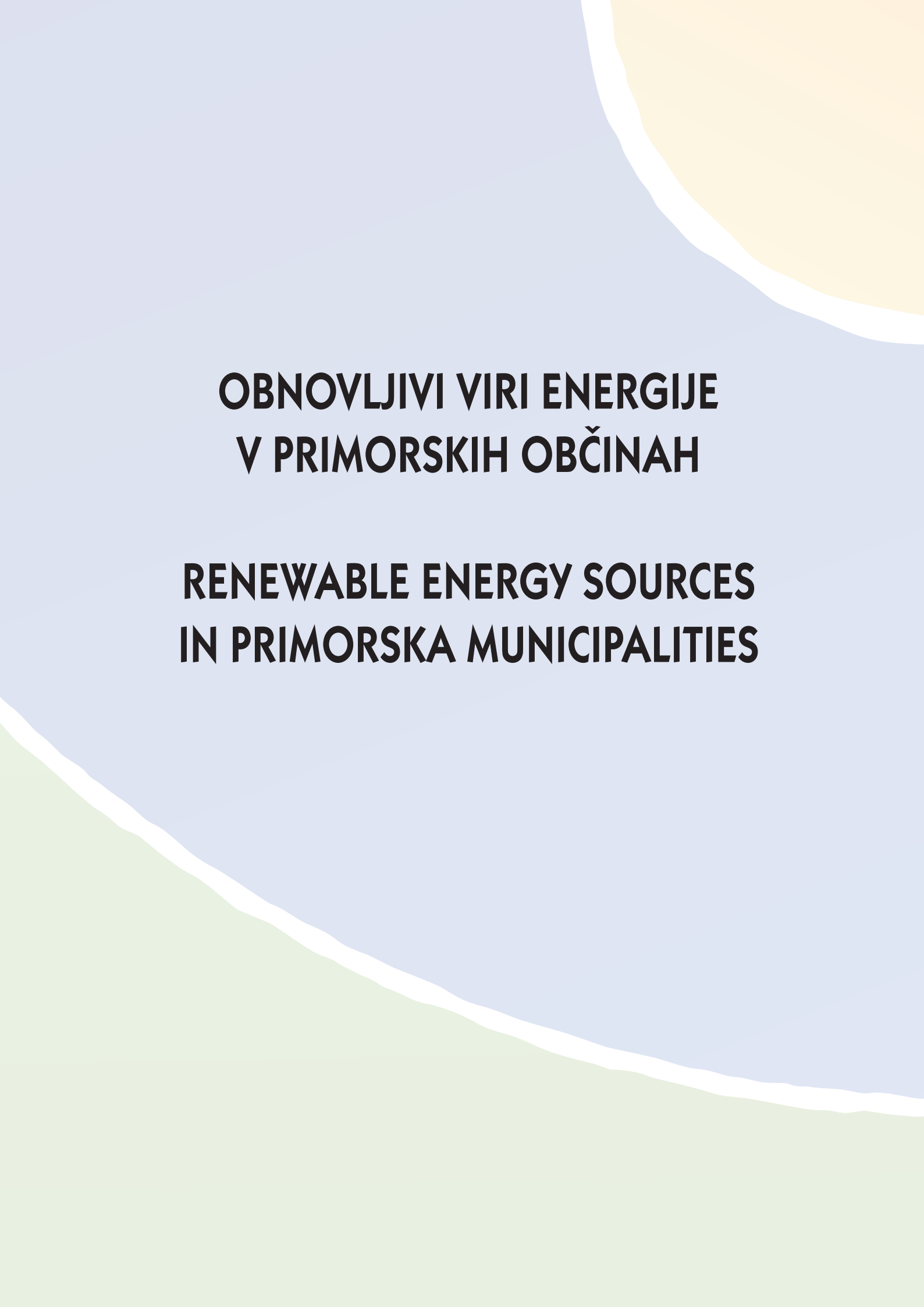




OBNOVLJIVI VIRI ENERGIJE V PRIMORSKIH OBČINAH

RENEWABLE ENERGY SOURCES IN PRIMORSKA MUNICIPALITIES



OBNOVLJIVI VIRI ENERGIJE V PRIMORSKIH OBČINAH

RENEWABLE ENERGY SOURCES IN PRIMORSKA MUNICIPALITIES

Uvodnik

Goriška lokalna energetska agencija GOLEA je v sodelovanju z občinami Šempeter - Vrtojba, Brda, Tolmin, Cerklje, Pivka, Ilirska Bistrica, Piran, mestnima občinama Koper in Nova Gorica ter Triglavskim narodnim parkom (TNP) v letih 2010–2015 uspešno izpeljala **projekt »Obnovljivi viri energije v primorskih občinah«**.

Projektne aktivnosti so bile iz donacije Švicarskega prispevka financirane v višini 3,68 milijonov švicarskih frankov, ostala sredstva so prispevale v projekt vključene občine in TNP. Ker se je menjalni tečaj med švicarskim frankom in evrom večkrat spremenil, kar je bilo za projekt ugodno, se je celoten proračun projekta povečal s 3,42 mio EUR na 4,44 mio EUR, trajanje projekta pa se je podaljšalo za 20 mesecev. Tako smo imeli možnost izvesti bistveno več investicij in izobraževalnih aktivnosti.

Prva velika investicija v okviru projektnih aktivnosti je bila postavitve 167-kilovatne sončne elektrarne, ki ima kar nekaj posebnosti: to je prva **sončna elektrarna** v Sloveniji, ki je postavljena na protihrupni ograji avtoceste (degradirano območje), in sicer pred cestninsko postajo Bazara v Vrtojbi v Občini Šempeter - Vrtojba. Od začetka delovanja sončne elektrarne do konca leta 2015 je proizvodnja energije elektrarne znašala 554 MWh. S proizvodnjo energije iz sončnega (obnovljivega) vira energije so se v celotnem obdobju delovanja elektrarne CO₂ emisije zmanjšale za 389 ton.

Druga investicija v okviru projektnih aktivnosti je bila **prenova kotlovnice** na kurilno olje v šolah v Kojskem, Cerklju, Košani, Hrvatinih, Šmarjah pri Kopru, Svetem Petru, Sečoveljah, Trnovem, Knežaku in Ilirski Bistrici ter knjižnici Tolmin in Informacijskem središču TNP v Trenti, kjer se sedaj ogrevajo na lesno biomaso (sekanci ali peleti). Skupaj je tako prenovljenih 12 kotlovnice, ki na lesno biomaso ogrevajo 29 objektov.

