



European Construction Sector Observatory

Policy measure fact sheet

Croatia

Energy Renovation Programme for Commercial Non-Residential Buildings

Thematic Objectives 1 & 3

February 2018



In a nutshell

Implementing body:	Environmental Protection and Energy Efficiency Fund (EPEEF)
Key features & objectives:	National grant funding programme to encourage and support the partial or complete energy saving renovation of commercial non-residential buildings. It aims to gradually modernise the commercial building stock to reduce costs, increase competitiveness, boost the construction sector and meet EU energy efficiency targets.
Implementation date:	2014 – 2020 (2014 – 2016: first phase, 2017 – 2020: second phase)
Targeted beneficiaries:	Owners of non-residential buildings intended for commercial use, potentially including: local and regional units, public institutions, businesses and natural persons (e.g. tradesmen).
Targeted sub-sectors:	Institutional and commercial buildings, industrial buildings, energy efficiency.
Budget (EUR):	2014-2020: 431.58 million (HRK 3,211.85 million) • 239.95 million (2014-2016) (HRK 1,784.36 million) • 191.63 million (2017-2020) (HRK 1,427.49 million)

The government highlighted the need for policy action to make buildings more energy efficient in order to meet the national energy efficiency targets. The government also recognised the need to stimulate the construction sector by introducing large scale renovation programmes to speed up recovery.

The building sector is a significant energy consumer in Croatia. The residential sector alone accounts for around one third of the country's total energy consumption and, therefore, has the largest energy saving potential¹.

Commercial buildings are also significant energy consumers. With a building stock of 36.5 million m² recorded in 2010, the surface area of Croatia's commercial non-residential buildings equates to 5% of the total building stock and almost 7% of Croatia's total direct energy consumption². As the large majority of the commercial building stock was constructed before 1987 with an energy (heat) demand of 220-250 kWh per year, the Croatian government has identified these older commercial buildings as a priority target for energy saving renovations³.

In line with Directive 2012/27/EU⁴ of the European Parliament and of the Council on energy efficiency, the Croatian government developed its 2nd National Energy Efficiency Action Plan (NEEAP), following on from the 1st version which was published in 2008. In the 2nd NEEAP (2011-2013)⁵, the government highlighted the need for policy action to make buildings more energy efficient in order to meet the national energy efficiency targets. The government also recognised the need to stimulate the construction sector by introducing large scale renovation programmes to speed up recovery⁶. In the 3rd NEEAP (2014-2016)⁷, the government announced its intention to launch a range of public programmes to improve energy efficiency in buildings.

In July 2014, the government launched the Energy Renovation Programme for Commercial Non-Residential Buildings (ERPCB) 2014-2020 as a financial support instrument. The ERPCB provides government funding through the Environmental Protection and Energy Efficiency Fund (EPEEF) to commercial building owners to encourage and assist them to carry out energy saving renovation work on their buildings. The broad aim is to increase the number of renovated commercial buildings with an energy performance certificate rating of B, A or A+. By achieving this goal it is expected to reduce energy consumption, improve building quality, and create new investment and employment opportunities.

The ERPCB provides government funding through the Environmental Protection and Energy Efficiency Fund (EPEEF) to commercial building owners to encourage and assist them to carry out energy saving renovation work on their buildings.

The ERPCB has not proven to be successful thus far, based on the results achieved in the first implementation phase (2014-2016). It has only managed to award grants to just over one third of the expected number for this period, and ERPCB-funded renovation projects have only delivered a small fraction of the energy savings (5%) and levels of investment (<3%) that were expected. Administrative difficulties, state aid restrictions and a lack of demand for co-funded commercial building renovations are cited as potential reasons that may explain the poor results of the ERPCB to date.

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General description

The Energy Renovation Programme for Commercial Non-Residential Buildings (ERPCB) 2014-2020 co-funds energy saving renovation work to any building with majority private ownership, in which more than 50% of the gross floor area is designated for business and/or service industry use, and which fits one of the following building use categories:

- **Offices** (financial institutions, office buildings, business facilities for general use, and other facilities which are predominantly private owned);
- **Hospitality facilities** (hotels, hostels, halls, pools, restaurants, cafés and other hospitality facilities which are predominantly private owned);
- **Retail and wholesale facilities** (shops, retail and wholesale shopping centres which are predominantly private owned);
- **Industrial facilities** (halls, industrial plants, storage facilities, warehouses and other similar facilities which are predominantly private owned);
- **Other** (greenhouses, farms, nurseries, fairgrounds, garages, hangars and other enclosed or semi-enclosed unheated spaces)⁸.

