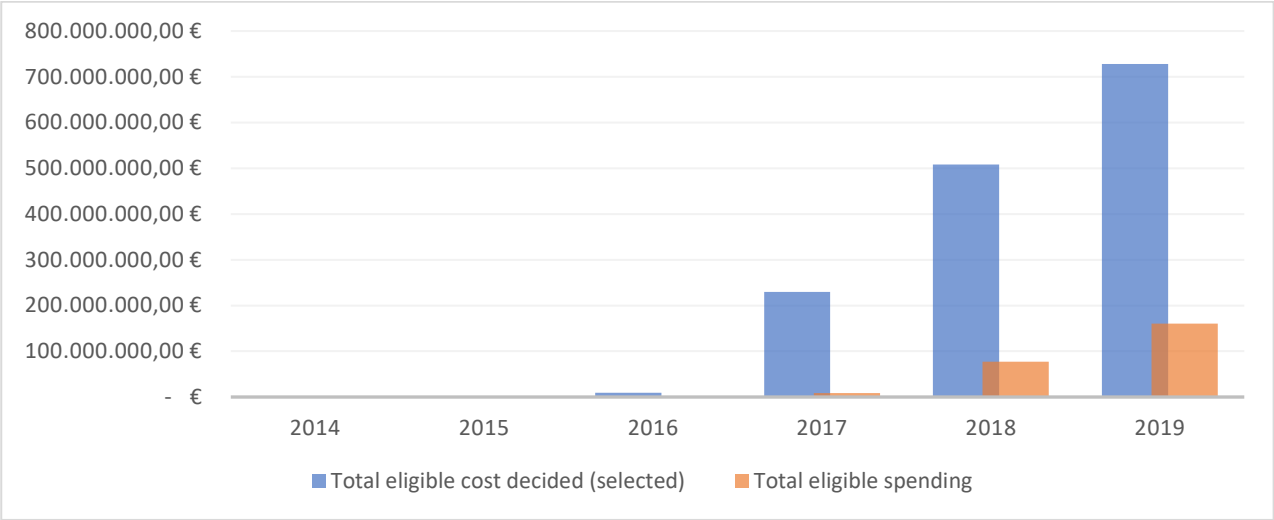

Figure 6 ERDF dedicated amount vs. spending for Thematic objective 4 (6)

For Thematic objective 4, even if 8 million € were assigned from the European Maritime and Fisheries Fund (EMFF) just € 100.842,00 were spend with equal distribution of funds (~20 k€) from 2015 to 2019 Figure 7.

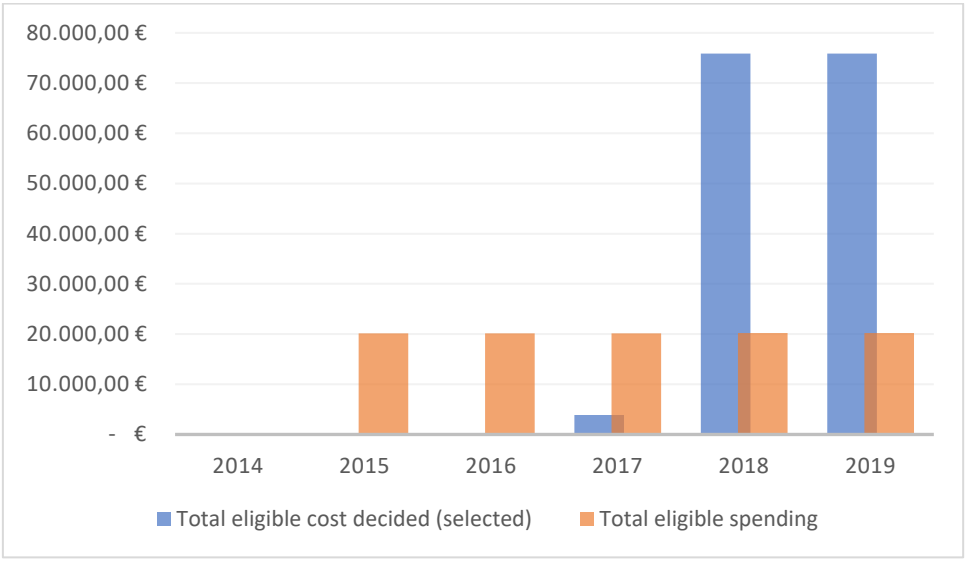

Figure 7 EMFF dedicated amount vs. spending for Thematic objective 4 (6)

Figure 8 presents the dedicated funds vs. the actual spending of the European Agricultural Fund for Rural Development (EAFRD). The total dedicated amount for Thematic objective 4 from EAFRD was 216 million € while last registered spending has been recorded at ~107,88 million €. Since measures are listed in the filtered tables of (6), for the focus area of RES ~11,37 million € has been spend in physical investments.