Nekatere stavbe z novimi kotlovnice so bile sočasno oz. leto kasneje tudi energetske sanirane, in sicer šole v Trnovem, Kojskem, Vrtojbi, Svetem Petru, italijanska šola v Sečoveljah, telovadnica in del šole v Hrvatinih, telovadnica v Šmarjah pri Kopru in knjižnica v Tolminu. **Energetska sanacija** 8 objektov je obsegala prenovo 7 fasad, 7 prenov oz. izolacij streh, 9 menjav stavbnega pohištva, 2 prenovi notranje razsvetljave in 14 izvedb manjših investicijskih ukrepov.

Od začetka delovanja kotlovnice in prenove objektov do zaključka projekta so kotlovnice proizvedle 5.590 MWh toplote, raba energije pa se je zmanjšala za 1.628 MWh, kar znaša 272.903 EUR prihrankov. Emisije CO₂ so se zmanjšale za 1.940 ton.

V **izobraževalni program o obnovljivih virih in učinkoviti rabi energije**, ki je tretja projektna aktivnost, je bilo skupaj vključenih 20.138 učiteljev, otrok, učencev, dijakov in javnih uslužbencev. Organizirali smo delavnice za učitelje in javne uslužbenke, v 34 šolah so tri šolska leta potekali krožki in tehnični dnevi, objavljeni so bili trije natečaji, organizirali smo tri dneve OVE in URE*, nagrajenci natečaja pa so se udeležili tematskih ekskurzij. Na internetu so prosto dostopna interaktivna e-gradiva OVE in URE (<http://egradiva.golea.si>), v Energetskem eko parku OŠ Cerklje je postavljena Brunarica obnovljivih virov energije, šole so prejele gradivo OVE in URE za učitelje ter didaktično učilo – hiško OVE. V 13 objektih (šole, knjižnica in Informacijsko središče TNP v Trenti) so postavljeni informacijski monitorji, ki prikazujejo podatke iz prenovljenih kotlovnice s števcem nižanja okoljskih emisij in vrednotenjem učinkovitosti ogrevanja. Izobraževalni program tega projekta je leta 2015 prejel **Energetsko nagrado** časnika *Finance* za **zmagovalni promocijski projekt URE/OVE**.

* OVE = obnovljivi viri energije, URE = učinkovita raba energije

Projekt je bil s strani Švicarskega prispevka izbran kot **primer dobre prakse**, kot pregleden projekt z dobro porabljenimi sredstvi v okviru celotnega programa. O projektu je bil tudi posnet film, ki je bil maja 2013 predstavljen na letni prireditvi programa v Bernu.

Projekt je primorske občine spodbudil k prvim energetskim sanacijam v regiji. Izkušnje z izvedbo sanacij v letu 2012 so bile za občine odločilne za nadaljnje investicije v energetske sanacije v okviru tega projekta, pa tudi zato, ker so kasneje pridobile 20 mio EUR strukturnih sredstev na razpisih Ministrstva za infrastrukturo, namenjenih za energetske sanacije javnih objektov.

Projekt je v tem okolju specifičen, ker je izvajalska agencija v njem pritegnila k sodelovanju in združila 9 občin in TNP, posebej z objavo skupnih razpisov, s sodelovanjem na skupnih dogodkih ter vključitvijo šol na njihovih območjih v izobraževalni in promocijski program projekta. To je zahtevalo zelo veliko usklajevanj z župani, direktorji občinskih uprav in TNP, s strokovnimi sodelavci za področje investicij in projektov, z občinskimi finančnimi službami ter s primorskimi šolami.

Zelo dobra izkušnja občin in izvajalske agencije se nadaljuje v prizadevanjih za nadaljnjo skupno izvedbo energetskih sanacij javnih objektov na Primorskem.

Projekt smo uspešno izvedli v tesnem sodelovanju in ob podpori Nacionalnega koordinacijskega organa Švicarskega prispevka pri Službi vlade RS za razvoj in evropsko kohezijsko politiko, skrbnikov projekta pri donatorju, tj. State Secretariat for Economic Affairs SECO iz Berna, in švicarskega veleposlaništva v Sloveniji.

Pet let in osem mesecev smo vztrajno delovali na območju Primorske. Po izvedenih investicijah in izpeljanih izobraževalno promocijskih aktivnostih primorski učenci, učitelji, javni uslužbenci in občani dobro poznajo obnovljive vire in učinkovito rabo energije. Uporaba obnovljivih virov se je povečala, učinkovita raba energije se je bistveno zvišala, obenem pa smo pripomogli k odgovornemu ravnanju z energijo in spoštljivemu odnosu do planeta Zemlja.

V brošuri povzemamo izvedene aktivnosti projekta vseh sodelujočih občin, Triglavskega narodnega parka, vključenih šol in drugih organizacij.

Rajko Leban
vodja projekta in direktor GOLEA

Editorial

In years 2010 – 2015, the Gorica Local Energy Agency GOLEA, together with other participants in the project, municipalities Šempeter-Vrtojba, Brda, Tolmin, Cerklje, Pivka, Ilirska Bistrica, Piran, Koper, Nova Gorica and the Triglav National Park (TNP) have successfully completed **project Renewable Energy Sources in Primorska Municipalities**.

Project activities were financed by grants from the Swiss Contribution in the amount of 3.68 million Swiss francs, the remaining funds being provided by the participating municipalities and the TNP. Due to repeated changes in the exchange rate between the Swiss franc and the euro, which were favourable to the project, the total project budget of 3.42 million euros actually increased to 4.44 million euros and the project period was extended to 20 months. Consequently, we were able to implement significantly more investments and educational activities than initially envisioned.

The first major investment in the framework of project activities was a 167 kW solar power plant, which has some exceptional qualities: it is the first **solar power plant** in Slovenia, to be built on top of a highway noise barrier (a brownfield site). It is located just before the Bazara toll station in Vrtojba within Municipality Šempeter-Vrtojba. Since the operation launch of the solar power plant at the end of 2015, the power plant produced 554 MWh of electricity. With energy production from solar (renewable) sources of energy, during the entire period of operation of the power plant, CO₂ emissions were reduced by 389 tonnes.

The other major investment under project activities was the **renewal of boiler rooms** in schools Kojško, Cerklje, Košana, Hrvatin, Šmarje pri Kopru, Sveti Petar, Sečovelje, Trnovo, Knežak and Ilirska Bistrica, including Library Tolmin and the TNP Info

Center in Trenta. These boiler rooms were previously heated using fuel oil and are now firing biomass (wood chips or pellets). In total, 12 boiler rooms were thus renovated, with 29 facilities now heated using biomass.