The Environmental Protection and Energy Efficiency Fund has responsibility for implementing and managing the ERPCB, on behalf of the Croatian Government.

The ERPCB awards grant funding to commercial building owners, via calls for applications, to co-finance energy saving renovations. Awarded grants can cover up to a maximum of 40% of the total cost of renovation⁹ and up to a maximum of EUR 200,000, in accordance with the European Commission's 'de minimis' rules, which limit the amount of state-aid that a Member State can award to a beneficiary over three fiscal years¹⁰. Following an approved application, a contract is set up with the building owner.

The activities that are eligible for funding under the ERPCB are:

- Renovation of the building envelope, which refers to improvements in building insulation¹¹;
- Complete building renovations, which covers both the building envelope and the building energy system, including:
 - Heating, cooling and ventilation system: condensing boiler fired by natural gas as an energy product, wood biomass-fired boiler (pellets, chips) - cooling system: control of the central cooling system through heat pump;

- Preparation of hot water – introduction of central system of DHW generation by solar collector system;
- Lighting system: replacement of existing lightning system with a more energy efficient one.

The production of energy performance certificates for buildings that are intended for public use, before and after renovation, is also an eligible activity under the ERPCB.

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The Third National Energy Efficiency Action Plan (NEEAP) for 2014-2016 established specific quantitative targets by building type for the ERPCB to achieve by 2016, as shown in Table 1. The Third NEEAP estimated that the ERPCB would support the renovation of 1,483 buildings and a total reconstruction surface area of 1,784 m². The ERPCB was expected to support energy saving renovations at an estimated total cost of EUR 239.95 million by 2016. In terms of results, the supported renovations were forecast to achieve an estimated EUR 32 million in financial savings by 2016, as well as the potential for an estimated 413 GW/h in annual energy savings by 2016.

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Table 1: Quantitative targets for the ERPCB (2014-2016)

	Offices	Hotels / Restaurants / catering	Wholesale / retail	Industrial facilities	Total
Reconstruction surface (m2)	0.179	0.083	0.519	1.003	1.784
Number of renovations	131	95	695	562	1,483
Energy saving potential (GWh)	28.38	33.37	134.83	216.42	413.00 (1,48 PJ)
Financial saving potential					
• million EUR	2.19	3.10	11.70	15.54	32.55
• million HRK	16.27	23.10	87.03	115.63	242.03
Investment costs					
• million EUR	24.06	11.23	69.81	134.85	239.95
• million HRK	178.94	83.49	519.14	1,002.80	1,784.36

Source: Energy Renovation Programme for Commercial Non-Residential Buildings 2014-2020¹³

The ERPCB targets are based on the assumption that 3% (approximately 480,000 m²) of heated usable floor area of commercial non-residential buildings would be renovated every year, and that the annual energy consumption for heating would be reduced from an average of 220–250 kWh/m² (7.92-9 PJ) to an average of 45 kWh/m² (1.62 PJ).

The ERPCB Implementation Plan also defines the allocated budget (investment cost) for the whole programme, covering both implementation phases, as shown in Table 2.

The Third NEEAP (2014-2016) identifies a range of funding sources for the first phase of the ERPCB between 2014 and 2016. They include the EPEEF, commercial banks, the European Investment Bank (EIB), the European Bank for Reconstruction and Development (EBRD), as well as a number of other financial instruments for businesses in Croatia.

According to the Fourth NEEAP (2017-2019), the second implementation phase of the ERPCB 2014-2020, which is scheduled to run from 2017 to 2020, will be delivered as part of a new measure entitled 'Programme to increase energy efficiency and use of RES (Renewable Energy Sources) in the commercial service sector (tourism and trade)¹⁵. The new measure, including Phase 2 of the ERPCB, is allocated funding of EUR 40 million under the Operational Programme Competitiveness and Cohesion (OPCC) 2014-2020¹⁶. The OPCC is a broad investment programme that is run by the Croatian Ministry of Regional Development and European Funds. The OPCC is financed by EUR 6.8 billion from European Structural and Investment Fund (ESIF) and EUR 3.4 billion from the European Regional Development Fund (ERDF)¹⁷.