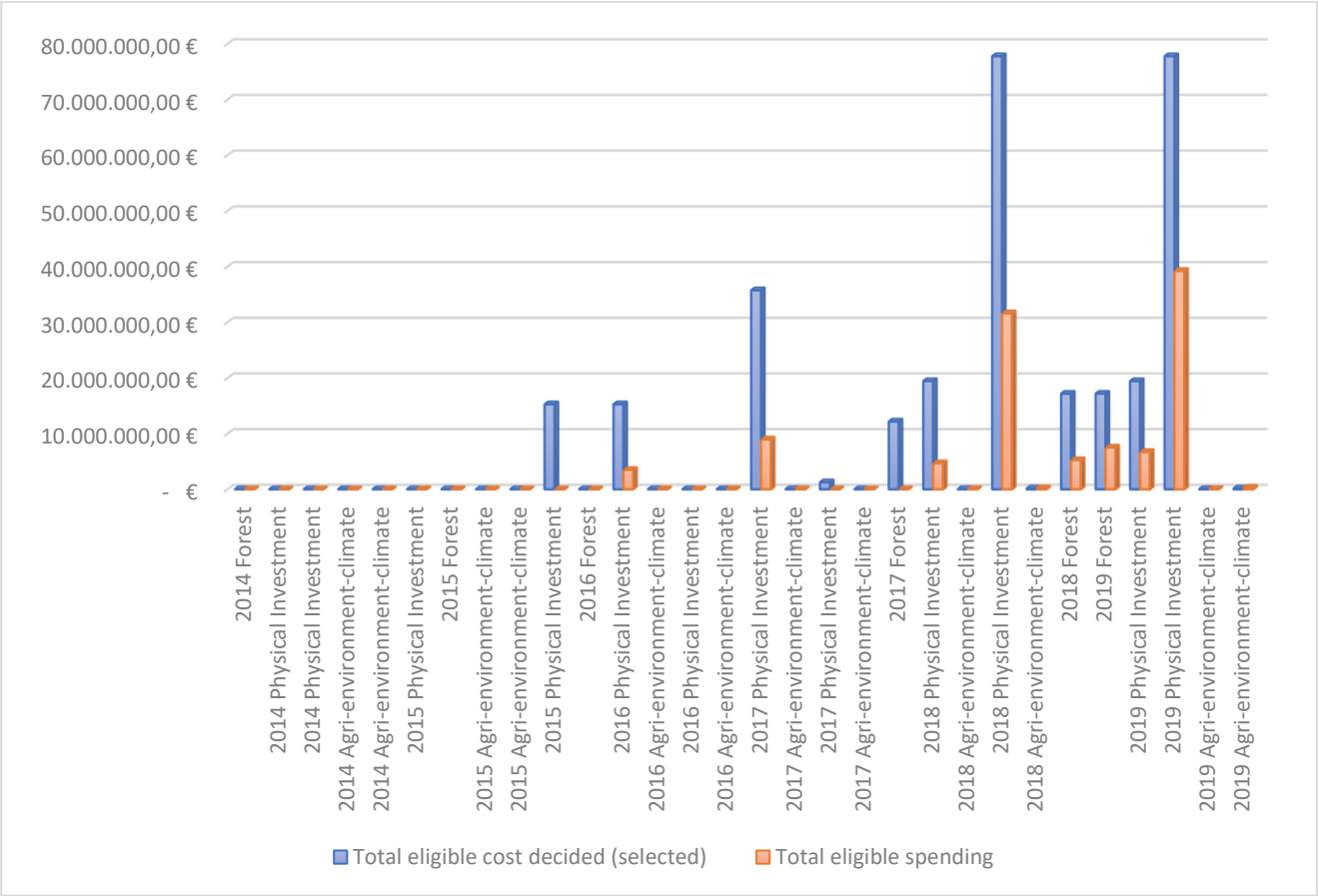

Figure 8 EAFRD dedicated amount vs. spending for Thematic objective 4 (6)

Spending rates per funds are shown in Table 2. Based on last available data (December 2019), the highest spending rate is recorded for EAFDR, focus area "Carbon conservation/sequestration" reaching 130%, while the lowest spending rate is registered for ERDF with only 17%. It is important to point out that focus areas for EMFF and ERDF are not specifically defined in the live tables of (6) hence it is difficult to correlate the spending/dedicated amount with a specific investment or focus area.

Table 2 Total dedicated amount vs. spending for Thematic objective 4

	TOTAL ELIGIBLE COST DECIDED (SELECTED)	TOTAL ELIGIBLE SPENDING	FOCUS AREA	SPENDING RATE
EMFF	155.609,18 €	100.842,00 €	*Not specified*	65%
EAFDR	61.759.317,40 €	16.207.403,69 €	*FA_2C+*	26%
EAFDR	40.112.084,99 €	11.379.549,65 €	*Renewable energy*	28%
EAFDR	222.121.304,17 €	83.694.392,12 €	*Reducing GHG and NH3*	38%
EAFDR	47.190,99 €	61.279,26 €	*Carbon conservation / sequestration*	130%
ERDF	1.476.542.444,87 €	248.180.418,12 €	*Not specified*	17%

3.2. Decentralised regional operative programmes and other low-carbon initiatives on regional level

Since Split-Dalmatia County is a NUTS3 region, there are no decentralised regional operative programmes made available from ESI funds through Partnership Agreement.

4. Split-Dalmatia county low-carbon initiatives financed directly through county's budget

Split-Dalmatia is implementing low-carbon programmes since 2014. Despite the absence of decentralizes ESI funds made available through the partnership agreement, the County is implementing a Programme for Systematic Energy Management (4) with the aim to increase energy efficiency and the use of RES through its territory since 2014. The Program has been implemented in two stages: the first phase from 2014 to 2017 and the second from 2018 till 2021 each of them regulated through ordinances (5) and financed through the County's budget.

The Split-Dalmatia Programme for County Systematic Energy Management (2014-2017) was introduced to increase energy efficiency in its entire area and consequently to reduce CO_2 emissions. The program has been implemented through the following projects:

- Project 1: Encouraging the installation of solar systems for the preparation of domestic hot water and domestic heating
- Project 2: Promoting energy efficiency in buildings
- Project 3: Encouraging the installation of PV power plants in households for self-consumption purposes with installed power up to 10 kW (out of the incentivised system)
- Project 4: Encouraging reduction of energy consumption and light pollution of public lighting

In the first phase from 2014 to 2017 the co-financing amounts and eligible costs were as follows:

- Boosting the use of renewable energy in single-family homes
    - Co-financing with grants in the amount of 45% or up to a maximum amount of HRK 12.000 (~€ 1.610) per household for total equipment and installation costs of a solar collector system for water and/or household heating purposes, with a minimum degree of efficiency of solar thermal collectors set at 70%.
    - Co-financing with grants in the amount of 35% or up to a maximum amount of HRK 15.000 (~€ 2.015) per household for total equipment and installation costs of a PV power plant for household's self-consumption with installed power up to 10 MW (out of the incentivised system), with a minimum degree of efficiency of PV set at 15%.
- Boosting energy efficiency in single-family homes
    - Co-financing of eligible costs with grants of 35% of the total value (with VAT) up to a maximum of HRK 25.000 (~€ 3.355) for construction/retrofit of thermal insulation of the outer envelope (coefficient of heat transfer U less than or equal to 0.40 W/m^2K for exterior wall, 0.25 W/m^2K for roof, ceiling and floor according to unheated space, and for ground floor less than or equal to 0,45 W/m^2K).
    - Co-financing of eligible costs with grants of 40% of the total value (with VAT) up to a maximum of HRK 15.000 (~€ 2.015) for installation/replacement of external joinery (heat transfer coefficient U less than or equal to 1.1 W/m^2K for the glass part or less than or equal to 1.6 W/m^2K for the whole window).

- Encouraging reduction of energy consumption and light pollution in public lighting
    - Co-financing with grants of up to 25% maximum and not more than HRK 100.000 (~€ 13.422) per individual beneficiary (municipality/city) for the implementation of the following activities:
        - creating project documentation;
        - modernization of existing systems (replacement of old inefficient ones with new more efficient light bulbs);
        - construction of new public lighting;
        - establishment of a public lighting management system.

The second phase of the Programme (2018-2021) has the same purpose as the previous (6) and it is implemented through the following projects:

- Project 1: Boosting the use of renewable energy in single-family homes
    - Measure 1.1: Solar thermal collectors for domestic hot water preparation and heating
    - Measure 1.2: PV power plant for household's self-consumption with installed power up to 10 MW (out of the incentivised system)
    - Measure 1.3: Heat pumps
    - Measure 1.4: Biomass boilers
- Project 2: Boosting energy efficiency in single-family homes
    - Measure 2.1: Increasing the capacity of thermal insulation of the heated area
    - Measure 2.2: Replacement of exterior joinery
    - Measure 2.3: Installation of condensing gas boiler
    - Measure 2.4: Gas absorption heating pumps
    - Measure 2.5: Micro cogeneration/trigeneration system

In 2015 21 requests were received, of which 18 requests were valid, in accordance with the Program, thus an amount of HRK 196,573.78(~€ 26.385,74) was dedicated to Project 1. For Project 2 36 requests were submitted, of which 32 were valid, the amount of HRK 444.666,69 (~€ 59.686,80) was dedicated to facade renovation and HRK 361.893,06 (~€ 48.476,25) for windows renovation. For Project 3 19 requests for co-financing were received, 13 of which met the requested requirements (2).

No data was found for 2016, nevertheless in 2017 (7) HRK 245.534,62 (~€ 32.957,67) for Project 1 and HRK 956.020,79 (~€ 128.727,62) for Project 2 were assigned.