At the same time, or up to a year later, some of the buildings with new boiler rooms also had comprehensive energy retrofits: primary schools Trnovo, Kojško, Vrtojba, St. Peter, the Italian School in Sečovelje, the gym and part of the school in Hrvatin, the gym in Šmarje pri Kopru and the Tolmin Library. The **energy retrofit** of 8 buildings consisted of the renovation of 7 facades, and renovations of 7 roof insulations, 9 replacements of doors and windows, 2 renovations of interior lighting and 14 examples of small investment measures.

Since the beginning of operation of the boiler and renovation of existing facilities until the completion of the project, the boiler rooms produced 5,590 MWh of heat; energy consumption was reduced by 1,628 MWh, which amounts to 272,903 euros in savings and a reduction of CO₂ emissions by 1,940 tons.

The **educational program for renewable energy sources and rational use of energy**, the third project activity, involved a total of 20,138 teachers, children, pupils, students and public employees.

We organized workshops for teachers and public employees, in 34 schools during three school years, they held interest circles and science days. Three competitions were announced and held, as well as three RES and RUE Days with the winners of the competitions participating in thematic excursions. Interactive RES and RUE e-Content (<http://egradiva.golea.si>) was made available over the internet, free

of charge. The Energy Eco Park at Primary School Cerklje established an Eco House of Renewable Energy Sources, the schools received RES and RUE materials for teachers and a didactic teaching tool – the RES Model House. In 13 facilities (schools, library and Info Center Trenta) information monitors were installed to display data from the renovated boilers, including indicators of the reduction in environmental emissions and for the evaluation of the efficiency of heating.

The educational program of this project won the 2015 **Energy Prize** awarded by the Finance newspaper for the best promotional RUE / RES project in the year.

The Swiss Contribution highlighted the project as an **example of best practices**, for transparent and excellent use of project funds within the context of the overall program. A movie was also filmed about the project, which was presented at the May 2013 Annual Event of the program in Bern.

The project gave incentive for Primorska municipalities to venture the first energy retrofits in the region. Experience with the implementation of energy retrofits in 2012 was decisive for the municipalities further implementation of investments in energy retrofits under this project, as well as for their subsequent acquisition of 20 million euros from EU structural funds through public tenders published by the Ministry of Infrastructure, intended for energy rehabilitation of public facilities.

This project is very specific in this environment, because the executive agency joined forces with, and united 9 municipalities and the TNP, especially for the joint public procurement calls, participation in joint events and the involvement of schools in their area with educational and promotional projects.

This required a lot of coordination with mayors, directors of municipal administrations and the TNP, responsible officials in the field of investments and projects, with municipal financial services and with Primorska schools.

The excellent experience of municipalities and the executive agency continues in an effort with further joint implementation of energy rehabilitation projects on public buildings in the Primorska region.

The project was carried out successfully, in close cooperation and with the support of the National Coordination Unit of the Swiss Contribution at the Government Office for Development and European Cohesion Policy, and the trustees of the project at the donor side - State Secretariat for Economic Affairs SECO from Bern and the Swiss Embassy in Slovenia.

Five years and eight months we have performed consistently in the Primorska region and with implemented investments and associated educational and promotional activities, Primorska students, teachers, public employees and citizens, now have a solid knowledge of issues in renewables and efficient energy use. The use of renewable energy sources has increased significantly and there is an improvement in the efficient use of energy, together with responsible management of energy and a more respectful attitude towards the planet.

This brochure summarizes the activities implemented in the project by all the participating municipalities, the Triglav National Park, the schools involved and other participating organizations.

Rajko Leban
Project Leader and Director of GOLEA

RES = Renewable Energy Sources, RUE = Rational Use of Energy

Sončna elektrarna na protihrupni ograji hitre ceste - Občina Šempeter Vrtojba



Postavitev 167-kilovatne **sončne elektrarne**, ki ima kar nekaj posebnosti, je potekala poleti 2012. To je prva sončna elektrarna v Sloveniji, ki je postavljena na protihrupni ograji avtoceste (degradirano območje), in sicer pred cestninsko postajo Bazara v Vrtojbi v Občini Šempeter - Vrtojba. Na dolžini 648 m je 644 panelov, skupna površina pa znaša 1.082 m². Konstrukcija za panele je bila izdelana po posebni metodologiji, da vzdrži tudi sunke burje pri 200 km/h.

Od začetka delovanja sončne elektrarne proizvodnja energije elektrarne znaša 554 MWh. S proizvodnjo energije iz sončnega (obnovljivega) vira energije smo v celotnem obdobju delovanja elektrarne zmanjšali emisije CO₂ za 389 ton.

Investicija v elektrarno je znašala 556.023 EUR brez DDV, od tega donacija Švicarskega prispevka 461.499 EUR, občina pa je prispevala 94.524 EUR in vrednost DDV. Občina je prispevala še 77.482 EUR za izobraževalni program in vodenje projekta.

Občina in organizacije, katerih ustanoviteljica je občina, so se tudi vključile v aktivnosti ozaveščanja javnih uslužbencev in občanov, zanje so bile organizirane delavnice o uporabi obnovljivih virov energije in učinkoviti rabi energije, skupaj z informacijami o možnih sofinanciranjih.

Občina je želela s postavitvijo foto-napetostne elektrarne spodbuditi tudi druge k investiranju v proizvodnjo električne energije iz obnovljivih virov. Pri tem so pomembni prihranki in skrb za okolje, saj se na ta način proizvede veliko manj CO₂. Seveda pa je bila pri naložbi pomembna tudi ekonomika. V finančnem smislu proizvedena energija sončne elektrarne predstavlja 40 % stroškov za električno energijo, potrebno za občinsko javno razsvetljavo. Po prenovi javne razsvetljave v občini se bodo znižali tudi ti stroški in pričakujemo, da bo v prihodnosti sončna elektrarna proizvedla 60 % energije, ki jo potrebujemo za občinsko javno razsvetljavo.

Milan Turk, župan



Solar Power Plant on Motorway Noise Barrier - Municipality Šempeter Vrtojba

Installation of the 167 kW **solar power plant**, with some atypical features, took place in the summer 2012. This is the first solar power plant in Slovenia, to be installed on top of a motorway noise barrier (a brownfield site), located right before the toll station Bazara in Vrtojba, Municipality Šempeter Vrtojba. With a length of 648m, it holds 644 panels with a total surface area of 1,082 m². The structure of the panels has been designed with the help of a special methodology in order to be capable of withstanding even the local Bora wind, blowing at 200 km/h.

Since the beginning of the operation, the solar power plant generated power to the amount of 554 MWh. Through energy generation using solar (renewable) sources of energy, during the entire period of operation of the plant, we have managed to reduce CO₂ emissions by 389 tons.