Table 2: ERPCB funding/investment 2014-2020

Building Type		ERPCB Investment (Millions EUR/HRK)	
		2014-2016	2014-2020
Offices	EUR	24.06	43.28
	HRK	178.94	322.09
Hotels, restaurants & hospitality facilities	EUR	11.23	20.19
	HRK	83.49	150.27
Retail & wholesale facilities	EUR	69.81	125.56
	HRK	519.14	934.45
Industrial facilities	EUR	134.85	242.54
	HRK	1,002.80	1,805.04
Totals	EUR	239.95	431.58
	HRK	1,784.36	3,211.85

Source: Energy Renovation Programme for Commercial Non-Residential Buildings 2014-2020¹⁴

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Achieved or expected results

A total of three calls for applications were launched by the EPEEF during the ERPCB's first implementation phase (2014-2016). The first two calls in 2014 and 2015 provided support to all types of commercial buildings; however, the third call specifically targeted support for the use of renewable energy systems in tourism-related commercial buildings.

Table 3 presents the main results of the first phase of ERPCB implementation, as documented by the Croatian Government in its annual reports on NEEAP implementation. The three annual reports indicate that the ERPCB achieved significantly lower than the expected results for Phase 1 (2014-2016), when compared to the ERPCB Implementation Plan.

The Annual Report 2015 documents the results achieved in 2014. It does not record any results achieved by the ERPCB in 2014. The Annual Report 2016 states that 49 renovation projects were implemented in 2015. The Annual Report 2017 does not indicate that any new projects were implemented in 2016. The most recent report (2017) only focuses on the achievements made in energy savings and levels of investment in 2016. It is probable that new projects were implemented in 2016 but were simply not recorded/reported in the annual progress report. This conclusion is based on the fact that energy savings and investment were reported for that year. However, based on the reported number of renovation projects implemented over the three-year period (49), the results achieved amount to just 37% of the expected number that was specified in the ERPCB Implementation Plan for 2014-2016.

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Table 3 also shows that the ERPCB has also failed to meet its investment and energy saving objectives, when compared to the ERPCB Implementation Plan. ERPCB funded renovation projects achieved 0.07073 PJ (petajoules) in energy savings in 2014-2016, which is just 5% of the expected energy savings (1.48 PJ). There was also a similar lack of investment achieved in the

same period (EUR 6.59 million), which is just under 3% of the expected level of investment (EUR 240 million).

Table 3: Energy Renovation Programme 2014-2016 Results

Year	N° of projects	Savings (PJ)	Savings (tCO2)	Investment EUR (HRK)	Total funding EUR (HRK)
2015	49	0.02716	2,024.78	4,169,840 (31,492,371.77)	1,609,590 (12,156,286.77)
2016		0.01637	1,340.11	2,246,730 (16,968,228.97)	1,036,860 (7,830,783.48)
Total 2014-2016		0.07073	5,388.05	6,591,500 (49,781,776.24)	2,685,180 (20,279,641.08)

Source: Annual Reports (2015-2017) on NEEAP Implementation¹⁸

Overall, stakeholders acknowledge that the ERPCB has been the least successful of the different energy saving renovation programmes that have been running in parallel with the ERPCB, which have targeted family homes, multi-family housing and public buildings.

According to the stakeholders surveyed, potential reasons that could account for the ERPCB's poor results include state aid restrictions, administrative difficulties, and a lower level of demand/requirement for energy saving renovations in the commercial sector.

Since the 3rd call, no further calls for applications have yet been launched in the 2nd implementation phase. The Ministry of Environment and Energy, which is now in charge of ERPCB implementation, is expected to announce further calls for commercial non-residential buildings in 2018. A probable reason for the delay is that there have been some difficulties related to compliance with state-aid rules that are impacting ERPCB implementation by the EPEEF (see perspectives section for details).

For future calls to be released by the Ministry of Environment and Energy, a total of EUR 40 million of ESIF/ERDF funding has been allocated through the Operational Programme Competitiveness and Cohesion (OPCC) 2014-2020¹⁹.

By 2020, it is expected that ERPCB's co-financed building renovation work will help to stimulate investments of around EUR 430 million (HRK 3.2 billion) through new businesses and entrepreneurship and will help to create around 11,000 new jobs²⁰. However, based on the ERPCB's underachievement to date, these objectives may not now be achievable.