In the second phase from 2018 to 2019 co-financing amounts and eligible costs are as follows (7):

- Fees for energy auditors for Project 1 (except Measure 1.2) and Project 2.
    - The County is co-financing the fee costs for energy auditors up to 50% of total fee costs, accordingly up to HRK 1.000 (~€ 134.22) per single-family homes.
- Project 1: Boosting the use of renewable energy in single-family homes
    - Measure 1.1: Solar thermal collectors for domestic hot water preparation and heating
        - Total installation and equipment installation costs will be co- financed with grants in the amount of 50% or up to a maximum amount of HRK 10.000 (~€ 1.342) per household for solar collector system for water and/or household heating purposes, with a minimum degree of efficiency of solar thermal collectors set at 70%.
    - Measure 1.2: PV power plant for household's self-consumption with installed power up to 10 MW (out of the incentivised system)
        - Total equipment and installation costs will be co-financed with grants in the amount of 50% or up to a maximum amount of HRK 20.000 (~€ 2.684) per

household for PV power plant for household's self-consumption with installed power up to 10 MW (out of the incentivised system), with a minimum degree of efficiency of PV set at 15%.

- Measure 1.3: Heat pumps
  - Total equipment and installation costs for heat pumps in single-family houses will be financed with grants in the amount of 30% or up to a maximum amount of HRK 20.000 (~€ 2.684) per household: A energy class air-water, water-water and earth-water.
- Measure 1.4: Biomass boilers
  - Total equipment and installation costs for biomass boilers (pellets/wood chips) or pyrolytic wood boilers for hot water preparation and heating purposes will be financed with grants in the amount of 30% or up to a maximum amount of HRK 20.000 (~€ 2.684) per household for PV power plant for household's self-consumption with installed power up to 10 MW, with a minimum degree of efficiency set at 85%.

- Project 2: Boosting energy efficiency in single-family homes
  - Measure 2.1: Increasing the capacity of thermal insulation of the heated area
    - Total costs for increasing the thermal envelope thermal envelope protection to the heat transfer coefficient U (W/m^2K):
      - < 0,25 for the roof, ceiling and floor of the heated space (Θ_i> 18 °C) against the outer or unheated space;
      - < 0,40 for exterior wall of heated space;
      - < 0,45 for ground floor (underground parts) of heated space;

      will be co-financed with a grant of 50% of the total eligible costs, or up to a maximum of HRK 20.000 (~€ 2.684) per household.
  - Measure 2.2: Replacement of exterior joinery
    - The total cost of replacing the exterior joinery of the heated space with a new one, the heat transfer coefficient U (W/m^2K) should be as follows:
      - <1.6 for the entire set and <1.1 for the glass,

      will be co-financed with a grant of 50% of the total eligible costs, or up to a maximum amount of HRK 12.000 (~€ 1.610) per household.
  - Measure 2.3: Installation of condensing gas boiler
    - Total cost of equipment and installation of condensing gas boiler:
      - Heating energy efficiency class: A,
      - Energy efficiency class for DHW preparation: A, will be co-financed with a grant of 35% of the total eligible costs, or up to a maximum of HRK 15.000 (~€ 2.015) per household
  - Measure 2.4: Gas absorption heating pumps
    - The total cost of equipment and installation of the gas absorption heat pump will be co-financed by a grant of 50% of the total eligible costs, or up to a maximum of HRK 30.000 (~€ 4.027) per household.
  - Measure 2.5: Micro cogeneration/trigeneration system up to 10 kW
    - The total cost of equipment and installation of the micro cogeneration/ trigeneration system will be co-financed with a grant of 50% of the total eligible costs, or up to a maximum amount of HRK 40.000 (~€ 5.369) per household.

Users of Measures 2.3, 2.4 and 2.5 are also eligible for the costs of project documentation and connection to the gas distribution system, up to a maximum of 50% of the total eligible cost, and not exceeding HRK 10.000 (~€ 1.342).

- Project 3: Encouraging reduction of energy consumption and light pollution in public lighting
    - Grants, up to a maximum of 35% of the total eligible costs, and no more than HRK 50.000 (~€ 6.711) per individual beneficiary (municipality/city) to carry out the following activities:
        - Preparing project documentation,
        - modernization of existing systems (replacement of old inefficient with new more efficient light bulbs),
        - construction of new public lighting and
        - establishment of a public lighting management system.

In 2019 HRK 600.516,27 (~€ 80.606,21) for Project 1 and HRK 1.096.461,53 (~€ 147.176,04) for Project 2 were assigned.

5. Other EU low carbon initiatives

5.1. EU initiatives managed by the European Commision

5.1.1. Horizon2020 Programme

Based on publicly available data on NUTS3 region (HR035: Split-Dalmatia County) provided via link (12), Split-Dalmatia has 28 participations in H2020 projects with 3,48 million € of EU contribution and a total of 25 H2020 signed grants. Net EU contribution by Type of organisation is shown in Figure 9 while the participating project partners participations with the related EU contribution are listed in *Figure **10***. In terms of participations, the University of Split leads with a total of 9 projects, followed by the Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture in Split with 4 participations. Nevertheless, the Faculty of Medicine in Split with a total of 3 participations leads with net EU contributions (€ 959.778,00).

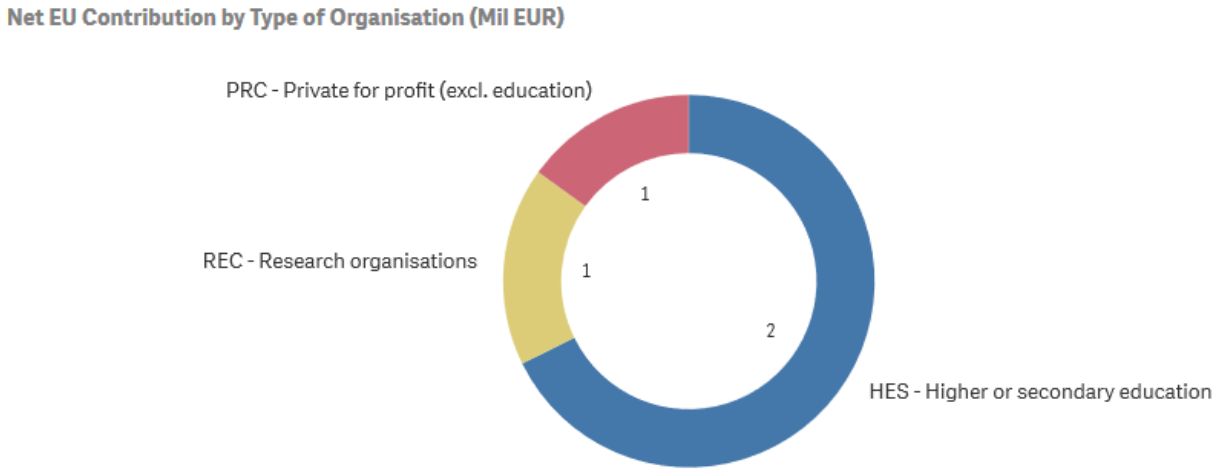

Figure 9 Net EU Contribution by Type of Organisation (12)