The investment in the plant amounts to €556,023 excluding VAT, the Swiss Contribution grant amounted to €461,499, with the municipality contributed €94,524 and the value of VAT.

The municipality has also contributed another €77,482

towards the education program and for the management of the project.

The municipality, along with organizations, where the municipality acts as the founder, were also involved in the activities to raise awareness with public employees and citizens, they organized workshops on the use of renewable energy, energy efficiency, together with information on the available sources of co-financing for such endeavours.

By installing a photovoltaic plant, the municipality wished to encourage others to invest in electricity generation from renewable sources. This contributing savings, as well as protection of the environment, as these methods produce much less of CO₂. However, the economics of investment are also important. In financial terms, the energy output of the solar power plant represents 40% of the total electricity consumed for municipal public lighting. After the reconstruction of public lighting in the municipality, costs will be reduced, and we expect that in the future, the solar power plant is to produce 60% of the energy needed for municipal public lighting.

Milan Turk, Mayor



SANACIJE OBJEKTOV

Osnovna šola Cerklje - Občina Cerklje



Prenova kotlovnice v OŠ Cerklje na ogrevanje na lesno biomaso je potekala poleti 2012. S sekanci ta kotlovnica ogreva objekte osnovne šole, glasbene šole, muzeja in obe stavbi vrtca v Cerklju. Iz kotlovnice se tudi dogreva topla sanitarna voda Večnamenskega centra Cerklje. V poletnih mesecih 2014 in 2015 so bili v kotlovnici na lesno biomaso in v rezervni muzejski kotlovnici na kurilno olje **izvedeni manjši investicijski ukrepi** za optimizacijo delovanja in daljinski nadzor ogrevalnega sistema.

Glede na to, da se na isto kotlovnico ogreva pet objektov, se poraba toplote v MWh ni bistveno zmanjšala, je pa zaradi zamenjave energenta skupni finančni prihranek 38.816 EUR in emisije CO₂ so se zato zmanjšale za 357 ton.

Investicija v kotlovnico je znašala 428.608 EUR brez DDV, od tega donacija Švicarskega prispevka 60 %, Občina Cerklje pa je prispevala 40 % in vrednost DDV.

Po pridobitvi dodatnih sredstev so bila v Cerklju v letu 2015 izvedena še dodatna investicijska dela: v OŠ Cerklje so bili **zamenjani radiatorji in vgrajeni termostatski ventili**, v stavbi montažnega vrtca so bila **zamenjana okna in vzpostavljen**

daljinski nadzorni sistem, ki omogoča, da je kotlovnica na kurilno olje rezervni vir toplote tudi za Večnamenski center Cerklje.

Dodatne investicije so znašale 102.938 EUR brez DDV, od tega donacija Švicarskega prispevka 87.497 EUR, Občina Cerklje pa je prispevala 15.441 EUR in vrednost DDV.

Občina je za izobraževalni program in vodenje projekta prispevala 59.459 EUR.

V okviru izobraževalnega programa projekta se je Osnovna šola Cerklje po uspešni prenovi kotlovnice vključila v izobraževalni program OVE in URE. Šola je tako usposobila **promotorje obnovljivih virov energije** za izvajanje vsebin z didaktičnim učilom – hiško ter izvajala krožke in tehnične dneve OVE in URE z različnimi izobraževalnimi temami z omenjenega področja. V cerkljanskem Energetskem eko parku stoji tudi učilnica v naravi »Brunarica obnovljivih virov energije«.

Občina in organizacije, katerih ustanoviteljica je občina, so se tudi vključile v aktivnosti ozaveščanja javnih uslužbencev in občanov. Zanje so bile organizirane delavnice o uporabi obnovljivih virov energije in učinkoviti rabi energije, skupaj z informacijami o možnih sofinanciranjih.



BUILDINGS ENERGY RETROFIT

Primary School Cerklje - Municipality Cerklje

The energy retrofit of the boiler room at Primary School Cerklje to burn wood biomass took place in summer 2012.

The new boilers produce heat from wood-chips and heat buildings at Primary School Cerklje, the Music School, Museum Cerklje and both buildings of Kindergarten Cerklje. The same boiler room also provides supplemental heating for sanitary hot water at the Multipurpose Centre at Cerklje.

In summer months of 2014 and 2015, at the biomass boiler room and the backup fuel-oil boiler room at the museum, **small investment measures** were implemented in order to optimize the operation and remote control of the heating system.

Given that the same boiler room heats all five buildings, the heat consumption in MWh has not decreased significantly, but due to the replacement of the energy source, there are financial savings of €38,816 in total, and CO₂ emissions have been decreased by 357 tonnes.

The investment in the boiler room amounts to €428,608 excluding VAT, with the Swiss Contribution grant contributing 60%, and Municipality Cerklje contributing 40% and the amount for VAT payments.

After additional funds were obtained, additional investments were placed in Cerklje during 2015: in Primary School Cerklje, **radiatorji were replaced and thermostatic valves were installed**, in the building of the prefabricated kindergarten

windows were replaced and a remote control system was installed that enables the fuel-oil boiler room to function as a backup heat source for the Multipurpose Center Cerklje.

Additional investments totalled €102,938 excluding VAT, with the Swiss Contribution grant amounting to €87,497, and Municipality Cerklje contributing €15,441 and the value of the VAT payments.

The municipality participated in the educational program and the management of the project with a contribution of €59,459.

As part of the project's educational program, Primary School Cerklje, after a successful renovation of the boiler room, included RES and RUE themes into their educational program. The school also trained **promoters of renewable energy sources** to implement themes using a special didactic tool – the model house, to implement RES and RUE interest circles and science days on various educational topics from these areas of study. In the Cerklje Energy Eco Park, there is also a classroom in nature, the **ECO House of Renewable Energy Sources**.

The municipality, along with organizations, where the municipality acts as the founder, were also involved in the activities to raise awareness with public employees and citizens, they organized workshops on the use of renewable energy, energy efficiency, together with information on the available sources of co-financing for such endeavours.



Osnovna šola Šmarje pri Kopru - Mestna Občina Koper



Prenova kotlovnice v OŠ Šmarje pri Kopru na ogrevanje na lesno biomaso je potekala poleti 2012. Poleti leta 2014 so bili v kotlovnici izvedeni še **manjši investicijski ukrepi** za optimizacijo delovanja in daljinski nadzor ogrevalnega sistema. Prenovljena je bila tudi streha zalogovnika za sekance. Stavba šolske telovadnice je bila poleti 2014 **energetsko sanirana**: izolirana je bila fasada, zamenjano je bilo stavbno pohištvo in izolirana streha, kar dodatno prispeva k učinkoviti rabi energije v objektu šole.