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Perspectives and lessons learned

From a **government perspective**, Croatia's strong dependence on state incentives to support energy saving renovations is considered to be a structural weakness.

These incentives are necessary because there are limited alternative financial incentives available to help building owners to carry out energy saving renovation work. In addition, energy prices in Croatia are relatively low, which hinders demand for energy efficiency and savings. In addition, the use of private sector driven financial instruments, such as Public Private Partnerships, is relatively new in Croatia²¹.

From an **implementation perspective**, the Environmental Protection and Energy Efficiency Fund (EPEEF) argues that there are multiple explanations for the relatively low demand for the energy renovation programme for commercial buildings. For example, the EPEEF says that its management team has been constrained by a number of restrictions, such as the maximum co-financing limits and state aid rules for the commercial sector. According to the Fund, the possibility to use block exemptions to circumvent state-aid rules was not fully utilised during the programme's management.

Compliance with state-aid rules imposed maximum co-financing limits on the programme. As a result, for many of the larger companies with substantial financial and technical capacities, the programme was simply not attractive enough. For smaller enterprises, on the other hand, there are financial incentives that encourage participation; however, many do not possess the technical capacity to deal with the programme's administrative procedures.

While one of the drivers of the programme is seen in experimenting with national funding to pave the way to EU structural funds, it can be expected that the administrative procedures tied to EU funding will become more complex. This was demonstrated by the case for the renovation programme of multiple-apartment buildings which recently transitioned to EU funding. For commercial buildings, it is still unclear when the new calls – now under the Ministry of Energy – will be published²².

From an **industry perspective**, the main strengths of the programme lie in decreasing energy consumption and achieving cost savings.

On the contrary, a core weakness is the speed with which the programme is being implemented, with targets set in the action plan that are sometimes unrealistic. Administrative difficulties are highlighted as one of the key reasons, which are exacerbated by the considerable number of measures and procedures required to achieve the programme.

The Croatian Industry Federation emphasises the importance of achieving energy savings in commercial non-residential buildings. The Federation also stresses the need to increase private sector involvement in the programme, for example by stimulating its participation in the energy efficient reconstruction of almost zero energy buildings. Given that commercial non-residential buildings in the Republic of Croatia are predominantly in private hands and make up more than half of the gross floor area in the country, there is a good case for greater involvement of the private sector²³.

From the **perspective of the Croatian Green Building Council (CGBC)**, the programme is today seen as the most unsuccessful of the energy renovation measures launched along with the Energy Efficiency Action Plan, because commercial buildings had the least need for energy renovation. The CGBC is a non-profit association with a membership of 100 companies and institutions that is working with private and public sectors to ensure the application of sustainable building principles. According to the Council, the commercial building stock is newer than other building types, such as residential buildings or multi-apartment buildings. In their view, approximately 90% of the building stock complies with the high demands of energy performance and is therefore not in need of energy renovation²⁴.

From the **perspective of the Croatian Green Building Council (CGBC)**, the programme is today seen as the most unsuccessful of the energy renovation measures launched along with the Energy Efficiency Action Plan, because commercial buildings had the least need for energy renovation.