Number of project participations and Net EU Contribution

Legal Name	NUTS 3 Name	H2020 Net EU Contribution	H2020 Participations
Totaux		**€ 3.605.812**	**28**
SVEUCILISTE U SPLITU MEDICINSKI FAKULTET	Splitsko-dalmatinska županija	€ 959.778	3
SVEUCILISTE U SPLITU	Splitsko-dalmatinska županija	€ 842.543	9
SVEUCILISTE U SPLITU, FAKULTET ELEKTROTEHNIKE, STROJARSTVA I BRODOGRADNJE	Splitsko-dalmatinska županija	€ 546.479	4
INSTITUT ZA OCEANOGRAFIJU I RIBARSTVO	Splitsko-dalmatinska županija	€ 526.593	3
GALEB DALMATINSKA TRIKOTAZA DIONICKO DRUSTVO	Splitsko-dalmatinska županija	€ 334.672	1
ADRIA WINCH D.O.O. ZA PROIZVODNJU,PROJEKTIRANJE, PROMET I USLUGE	Splitsko-dalmatinska županija	€ 107.530	1
DRUSTVO ZNANOST.ORG	Splitsko-dalmatinska županija	€ 81.930	1
SVEUCILISTE U SPLITU, PRIRODOSLOVNO-MATEMATICKI FAKULTET	Splitsko-dalmatinska županija	€ 81.109	1
FOXY DOO ZA TRGOVINU I USLUGE	Splitsko-dalmatinska županija	€ 50.000	1
INCLUDE DOO ZA PROIZVODNJU ELEKTRICNE OPREME	Splitsko-dalmatinska županija	€ 50.000	1
UNIVERSITY OF SPLIT, FACULTY OF ECONOMICS, BUSINESS AND TOURISM	Splitsko-dalmatinska županija	€ 11.563	1
MEDITERANSKI INSTITUT ZA ISTRAZIVANJE ZIVOTA	Splitsko-dalmatinska županija	€ 8.458	1
INSTITUT ZA JADRANSKE KULTURE I MELIORACIJU KRSA-SPLIT	Splitsko-dalmatinska županija	€ 5.158	1

Figure 10 Number of project participations and net EU contribution (12)

5.1.2. LIFE Programme

The official LIFE programme database allows a filter option for NUTS2 level (13). In case of Croatia, a NUTS2 level is an exclusively geographical boundary between the continental and Adriatic part of the country. Therefore, when filtering these data, a single project directly implemented in the Split-Dalmatia county, which is a NUTS3 region, cannot be fund. A list of LIFE projects is also available on the official webpages (14) of the Croatian Ministry of Energy and Environment, which is the coordinating body for LIFE projects in Croatia, but with the same outcome as in the previously mentioned database.

5.1.3. INTERREG and other EU initiatives

Aggregated data regarding projects and beneficiaries of European Union cross-border, transnational and interregional cooperation programmes among the member States, and between member States and neighbouring countries could be found on the link of Keep.eu (15). The Interact Programme, with the support of the European Commission and the remaining Interreg, Interreg IPA cross-border and ENPI/ENI cross-border programmes, built this database and maintains it, as part of its mission. The database covers the 2000-2006, 2007-2013 and 2014-2020 periods. Data can be filtered on NUTS0, NUTS1, NUTS2 and NUTS3 level. Moreover, the platform has the ability to filter the projects data per thematic objective, programming period etc.

For the purpose of this deliverable, the following data has been selected:

- Programming period 2014-2020;
- NUTS3 level: HR035 Split-Dalmatia county;
- Thematic objective 4 – supporting the shift towards a low-carbon economy in all sectors.

When the 3 above mentioned filters have been applied, 22 projects, 27 partnerships, 21 different thematic have appeared with a total budget of 45,6 million €. The project per partnerships and thematic are shown in Figure 11, while the bubble size indicates total budget size.

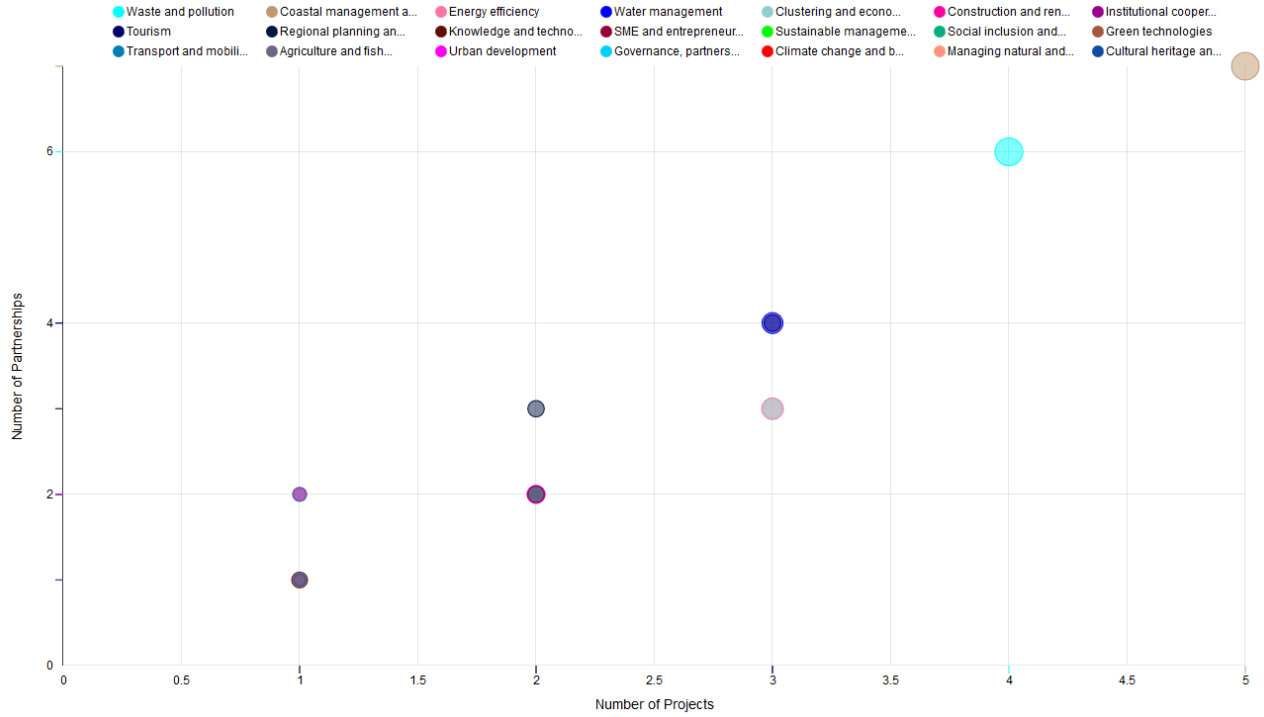

Figure 11 Keep.eu data on project per partnerships, thematic and budget size of HR035 (15)

Under Thematic objective 4, as expected "Coastal management and maritime issues" has the largest amount in terms of number of partnerships, projects and aggregated budget reaching 11,4 million €, followed by "Waste and pollution" with 6,52 million €. Projects per thematic are displayed in Figure 12.