Poraba toplote se je v OŠ Šmarje zmanjšala za 40 %, tako skupni finančni prihranek treh kurilnih sezon znaša 25.688 EUR, emisije CO₂ pa so se zaradi prenove zmanjšale za 188 ton.

Investicija za obe šoli v koprski občini skupaj je znašala 615.320 EUR brez DDV, od tega donacija Švicarskega prispevka 447.777 EUR, mestna občina pa je prispevala 167.543 EUR in vrednost DDV. Občina je prispevala še 69.462 EUR za izobraževalni program in vodenje projekta.

Koprske šole so se aktivno vključile v izobraževalni program OVE in URE in tako v učni program vključujejo vsebine o obnovljivih virih in učinkoviti rabi energije. Občina in organizacije, katerih ustanoviteljica je občina, so se tudi vključile v aktivnosti ozaveščanja javnih uslužbencev in občanov. Zanje so bile organizirane delavnice o uporabi obnovljivih virov energije in učinkoviti rabi energije, skupaj z informacijami o možnih sofinanciranjih.



Primary School Šmarje pri Kopru - Municipality Koper

The energy retrofit of the boiler room at Primary School Šmarje pri Kopru to burn wood biomass took place in summer 2012. During the summer of 2014, a number of **small investment measures** were undertaken in the boiler room in order to optimize the operation and remote control of the heating system. There was also a renewal of the roof over the storage area for wood chips.

In summer 2014, the building of the school gymnasium also had an **energy retrofit**: the facade was insulated, the doors and windows were replaced and the roof was insulated, all of which further contributes to the efficient use of energy in the school building.

Heat consumption in Primary School Šmarje was reduced by 40% and the total financial savings during three heating seasons amounted to €25,688, as a result of renovations, CO₂ emissions were reduced by 188 tonnes.

The investment at both schools in Municipality Koper, amounted to €615,320 excluding VAT, grant the Swiss Contribution grant amounted to €447,777, while the municipality contributed €167,543, as well as the value of VAT payments.

The municipality also contributed €69,462 towards the education program and for the management of the project.

Schools in Koper are actively involved in the project's RES and RUE educational program, and have incorporated contents on renewables and energy efficiency into their teaching schedules.

The municipality, along with organizations, where the municipality acts as the founder, were also involved in the activities to raise awareness with public employees and citizens, they organized workshops on the use of renewable energy, energy efficiency, together with information on the available sources of co-financing for such endeavours.



Osnovna šola dr. Aleš Bebler – Primož, Hrvatini - Mestna občina Koper



Prenova kotlovnice OŠ Hrvatini na ogrevanje na lesno biomaso je potekala poleti 2012. Poleti leta 2014 so bili v kotlovnici izvedeni še **manjši investicijski ukrepi** za optimizacijo delovanja in daljinski nadzor ogrevalnega sistema. Poleti 2015 je bila **energetsko sanirana** stavba šolske telovadnice, izolirana je bila fasada, zamenjano je bilo stavbno pohištvo in izolirana streha, kar dodatno prispeva k učinkoviti rabi energije v objektu šole.

Poraba toplote se je v OŠ Hrvatini zmanjšala za 50 %, tako skupni finančni prihranek treh kurilnih sezon znaša 84.062 EUR, emisije CO₂ pa so se zaradi prenove zmanjšale za 362 ton.

Mestna občina Koper posveča veliko skrb razvoju otrok, tudi tako, da skrbi za celoten izobraževalni sistem, predvsem za področje predšolske in osnovnošolske vzgoje. Znatna sredstva vlagamo v sofinanciranje nadstandardnih programov ter v zagotavljanje

kakovostnih in nadstandardnih prostorskih pogojev. Zato smo se z veseljem vključili v projekt »Obnovljivi viri v primorskih občinah«. Pridobivanje sredstev za investicije in izvedba investicij nista bila enostavna, smo pa s skupnimi močmi, sodelovanjem, prilagodljivostjo in predvsem s ciljno usmerjenostjo uspeli izvesti obnovo dveh kurilnic, ki sedaj kot energent uporabljata pelete. Energetsko smo sanirali tudi telovadnici in postavili brisoleje na južne stene objektov. Vse to s ciljem nižje porabe energije in manjše obremenitve okolja. Ne smemo pa pozabiti najpomembnejšega, da smo preko osveščanja pri otrocih vzpodbudili skrb in zavedanje, da so energetski viri omejeni, da je primerneje uporabljati obnovljive vire energije ter da moramo z njimi skrbno ravnati. Hvala ekipi Golee za odlično sodelovanje.

Timotej Pirjavec,
vodja Urada za družbene dejavnosti in razvoj



Primary School dr. Aleš Bebler – Primož, Hrvatini - Municipality Koper

The energy retrofit of the boiler room at Primary School Hrvatini to burn wood biomass took place in summer 2012. During the summer of 2014, a number of **small investment** measures were undertaken in the boiler room in order to optimize the operation and remote control of the heating system. In summer 2015, the school gym building had an **energy retrofit**, the façade was insulated, doors and windows were replaced and the roof was insulated, which further contributed towards the energy efficiency of the school building.

Heat consumption in Primary School Hrvatini was reduced by 50% and the total financial savings during three heating season amounted to €84,062, as a result of renovations, CO₂ emissions were reduced by 362 tonnes.

Municipality Koper pays meticulous attention to the development of children, in particular by taking care of the education system, especially in the field of pre-school and primary education. We invest significant resources in co-fi-

nancing higher than standard programs and the provision of high quality and superior study environment. Therefore, we are pleased to participate in project »Renewable Energy Sources in Primorska Municipalities.« Obtaining funding for investments and making the investments themselves, has not been easy. Therefore, by working together, in co-operation, with flexibility and especially by targeting goals, we have managed to carry out the energy retrofit of two boiler rooms, which now use wood pellets as an energy source. There was also an energy retrofit of the gyms, where sun-breakers were installed on the south wall of buildings. All this was implemented with the goal of reducing energy consumption and lowering environmental burdens. We must not forget the most important facet, which is that by raising awareness in children, concern was stimulated and a realization how energy resources are limited, that it is preferable to use renewable energy sources and that we must deal with them carefully. Thanks to the GOLEA team for the excellent cooperation.

Timotej Pirjavec,
Head of Social Action and Development Department



Osnovne šole Sečovelje - Občina Piran



Prenova kotlovnice v šoli Vincenzo e Diego de Castro Sečovelje na ogrevanje na lesno biomaso je potekala poleti 2012, leta 2014 pa so bili v kotlovnici izvedeni **še manjši investicijski ukrepi** za optimizacijo delovanja in daljinski nadzor ogrevalnega sistema. Kotlovnica ogreva slovensko in italijansko šolo, oba vrtca in športno dvorano.