Endnotes

- 1 European Bank for Reconstruction and Development, Strategy for Croatia (2017):
<http://www.ebrd.com/strategy-and-policy-coordination/strategy-for-croatia.pdf>
- 2 Fond za zaštitu okoliša i energetska učinkovitost (FZOEU), Energetska učinkovitost u zgradarstvu (Energy Efficiency in Buildings), Energetska obnova nestambenih zgrada: http://www.fzoeu.hr/hr/energetska_ucinkovitost/enu_u_zgradarstvu/energetska_obnova_nestambenih_zgrada/
- 3 Ibid
- 4 Energy Efficiency Directive 2012/27/EU: <https://ec.europa.eu/energy/en/topics/energy-efficiency/energy-efficiency-directive>
<http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1399375464230&uri=CELEX:32012L0027>
- 5 2nd National Energy Efficiency Action Plan 2011-13: <https://www.mingo.hr/userdocsimages/energetika/2nd%20National%20Energy%20Efficiency%20Action%20Plan%20of%20the%20Republic%20of%20Croatia%20until%20the%20end%20of%202013.pdf>
- 6 Interview with a former representative of the EPEEF.
- 7 3rd National Energy Efficiency Action Plan 2014-16: https://ec.europa.eu/energy/sites/ener/files/documents/2014_neeap_en_croatia.pdf
- 8 Third National Energy Efficiency Action Plan (NEEAP) of the Croatian Government for 2014-2016, pages 79-81:
https://ec.europa.eu/energy/sites/ener/files/documents/2014_neeap_en_croatia.pdf
- 9 Ibid
- 10 European Commission, 'de minimis' aid regulations: http://ec.europa.eu/competition/sectors/energy/environment_en.html
<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2006:379:0005:0010:EN:PDF>
- 11 The building envelope consists of exterior walls, basement walls, outer window and door frames, ceilings bordering an unheated attic, or flat roofs and pitched roofs if attic space is heated.
- 12 Directive 2010/31/EU of the European Parliament and of the Council of 19 May 2010 on the energy performance of buildings
http://eur-lex.europa.eu/legal-content/EN/ALL/;ELX_SESSIONID=FZMjThLLzfxmmMCQGp2Y1s2d3Tjwtd8QS3pdkhXZbwqGwlgY9KN!2064651424?uri=CELEX:32010L0031
<https://ec.europa.eu/energy/en/topics/energy-efficiency/buildings/nearly-zero-energy-buildings>
- 13 Energy Renovation Programme for Commercial Non-Residential Buildings for 2014-2020, including a detailed energy recovery plan for commercial non-residential buildings for 2014-2016 (Program energetske obnove komercijalnih nestambenih zgrada za razdoblje 2014 2020) (2014): http://cei.hr/upload/2014/08/program_eo_kz_2014-2020_53fb246f3ec10.pdf
- 14 Energy Renovation Programme for Commercial Non-Residential Buildings for 2014-2020, including a detailed energy recovery plan for commercial non-residential buildings for 2014-2016 (Program energetske obnove komercijalnih nestambenih zgrada za razdoblje 2014 2020) (2014): http://cei.hr/upload/2014/08/program_eo_kz_2014-2020_53fb246f3ec10.pdf
- 15 Fourth National Energy Efficiency Action Plan (NEEAP) of the Croatian Government for 2017-2019, pages 61-62:
https://ec.europa.eu/energy/sites/ener/files/hr_neeap_2017_en.pdf
- 16 EIB, Assessing the potential future use of financial instruments in Croatia, Sept 2015, page 51 – thematic objective 4 (TO4), investment priority 4b, specific objective (SO) 4b2:
https://www.fi-compass.eu/sites/default/files/publications/4-Assessing-the-potential-future-use-of-FI-in-Croatia_TO1_TO4_TO7.pdf
- 17 Ministry of Science and Education, Operational Programme Competitiveness and Cohesion 2014-2020:
<https://mzo.hr/en/rubrike/op-competitiveness-and-cohesion-2014-2020>
- 18 Ministry of the Economy (Ministarstvo Gospodarstva), Annual Reports (2015-2017) on NEEAP Implementation (covering implementation progress in 2014-2016) - see Previous Annual Reports for 2015-2016:
<https://ec.europa.eu/energy/en/topics/energy-efficiency/energy-efficiency-directive/national-energy-efficiency-action-plans>
<https://ec.europa.eu/energy/sites/ener/files/documents/Annual%20Reports%20submitted%20in%202015.zip>
https://ec.europa.eu/energy/sites/ener/files/documents/annual_reports_submitted_in_2016.zip
http://cei.hr/upload/2016/09/izvjesce-2016-godina_57ea42ee8005b.pdf
https://ec.europa.eu/energy/sites/ener/files/documents/hr_annual_report_2017_hr.pdf
- 19 European Investment Bank, Assessing the potential future use of financial instruments in Croatia, Page 51:
https://www.fi-compass.eu/sites/default/files/publications/4-Assessing-the-potential-future-use-of-FI-in-Croatia_TO1_TO4_TO7.pdf
- 20 Croatian Economic Chamber – Trade Department, Energy Saving Building Renovations, Procedure for co-financing projects for energy saving building renovations, Page 9: <https://www.hgk.hr/documents/predavanje-ilic5892f6ffb3bb5.pdf>
- 21 Telephone enquiry with a representative of the Ministry of Energy.
- 22 Information exchange with representative from the Croatian Federation of the Construction Industry.
- 23 Consultations with Croatian Construction Industry Federation.
- 24 Telephone enquiry with Green Building Council Croatia.