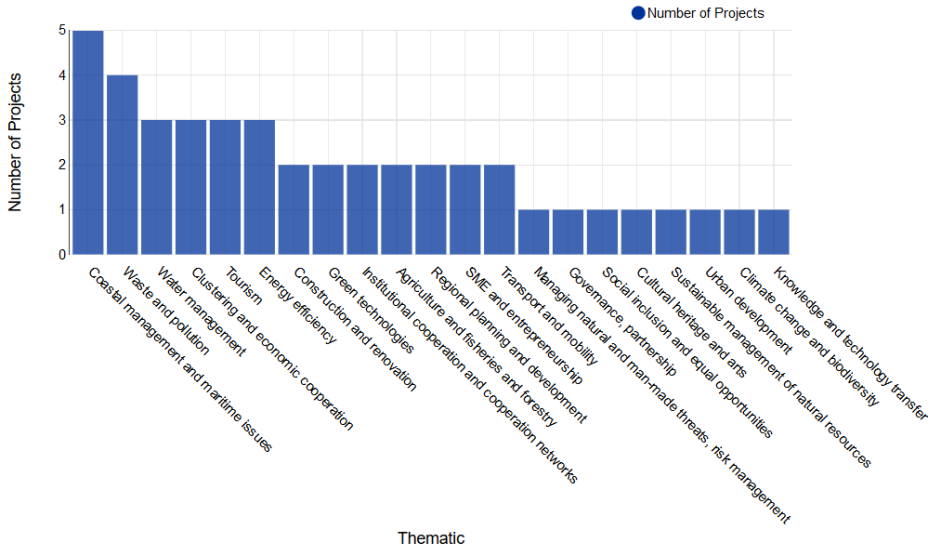

Figure 12 Keep.eu data on projects per thematic of HR035

When making a selective analysis, choosing solely the Interreg Mediterranean Programme, 12 projects appear, with 14 thematic, 14 partnerships with a total of 24,1 million €. Again, the predominant thematic is "Coastal management and maritime issues", followed by "Tourism" and "Transport and Mobility".

While selecting Interreg Central Europe Programme, 9 projects appear in 12 different thematic and 12 partnerships with a total budget of 19,9 million €. Predominant themes are "Waste management", "Water and pollution", "Energy Efficiency" and "Urban development".

Interreg Europe Programme is the less represented with just 1 project covering 3 different thematic, with a total budget of 1,6 million €.

When a search "by projects" is applied (exported data in an Excel file) with relative filters of HR035 and Programming period 2014-2020 in total 41 projects appear. However, it must be considered that a filter of Thematic objective 4 has not been applied because non-existent in this case. A list with the related project is shown in Appendix 1.

5.2. Joint initiatives of the EU with International Financial Institutions

5.2.1. European Fund for Strategic Investments (EFSI)

EFSI is one of the three pillars of the Investment Plan for Europe, the so-called Juncker Plan, and aims to overcome current market failures by addressing market gaps and mobilising private investment. It helps to finance strategic investments with higher risk profile in key areas such as infrastructure, research and innovation, education, renewable energy and energy efficiency as well as risk finance for small and medium-sized enterprises (SMEs).

On the official webpage a project map is provided via link (16) indicating that there are 18 approved EFSI financing, with approved EFSI financing of 284 million € and expected investment related to EFSI of 1,2 billion €. When browsing into projects (17) 9 projects appear from 2015 and 2019, with 3 of them related to energy but only potential two can be applicable at Split-Dalmatia county and described in Table 3.

Table 3 EFSI project list related to energy and potential applicable on regional level

Name of the project	Release date	Promoter- Financial Intermediary	Location	Description and Objectives
FONDS INFRAGREEN III	5 May 2017	RGREEN INVEST	France, EU Countries	Investment fund focusing on energy transition infrastructure projects in the EU The fund aims to invest mainly equity in the development and construction of small to medium-sized solar, wind and biogas assets in the EU.

				Sector(s): Energy - Electricity, gas, steam and air conditioning supply Proposed EIB finance (Approximate amount): 50 million € Total cost (Approximate amount): 250 million €
EIFFEL ENERGY TRANSITION FUND	12 July 2016	EIFFEL INVESTMENT GROUP S.A.S	EU Countries	Fund providing developer finance to small renewables (mostly solar photovoltaic (PV)) and energy efficiency projects mainly in France. Short-term financing to small solar PV, onshore wind and energy efficiency projects/development companies. Sector(s): Energy and Industry Proposed EIB finance (Approximate amount): 50 million € Total cost (Approximate amount): 150 million €

5.2.2. European Local Energy Assistance (ELENA)

ELENA is a joint initiative by the European Investment Fund and the European Commission under the Horizon 2020 programme. ELENA provides grants for technical assistance focused on the preparation and implementation of bankable energy efficiency, distributed renewable energy and urban transport programmes.

According to publicly available data (18), there are only 3 ELENA projects implemented in Croatia but only one can be applicable at regional level and is described is described in Appendix 2. The investment sector is energy efficiency, RES in buildings and street lighting and the beneficiary is the Croatian Bank for Reconstruction and Development (HBOR). The ELENA TA needed by HBOR is related to the preparation and verification of energy audits, basic technical design documentation preparation, development of technical solutions, business plan and procurement support for loan applicants for three types of ESIF loans for

energy efficiency investment in the public and private sectors as well as HBOR's lending programs in EE/RE and other sources of funding.

5.2.3. Joint European Support for Sustainable Investment in City Areas (Jessica)

JESSICA is a policy initiative of the European Commission (EC) developed jointly with the EIB and in collaboration with the Council of Europe Development Bank (CEB). It supports integrated, sustainable urban-renewal projects. A range of sophisticated financial tools are used including equity investments, loans and guarantees, offering new opportunities for the use of EU Structural Funds.

For Croatia, no projects implemented under JESSICA initiative have been found.

5.2.4. Sustainable Energy Finance Facility (SEFF) of EBRD

The EBRD SEFF operates in EBRD's countries of operation. It partners with local financial institutions such as commercial banks, to establish sustainable energy financing channels. These partnerships help direct more finance towards investment opportunities where energy and other resources are used more rationally. Finance for sustainable energy projects is provided for two key areas: energy efficiency and small-scale renewable energy. Local financial institutions on-lend the funds which they have received from the EBRD to their clients, including small and medium-sized businesses, corporate and residential borrowers, and renewable energy project developers.

The European Bank for Reconstruction and Development (EBRD) launched in May 2016 a 60 million € investment project for financing of energy efficiency improvements in Croatian homes and households (19) through the commercial bank (Erste&Steiermärkische Bank). The REENOVA+ is a credit line facility, which is financing residential borrowers seeking to invest in the reduction of home energy bills. The facility finances, among others, the installation of energy efficient windows, the insulation of walls, roofs and floors and the introduction of efficient boilers, solar water systems, heat pumps or home appliances.

The first user of the credit line was registered in May 2016. The investment included installation of thermal insulation and new energy efficient windows. The necessary equipment was selected from the online Technology Selector at the REENOVA + website – a database where pre-approved high-performance energy saving technologies are presented. With the choice made, the family could apply for a loan. Since equipment has already been pre-evaluated for its energy savings potential, the loan approval process did not take long. The investment of HRK 125,000 (roughly € 500) allows the family to save around 12,495 kWh per year, which is positively reflected in the family's energy bill and budget. The investment is being repaid out of energy cost savings and the family can meet other important family needs. Except the mentioned, no other success stories have been founded on publicly available data.

5.2.5. Private Finance for Energy Efficiency (PF4EE)

Private Finance for Energy Efficiency (PF4EE) instrument is a joint agreement between the EIB and the European Commission which aims to address the limited access to adequate and affordable commercial financing for energy efficiency investments. The instrument targets projects which support the implementation of National Energy Efficiency Action Plans or other energy efficiency programmes of EU Member States (20).

The financial Intermediary supported under the PF4EE in Croatia is Zagrebačka Banka d.d. This financial instrument offers long-term loan under favourable conditions, for financing investments in energy efficiency. The purpose of the loan is investments in energy efficiency. No information about the beneficiary using this credit line could be found.