Poleti 2014 je bil **energetsko saniran** severni trakt stavbe šole Vincenzo e Diego de Castro v Sečovljah: izolirani sta bili fasada in streha, zamenjano je bilo tudi stavbno pohištvo.

Celotna investicija v piranski občini je skupaj znašala 437.637 EUR brez DDV, od tega donacija Švicarskega prispevka 297.894 EUR, občina pa je prispevala 139.743 EUR in vrednost DDV. Občina je prispevala še 49.802 EUR za izobraževalni program in vodenje projekta.

V vseh objektih se je poraba toplote zmanjšala, tako skupni finančni prihranek treh kurilnih sezon znaša 31.451 EUR, emisije CO₂ pa so se zaradi prenove zmanjšale za 304 ton.



Primary Schools Sečovelje - Municipality Piran

The energy retrofit of the boiler room at Primary School Vincenzo e Diego de Castro Sečovelje to burn wood biomass took place in summer 2012. During the summer of 2014, a number of **small investment measures** were undertaken in the boiler room in order to optimize the operation and remote control of the heating system. The boiler room now heats the Slovene and the Italians schools, both kindergartens and the sports hall.

In summer 2014, the north wing of the school building at Primary School Vincenzo e Diego de Castro Sečovelje had an **energy retrofit** that included the insulation of the façade and the roof, as well as a replacement of doors and windows.

Investment in Municipality Piran amounted to €437,637 excluding VAT, the Swiss Contribution grant amounted to €297,894. The municipality contributed €139,743 and the value of the VAT payments. The municipality has also contributed €49,802 towards the education program and for the management of the project.

In all facilities, heat consumption was reduced and the total financial savings for three heating season amounted to €31,451. As a result of the renovation, CO₂ emissions were reduced by 304 tonnes.



Podružnična Osnovna šola Sveti Peter Osnovna šola Sečovlje - Občina Piran

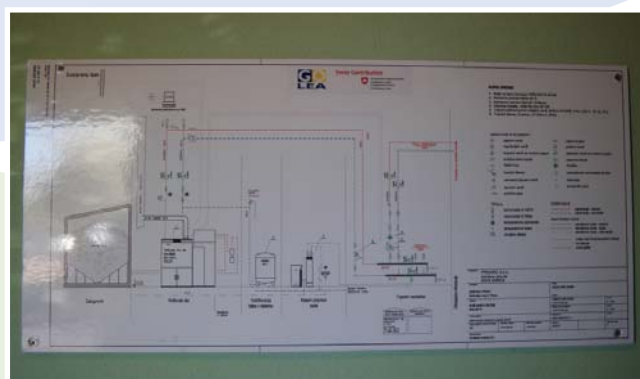


Prenova kotlovnice v šoli Sv. Peter na ogrevanje na lesno biomaso je potekala poleti 2012. Leta 2014 so bili v kotlovnici izvedeni še **manjši investicijski ukrepi** za optimizacijo delovanja in daljinski nadzor ogrevalnega sistema. Poleti 2015 je bilo **izolirano podstrežje in prenovljena razsvetljava** na stopnišču šole. Vse to dodatno prispeva k učinkoviti rabi energije v objektu šole in vrtca.

Nekatere piranske šole so se aktivno vključile v izobraževalni program OVE in URE in tako v učni program

vključujejo vsebine o obnovljivih virih in učinkoviti rabi energije.

Občina in organizacije, katerih ustanoviteljica je občina, so se tudi vključile v aktivnosti ozaveščanja javnih uslužbencev in občanov. Zanje so bile organizirane delavnice o uporabi obnovljivih virov energije in učinkoviti rabi energije, skupaj z informacijami o možnih sofinanciranjih.



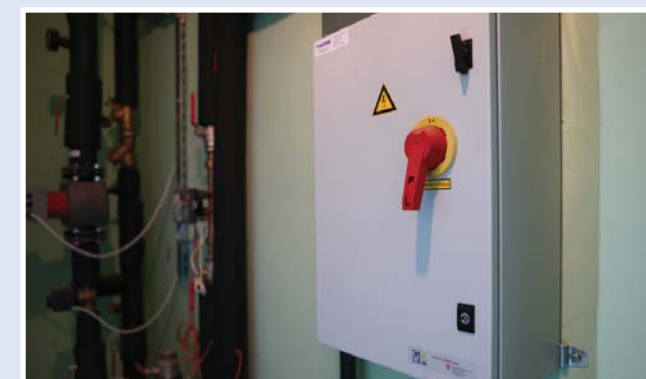
Branch Primary School Sveti Peter Primary School Sečovlje - Municipality Piran

The energy retrofit of the boiler room at Primary School Sv. Peter to burn wood biomass took place in summer 2012. During the summer of 2014, a number of **small investment measures** were undertaken in the boiler room in order to optimize the operation and remote control of the heating system. In summer 2015, the **attic was insulated and the lighting** in the school stairwell was renovated. All this adds to the energy efficiency of the school and kindergarten buildings.

Individual schools in Piran are actively involved in the project's RES and RES educational program and teach-

ing contents include subjects on renewables and energy efficiency.

The municipality, along with organizations, where the municipality acts as the founder, were also involved in the activities to raise awareness with public employees and citizens, they organized workshops on the use of renewable energy, energy efficiency, together with information on the available sources of co-financing for such endeavours.



Osnovna šola Košana - Občina Pivka



Prenova kotlovnice v Osnovni šoli Košana na ogrevanje na lesno biomaso je potekala poleti 2012. Poleti leta 2014 so bili v kotlovnici izvedeni še **manjši investicijski ukrepi** za optimizacijo delovanja in daljinski nadzor ogrevalnega sistema. Poleti 2015 je bila v šolski telovadnici **prenovljena tudi razsvetljava**, kar dodatno prispeva k učinkoviti rabi energije v objektih šole.

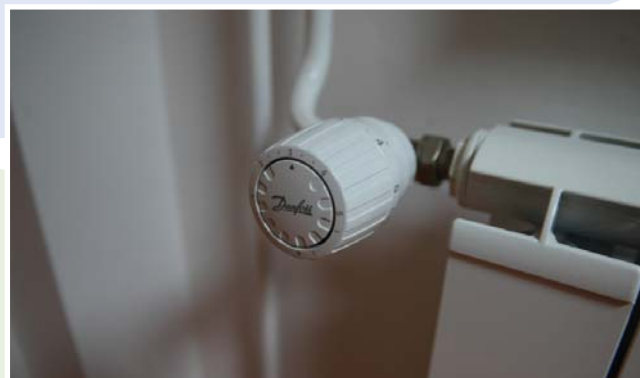
Poraba toplote se je v OŠ Košana zmanjšala, tako skupni finančni prihranek treh kurilnih sezon znaša 4.111 EUR, emisije CO₂ pa so se zaradi prenove zmanjšale za 124 ton.