The PF4EE instrument is intended to provide:

- a portfolio-based credit risk protection provided by means of cash-collateral (Risk Sharing Facility), together with
- long-term financing from the EIB (EIB Loan for Energy Efficiency) and
- expert support services for the Financial Intermediaries (Expert Support Facility).

The instrument is managed by the EIB and funded by the Programme for the Environment and Climate Action (LIFE programme). The LIFE Programme committed EUR 80m to fund the credit risk protection and expert support services. The EIB will leverage this amount, making a minimum of 480 million € available in long term financing.

6. National funding schemes

National funding schemes are elaborated in chapter 3.2, and Table 1 presents investment priorities, specific objectives and bodies involved in the management and use of the funds intended for this priority axis.

Furthermore, specific grants assigned from the regional budget to the Programme for Systematic Energy Management are described in chapter 4.

Injection tariffs are bound to contracts regarding renewable energies. If there is no such contract, the remuneration for injection is based on the wholesale price. The tariffs are also dependent on the type of generation as well as on the amount of energy fed into the grid.

Table 4 Electricity grid injection tariffs RES

Electricity grid injection tariffs renewables	€/MWh
Hydro *small hydro	125,97
Wind	102,64
Solar photovoltaic	267,62
Solid biofuels	165,05
Biogases	170,60

Concerning gas injection tariffs for renewables, in Croatia only biomethane (landfill gas) is applicable with 58,57 €/MWh.

As a measure, there are no more incentives such as feed-in tariffs, thus the state will no longer use them to subsidize electricity production from renewable energy sources but will rather switch to premiums. Currently, the premiums models which will be implemented in Croatia are still unidentified.

7. Cooperation with private stakeholders

HEP ESCO d.o.o. is a company owned by HEP Group, which develops, implements and finances market-based energy efficiency projects. The acronym ESCO, Energy Service Company, is a worldwide recognized name for companies that provide full energy savings services through savings. The service encompasses the development, implementation and financing of projects in such a way as to achieve a return on investment through savings in energy and maintenance costs.

In Split-Dalmatia county (21) HEP ESCO is implementing the following projects:

- HEP ESCO has implemented a 2.6 million HRK energy efficiency project in the public lighting of the City of Solin. The project of public lighting modernization covered almost the entire area of Solin. Modern equipment of the highest quality has been replaced with an outdated and inefficient system. Benefits are multiple:
    - Lower energy costs,
    - reduced infrastructure load due to power cuts and
    - lower maintenance costs bring the City savings of as much as HRK 315,000.00 annually.

  The standard mercury lamps were replaced with new sodium, and the jointly selected lamps in the shaded version complemented the city's new eco-lighting system. The total investment will be fully repaid in over eight years.
  The modernization included 1,024 lamps, and the work involved replacing old mercury lamps and lamps with modern sodium, less power and improved features, and installing a control unit on all sodium lamps with two lamps.
- One photovoltaic power plant is located in the HEP ODS (electric utility company) in Split, on the roof of the Elektrodalmacija building at Poljička cesta bb. The building is equipped with 120 pieces of FN panels with individual power of 195 W, which gives a total installed power of 23,4 kW. The value of the investment is approximately 290,000 HRK (excluding VAT), thus expected return on investment is approximately six years.

Moreover, with the City of Split HEP ESCO is involved in 2 EU funded projects FEEDSCHOOLS and TEESCHOOLS respectively from Interreg CE and Interreg MED programmes (listed in Appendix I).

Additional ESCO projects implemented in the region have not been found.

8. Evaluation

The evaluation criteria of the above-mentioned financial facilities/schemes have been provided by AACM (PP8) and filled by EIHP (PP4) as follows:

<u>Setting priorities and objectives for low-carbon funding</u>

- *To what extent do EU priorities and objectives respond to the demands of your regions? Please consider all relevant initiatives described above.*
    - The EU priorities and objectives are widely defined to meet the objectives of a low-carbon economy through various measures. Nevertheless, Split-Dalmatia county is actively participating in numerous EU funding programmes such as Interreg CE, Interreg MED, Interreg Europe, cross boarder programmes etc. Moreover, besides EU initiatives the county has lunched by itself a Programme for Systematic Energy Management (described in

Chapter 4) for boosting energy efficiency measures and RES installation in households and replacement of public lighting systems in the region.

- *To what extent do national priorities and objectives respond to the demands of your specific region?*
  - As mentioned in the previous point, besides EU initiatives there are also regional initiatives tailor-made for regional demands financed directly through the county's budget. National priorities are more widely defined and not covering specific regional demands.
- *If there are regional priorities and objectives, do they appropriately meet actual needs?*
  - Besides the Annual Energy Efficiency Action Plan, which is a planning document for a period of one year and defines the implementation of energy efficiency improvement policies in the County, no formalized regional low carbon policies are existent nor applicable for these purposes.
- *To what extent setting priorities is based on public consultation?*
  - Based on existing information it is very difficult to define to what extent setting regional priorities is based on public consultations.
- *In what low-carbon areas innovative financial schemes can be instrumental?*
  - Financial schemes can be instrumental in energy efficiency, RES, electromobility etc.

Institutional framework

- *Is/are the regional programming and implementation structure(s) appropriate? Any space for improvement?*
  - In general, there are appropriate. There are specific sectors within the region dedicated to low-carbon programmes development and implementation of thematic projects. However, a better interconnection between the region and the cities/municipalities for supporting such programmes and advancing to national and EU authorities might be needed.
- *Is the programming and related decision-making based on appropriate public consultation?*
  - Based on existing information, an existing problem in programming and related decision-making could be the current lack of an energy agency authority in Split-Dalmatia.
- *Are stakeholders comprehensively identified?*
  - For the purpose of Prospect2030, main stakeholders were identified from the county, City of Split, regional development agency (listed in DT237). However, this core stakeholders' group could be enlarged in further project development. On the other hand, for programming purposes there is no such information.

Eligibility and application conditions

- *Are beneficiaries appropriately identified?*
  - The beneficiaries are appropriately identified and covered through various funding programmes.
- *Is the financing (grants or loans) adequately sized?*
  - Probably it is, but based on regional circumstances, the funding should be differently spread between hinterland, coast and islands. As an example, a specific low-carbon measure could be higher grants for energy efficiency and RES in hinterland areas.
- *Are there application conditions that substantially limit the target beneficiaries or the project scope?*
  - There are no conditions that substantially limit the target beneficiary in applying to various funds.

Administrative procedures

- *Are the application procedures transparent? Is sufficient information available?*
  - Application procedures are clearly defined, and sufficient information is available. However, for certain beneficiaries such as SMEs, local or regional public authorities, private

interested groups (households) lack of specialized expertise for application to targeted tenders could be an obstacle.

- *Is the application process easy? Do the beneficiaries need external assistance to complete the application process?*
    - As previously mentioned, for certain beneficiaries such as SMEs, local or regional public authorities, private interested groups (households) lack of specialized expertise for application to targeted tenders could be an obstacle thus external assistance might be needed.
- *Is the required financial administration transparent and smooth?*
    - Yes.
- *Are there significant delays in payments?*
    - As far it is known to the author, there no significant delays in payments from the funds mentioned in this document.

Financial burdens

- *Are there financial burdens to apply for funding (e.g. lack of preparatory resources, own contribution, cash-flow issues concern pre-financing)? Can you pls. differentiate according to types of beneficiaries (e.g. local authorities, private individuals, SMEs)*
    - Potential burden could be lack of preparatory resources to hire specific administrative and technical consultants with related expertise. However, related experts are present in the region and already involved in those processes (i.e. consultants engaged in preparing the tendering documentation for private individuals applying to the Programme for Systematic Energy Management.

Efficiency of use of funding dedicated to sustainable energies

- *Are the dedicated EU grants funding efficiently used?*
    - Considering the overal efficiency of public funds usage described in Chapter 3.1, no.
- *Are there areas where grant funding can (partially) be replaced more market-oriented instruments?*
    - Yes, probably boosting the use of small decentralizes RES in buildings and households.
- *Is the blending of grants and commercial financing a usual praxis in the public sector?*
    - As far it is known, blending of grants is not a usual practice in the public sector.
- *Are there aggregated projects with a critical size that attract the interest of the financial market actors?*
    - According to the received information, there are not such aggregated projects.
- *Are there mechanisms to leverage private financial resources?*
    - ESCO models are existent but have not yet reached an extreme popularity in the region.

9. Conclusion and recommendations

Conclusions and recommendations at the level of the target region

As have been analysed trough this document, within the Split-Dalmatia county numerous low-carbon project from various programmes, mainly Interreg but also H2020 (which is more research oriented-university, SMEs, etc) are being implemented. While looking at the geographical coverage projects are notably concentred in Split while smaller cities and municipalities are less represented. This leads to the obvious conclusion that there is a lack of expertise and capacities for tender's application in hinterland and islands. Moreover, the County should be the hub for this kind of assistance, thus ensuring more equal distribution of public funds through the region.

As an example of smart regional budget fund management, Split-Dalmatia County is implementing the Programme for Systematic Energy Management with an increasing trend in the number of beneficiaries each year.

Conclusions and recommendations at national level

Decentralised funds made available from ESI funds through the Partnership Agreement have not been effectively managed on the national level with a low overall spending rate (solely 21% of the total dedicated amount in the Partnership Agreement was actually spent). Even if the dedicated and spent amount are publicly available data it is very difficult to correlate a specific investment with a measure. Thus, data should be prepared in a more clear and transparent way.

Specific recommendations could be to promote public awareness of the withdrawal of EU funds within individual priority areas axis, with the aim of increasing the ability to use the funds and; boost public consultations to discuss specific goals, investment priorities and thematic objectives and improve cooperation between national authorities (intermediate bodies) and end users.

Conclusions and recommendations at macro-regional (EUSDR, EUSAIR, EUSBSR, EUSALP)

At macro-regional level, cooperation programmes and initiatives should be crucial in delivering and piloting smart energy solution on regional level.

Conclusions and recommendations at EU level

Since regions are more oriented on Interreg cooperation programmes and have a quite good experience in implementing such projects so far, the EU should boost this kind of programmes focusing more on pilot demonstration projects for regional low-carbon solutions.

APPENDIXES

Appendix 1 – Interreg 2014-2020 Programmes implemented in Split-Dalmatia

Programme	Acronym	Institution	Lead Partner	Town	Website	Department	Legal Status
2014 - 2020 Interreg IPA CBC Croatia – Bosnia and Herzegovina - Montenegro	RMPPI	University of Split, Faculty of electrical engineering, mechanical engineering and naval architecture	Yes	Split	http://www.interreg-hr-ba-me2014-2020.eu/		public
2014 - 2020 Interreg IPA CBC Croatia – Bosnia and Herzegovina - Montenegro	RiTour	Public Institution RERA SD for Coordination and Development of Split Dalmatia County	Yes	Split	http://www.interreg-hr-ba-me2014-2020.eu/	Project Preparation and Implementation Department	public
2014 - 2020 Interreg IPA CBC Croatia – Bosnia and Herzegovina - Montenegro	SLEEP MEDICINE	University of Split, School of Medicine	Yes	Split	http://www.interreg-hr-ba-me2014-2020.eu/		public
2014 - 2020 INTERREG VB Mediterranean	SIROCCO	Public Institution RERA S.D. for Coordination and Development of Split Dalmatia County	Yes	SPLIT	https://interreg-med.eu/	Department for project preparation and project implementation	public
2014 - 2020 INTERREG VB Central Europe	CitiEnGov	City of Split	No	Split	http://www.interreg-central.eu	Department of Economy, Tourism, International and European Funds	public
2014 - 2020 INTERREG VB Central Europe	FEEDSCHOOLS	City of Split	No	Split	http://www.interreg-central.eu		public
2014 - 2020 INTERREG VB Central Europe	CIRCE2020	Cistoca Cetinske krajine Ltd.	No	Sinj	http://www.interreg-central.eu	N/A	public
2014 - 2020 INTERREG VB Central Europe	CIRCE2020	Public Institution RERA SD for Coordination and Development of Split	No	Split	http://www.interreg-central.eu	Project Preparation and Implementation Department	public

		Dalmatia County					
2014 - 2020 INTERREG VB Central Europe	ProteCHt2save	City of Kastela	No	Kastel Sucurac	http://www.interreg-central.eu	na	public
2014 - 2020 INTERREG VB Central Europe	BIOCOMPACK-CE	Public Institution RERA SD for Coordination and Developmentof Split Dalmatia County	No	Split	http://www.interreg-central.eu/	Department for Project preparation and implementation	public
2014 - 2020 INTERREG VB Central Europe	boDEREC-CE	Split water and sewerage company Ltd.	No	Split	https://www.interreg-central.eu	Department of General Directors office	public
2014 - 2020 INTERREG VB Central Europe	TASKFORCOME	MUNICIPALITY OF SPLIT	No	Split	https://www.interreg-central.eu		public
2014 - 2020 INTERREG VB Central Europe	TASKFORCOME	Cluster for Eco-Social Innovation and Development CEDRA Split	No	Split	https://www.interreg-central.eu	n/a	private
2014 - 2020 INTERREG VB Central Europe	DEEPWATER-CE	Split Water and Sewerage Company Ltd	No	Split	https://www.interreg-central.eu		public
2014 - 2020 INTERREG VB Central Europe	CWC	Split water and sewerage company Ltd.	No	Split	https://www.interreg-central.eu/	Department of General Director's office	public
2014 - 2020 INTERREG VB Central Europe	CWC	Public Institution RERA SD for Coordination and development of Split-Dalmatia County	No	Split	https://www.interreg-central.eu/	Project Preparation and Implementation Department	public