Investicija v Občini Pivka je skupaj znašala 170.475 EUR brez DDV, od tega donacija Švicarskega prispevka 106.203 EUR, občina pa je prispevala 64.273 EUR in vrednost DDV.

Občina je tudi prispevala 19.065 EUR za izobraževalni program in vodenje projekta.

Pivške šole so se aktivno vključile v izobraževalni program OVE in URE in tako še naprej v učni program vključujejo vsebine o obnovljivih virih in učinkoviti rabi energije. Skupina učencev iz OŠ Košana je junija 2015 tudi sodelovala na zaključni prireditvi projekta v Novi Gorici. V **gledališki predstavi »Don Kihot – iz preteklosti v prihodnost«** so učenci odigrali zadnji del trilogije z zgodbo »V kraljestvu Smrgodol«.

Občina in organizacije, katerih ustanoviteljica je občina, so se tudi vključile v aktivnosti ozaveščanja javnih uslužbencev in občanov. Zanje so bile organizirane delavnice o uporabi obnovljivih virov energije in učinkoviti rabi energije, skupaj z informacijami o možnih sofinanciranjih.



Primary School Košana - Municipality Pivka

The energy retrofit of the boiler room at Primary School Košana to burn wood biomass took place in summer 2012. During the summer of 2014, a number of **small investment measures** were undertaken in the boiler room in order to optimize the operation and remote control of the heating system. There was also a renewal of the roof over the storage area for wood chips.

In summer 2015, the **lighting was also renovated** in the school gym. This also contributes to the energy efficiency of the schools buildings.

Heat consumption at Primary School Košana was reduced and the total financial savings during three heating season amount to €4,111. As a result of renovation, CO₂ emissions are reduced by 124 tonnes.

Investment in Municipality Pivka amounts to €170,475 euros excluding VAT, the Swiss Contribution grant amounted to €106,203. The municipality contributed €64,273 and the value of VAT payments.

The municipality has also contributed €19,065 towards the education program and for the management of the project.

Pivka schools are actively involved in the project's RES and RUE educational program and continue to include into the teaching program subjects on renewables and energy efficiency. In June 2015, a group of pupils from Primary School Košana, also participated in the closing ceremony of the project in Nova Gorica. In a **theatre show »Don Quixote - From Past to Future«** students played the last part of the trilogy with a story entitled »In the Kingdom of Smrgodol.«

The municipality, along with organizations, where the municipality acts as the founder, were also involved in the activities to raise awareness with public employees and citizens, they organized workshops on the use of renewable energy, energy efficiency, together with information on the available sources of co-financing for such endeavours.



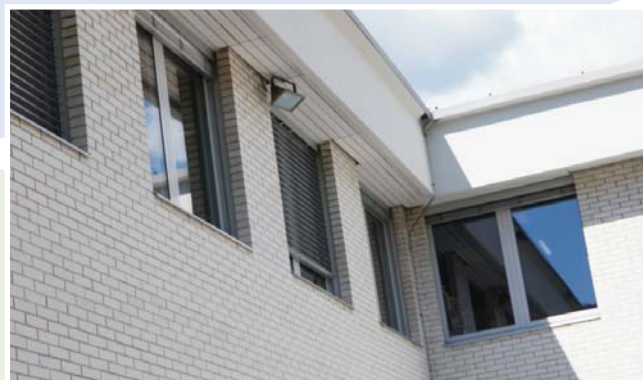
Knjižnica Cirila Kosmača Tolmin - Občina Tolmin



Prenova kotlovnice v Knjižnici Cirila Kosmača na ogrevanje na lesno biomaso je potekala poleti 2012. Poleti leta 2014 so bili v kotlovnici izvedeni še **manjši investicijski ukrepi** za optimizacijo delovanja in daljinski nadzor ogrevalnega sistema. Poleti 2014 je bila stavba knjižnice tudi **energetsko sanirana**: zamenjano je bilo stavbno pohištvo in izolirana streha, kar dodatno prispeva k učinkoviti rabi energije v objektu tolminske knjižnice.

Poraba toplote se je zmanjšala za tretjino, tako skupni finančni prihranek treh kurilnih sezon znaša 9.986 EUR, emisije CO₂ pa so se zaradi prenove zmanjšale za 83 ton.

Investicija v Tolminu je skupaj znašala 171.122 EUR brez DDV, od tega donacija Švicarskega prispevka 128.919 EUR, Občina Tolmin pa je prispevala 42.204 EUR in vrednost DDV. Občina je tudi prispevala 20.436 EUR za izobraževalni program in vodenje projekta.



Tolminska osnovna šola in gimnazija sta se aktivno vključili v izobraževalni program OVE in URE in tako šoli v učni program vključujeta vsebine o obnovljivih virih in učinkoviti rabi energije. Občina in organizacije, katerih ustanoviteljica je občina, so se tudi vključile v aktivnosti ozaveščanja javnih uslužbencev in občanov. Zanje so bile organizirane delavnice o uporabi obnovljivih virov energije in učinkoviti rabi energije, skupaj z informacijami o možnih sofinanciranjih.

Knjižnica Cirila Kosmača Tolmin je bila ob odprtju leta 1980 vzorčni primer knjižnične arhitekture na Slovenskem. Po dobrih treh desetletjih pa je potrebovala temeljito obnovo. V okviru projekta je leta 2012 dobila novo kotlovnico na lesno biomaso, leta 2014 pa še novo streho in okna. Z ostalimi investicijami Občine Tolmin v stavbo knjižnice je danes tolminska knjižnica primer energetsko učinkovite javne stavbe.

Na podlagi podatkov prvih kurilnih sezon ugotavljamo, da se po izvedenih vlaganjih kažejo znatni prihranki tako pri porabi toplotne kot tudi električne energije. Ti prihranki imajo za posledico manjše obratovalne stroške in tako so se zmanjšale tudi obremenitve proračuna. Poleg dobrega finančnega učinka je pomembno tudi dobro počutje obiskovalcev knjižnice in zaposlenih, saj se je dvignila kvaliteta bivanja v prostorih knjižnice.

Uroš Brežan, župan, in Jožica Štendler, direktorica knjižnice

Ciril Kosmač Library Tolmin - Municipality Tolmin

The energy retrofit of the boiler room at Ciril Kosmač Library to burn wood biomass took place in summer 2012. During the summer of 2014, a number of **small investment measures** were undertaken in the boiler room in order to optimize the operation and remote control of the heating system. In the summer of 2014, the library building also underwent an **energy retrofit**: the windows were replaced and the roof insulated, which further contributes to the efficient use of energy in the Tolmin library building.