2014 - 2020 Interreg Europe	CLIPPER	Public Institution RERA S.D. for Coordination and Development of Split Dalmatia County	No	SPLIT	http://www.interregeurope.eu/CLIPPER		public
2014 - 2020 URBACT III	sub>urban	Solin	No	Solin	http://urbact.eu		public
2014 - 2020 URBACT III	Freight TAILS	City of Split	No	Split	http://urbact.eu		public
2014 - 2020 Interreg IPA CBC Croatia – Bosnia and Herzegovina - Montenegro	RiTour	City of Solin	No	Solin	http://www.interreg-hr-ba-me2014-2020.eu/	Department for legal and general affairs	public
2014 - 2020 Interreg IPA CBC Croatia – Bosnia and Herzegovina - Montenegro	RiTour	Public Institution for the Management of Protected Areas in the County of Split and Dalmatia "Sea and Karst"	No	Split	http://www.interreg-hr-ba-me2014-2020.eu/	N/A	public
2014 - 2020 Interreg IPA CBC Croatia – Bosnia and Herzegovina - Montenegro	BACAR	Public Institution RERA SD for Coordination and Development of Split Dalmatia County	No	Split	http://www.interreg-hr-ba-me2014-2020.eu/	Project Preparation and Implementation Department	public
2014 - 2020 Interreg IPA CBC Croatia – Bosnia and Herzegovina - Montenegro	Fortress ReInvented	Municipality of Klis	No	Klis	http://www.interreg-hr-ba-me2014-2020.eu/		public
2014 - 2020 INTERREG VB Adriatic - Ionian	IMPRECO	Public Institution for the Management of Protected Areas in the County of Split and Dalmatia "Sea and Karst"	No	Split	http://www.adrioninterreg.eu/		public
2014 - 2020 INTERREG VB Adriatic - Ionian	HarmoNIA	Institute of Oceanography and Fisheries	No	Split	http://www.adrioninterreg.eu/		public

2014 - 2020 INTERREG VB Adriatic - Ionian	PORTODIMARE	Priority Actions Programme Regional Activity Centre	No	Split	http://www.adrioninterreg.eu/		public
2014 - 2020 INTERREG VB Adriatic - Ionian	ARIEL	Institute of Oceanography and Fisheries	No	Split	http://www.adrioninterreg.eu/		public
2014 - 2020 INTERREG VB Adriatic - Ionian	ARIEL	Public Institution RERA SD for Coordination and Development of Split Dalmatia County	No	Split	http://www.adrioninterreg.eu/	Project Preparation and Implementation Department in close cooperation with Rural Development Department	public
2014 - 2020 INTERREG VB Mediterranean	ARISTOIL	University of Split - Faculty of Chemistry and Technology	No	SPLIT	http://interreg-med.eu/en	Faculty of Chemistry and Technology	public
2014 - 2020 INTERREG VB Mediterranean	ShapeTourism	University of Split, Faculty of Economics	No	Split	https://interreg-med.eu/		public
2014 - 2020 INTERREG VB Mediterranean	TEESCHOOLS	City of Split	No	Split	https://interreg-med.eu/		public
2014 - 2020 INTERREG VB Mediterranean	ConFish	Association for Nature, Environment and Sustainable Development Sunce	No	Split	https://interreg-med.eu/		private
2014 - 2020 INTERREG VB Mediterranean	CAMP-sUmp	University of Split, Faculty of Civil Engineering, Architecture and Geodesy	No	Split	https://interreg-med.eu/	Department of Construction Management and Economics	public
2014 - 2020 INTERREG VB Mediterranean	green mind	County of Split-Dalmatia	No	Split	https://interreg-med.eu/		public
2014 - 2020 INTERREG VB Mediterranean	CO-EVOLVE	Public Institution RERA S.D. for Coordination and Development of Split	No	SPLIT	https://interreg-med.eu/		public

		Dalmatia County					
2014 - 2020 INTERREG VB Mediterranean	CO-EVOLVE	Priority Actions Programme Regional Activity Centre	No	Split	https://interreg-med.eu/		public
2014 - 2020 INTERREG VB Mediterranean	REMEDIO	City of Split	No	Split	https://interreg-med.eu/		public
2014 - 2020 INTERREG VB Mediterranean	PlasticBusters MPAs	University of Split, Faculty of Civil Engineering, Architecture and Geodesy	No	Split	https://interreg-med.eu/		public
2014 - 2020 INTERREG VB Mediterranean	PlasticBusters MPAs	Ministry of Environment and Energy of Croatia.	No	Split	https://interreg-med.eu/	Directorate for Climate Activities, Sustainable Development and Protection of Soil, Air and Sea Department for Sea and Coastal Protection	public
2014 - 2020 INTERREG VB Mediterranean	PHAROS4MPAs	Priority Actions Programme Regional Activity Centre	No	Split	https://interreg-med.eu/		public
2014 - 2020 INTERREG VB Mediterranean	MD.net	Public Institution RERA S.D. for Coordination and Development of Split Dalmatia County	No	SPLIT	https://interreg-med.eu/	Department of development and implementation of EU funded projects	public

Appendix 2 – ELENA Project Factsheet SE HBOR

ELENA Project Factsheet
Sustainable Energy HBOR
(SE HBOR)

Location of planned investments	Croatia
Final Beneficiary	Croatian Bank for Reconstruction and Development (HBOR)
Sector(s) of investment	Energy Efficiency and Renewable Energy in buildings and street lighting
Total Project Development Services (PDS) cost	EUR 2 330 250
ELENA co- financing (in absolute amount)	EUR 2 097 225 (90%)
Project Development Services financed by ELENA	The ELENA TA needed by HBOR is related to the preparation and verification of energy audits, basic technical design documentation preparation, development of technical solutions, business plan and procurement support for loan applicants for three types of ESIF loans for energy efficiency investment in the public and private sectors as well as HBOR's lending programs in EE/RE and other sources of funding. The ELENA funded staff will consist of existing HBOR professionals from different operational departments supervised by one Team Leader. HBOR's objective is that ELENA support is directed to final recipients and will contract TA providers to ensure external expertise for the preparation of the project documentation, according to the needs of each project. TA providers will be selected by HBOR through a public procurement process and will offer a wide range of technical, legal and financial services such as energy audits, investment plan, basic design, development of technical solutions, procurement support and tender documents preparation. Each TA provider will be in charge of set of adjacent counties of Croatia. They will be in charge of promoting ELENA TA activities, recruiting potential project promoters and analysing their projects and needs. The TA providers will present to HBOR a pipeline of projects and a tailor-made TA proposal with budget and TA activities for each project and final recipient, which will be formally approved by HBOR.
PDS Timeframe	Q4 2019 to Q4 2022

Investment programme description	The investment programme consists of investments in energy efficiency (EE) in public and private sector buildings and in building-integrated renewable energy (RE) technologies, as well as EE improvements of street lighting facilities. The portfolio of projects in question is not known yet. However, for the purpose of the ELENA application, HBOR estimates that up to 60 000 street lighting points and 130 000 m2 of buildings plan to be refurbished. The investment programme will be carried out in Croatia. The specific project will depend on the results of the final energy audits and technical studies and are subject to HBOR approval. HBOR is primarily targeting buildings that are currently poorly energy efficient (E or F energy class). Therefore, the expected energy reductions are of 50% in average.
Investment amount to be mobilized	EUR 57 600 000
Description of the approach to implement the Investment Programme	HBOR will implement the Project Development Services through selected TA providers and will approve each project nominated for financing. After the TA activities are completed, the Investor will finance the investment programme through bank loans or other sources of financing. Technical assistance activities will be provided for six groups of adjacent counties in order to stimulate competition, covering the entire territory of the Republic of Croatia as a place of service and to ensure the availability of the ELENA programme for as many interested relevant Investors as possible.
Expected results of investments planned	The total estimated contributions are: • Energy Efficiency – Annual total energy saved 35 GWh. • Renewable Energy – Annual total 1 GWh, of which: 1 GWh RE electricity generation. • CO_2 reductions – Annual total reductions of 8 600 tCO_2eq
Leverage factor (Minimum 20)	Expected at 27,5
Status	Contract signed on 03.10.2019
Contact person at ELENA beneficiary	Mr. Josip Pavković, Managing Director of the Project Finance Department.

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