Heat consumption was reduced by a third and the total financial savings for three heating season is €9986. As a result of renovation, CO₂ emissions have been reduced by 83 tonnes.

Investment in Tolmin amounted to €171,122 excluding VAT, the Swiss contribution grant amounted to €128,919, with Tolmin Municipality contributing €42,204 and the value of the VAT payments. The municipality also contributed €20,436 towards the training program and for the management of the project.

The primary and secondary schools in Tolmin are both actively involved in the project's RES and RUE educational program, and have incorporated contents on renewables and energy efficiency into their teaching schedules.

The municipality, along with organizations, where the municipality acts as the founder, were also involved in the activities to raise awareness with public employees and citizens, they organized workshops on the use of renewable energy, energy efficiency, together with information on the available sources of co-financing for such endeavours.

The Ciril Kosmač Library Tolmin was, at the time it was opened in 1980, a model example of library architecture in Slovenia. After more than three decades, it needed a thorough reconstruction. As part of the project, in 2012 the library received a new boiler, burning biomass, in 2014 a new roof and windows. With other investments in the library building, on the part of Municipality Tolmin, the library has become today a model energy-efficient public building.

Based on the data of the first heating season, we notice that, after the completion of investment, there are significant savings both in heat as well as electricity consumption. These savings result in lower operating costs and also reduce the burden on the budget. In addition to a sound financial impact, this is important to the wellbeing of library visitors and employees, because it has raised the quality and comfort of dwelling in the library.

Uroš Brežan, Mayor and Jožica Štendler, Library Director



Podružnična šola Kojsko

Osnovna šola Dobrovo - Občina Brda



Prenova kotlovnice Kojskem na ogrevanje na lesno biomaso je potekala poleti 2012. Poleti leta 2014 so bili v kotlovnici izvedeni še **manjši investicijski ukrepi** za optimizacijo delovanja in daljinski nadzor ogrevalnega sistema. Poleti 2014 je bil **energetsko saniran** del stavbe šole oz. vrtca: izolirana je bila fasada, zamenjano je bilo stavbno pohištvo in izolirana streha, kar dodatno prispeva k učinkoviti rabi energije.

Poraba toplote se je v OŠ Kojsko zmanjšala za 30 %, tako skupni finančni prihranek treh kurilnih sezon znaša 3.787 EUR, emisije CO₂ pa so se zaradi prenove zmanjšale za 91 ton.



Investicija v Občini Brda je skupaj znašala 161.941 EUR brez DDV, od tega donacija Švicarskega prispevka 119.780 EUR, občina pa je prispevala 42.161 EUR in vrednost DDV. Občina je prispevala še 22.077 EUR za izobraževalni program in vodenje projekta.

Briška šola se je aktivno vključila v OVE in URE izobraževalni program projekta in tako v učni program že četrto šolsko leto vključuje vsebine o obnovljivih virih in učinkoviti rabi energije. Skupina učencev iz OŠ Dobrovo je junija 2014 tudi sodelovala **v predstavi »Odiseja malo drugače«** na dnevu OVE in URE v Šempetru pri Gorici. Občina in organizacije, katerih ustanoviteljica je občina, so se tudi vključile v aktivnosti ozaveščanja javnih uslužbencev in občanov. Zanje so bile organizirane delavnice o uporabi obnovljivih virov energije in učinkoviti rabi energije, skupaj z informacijami o možnih sofinanciranjih.

Branch Primary School Kojsko

Primary School Dobrovo - Municipality Brda

The energy retrofit of the boiler room in Kojsko to burn wood biomass took place in summer 2012. During the summer of 2014, a number of **small investment measures** were undertaken in the boiler room in order to optimize the operation and remote control of the heating system. In the summer of 2014, a part of the school-kindergarten building underwent an **energy retrofit**: the façade was insulated, windows and doors were replaced and the roof insulated, which further contributes towards energy efficiency of the building.

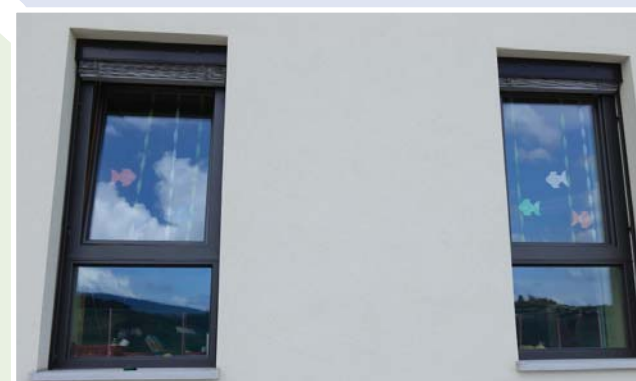
Heat consumption in Primary School Kojsko was reduced by 30% and the total financial savings through three heating season amounts to €3,787. As a result of renovation, CO₂ emissions were reduced by 91 tonnes.

Investment in Municipality Brda amounted to €161,941 excluding VAT, the Swiss Contribution grant amounted to €119,780, with the municipality contributing €42,161

and the value of the VAT payments. The municipality also contributed €22,077 towards the education program and for the management of the project.

The Brda school is actively involved in the project's RES and RUE educational program and for already four years, continues to include into the teaching program subjects on renewables and energy efficiency. In June 2014, a group of pupils from Primary School Dobrovo, also participated in a **theatre show entitled »Odyssey With a Difference«** at the RUE and RES Day in Šempeter pri Gorici.

The municipality, along with organizations, where the municipality acts as the founder, were also involved in the activities to raise awareness with public employees and citizens, they organized workshops on the use of renewable energy, energy efficiency, together with information on the available sources of co-financing for such endeavours.



Podružnična šola Trnovo OŠ Solkan - Mestna občina Nova Gorica



Energetska sanacija stavbe in prenova kotlovnice solkanske podružnične šole in vrtca v Trnovem je potekala poleti 2014. V dveh kurilnih sezonah je bila poraba toplote za polovico manjša in prihranek znaša 6.420 EUR, emisije CO₂ pa so se zmanjšale za 21,3 tone.

V izobraževalni program projekta so se vključile tudi novogoriške šole in vrtci, ki tako z otroki delajo na področju obnovljivih virov in učinkovite rabe energije. Tudi občina se je vključila v aktivnosti intenzivnega ozaveščanja občanov. Tako v avli novogoriške občinske stavbe deluje **kotiček OVE in URE**, kjer občani, podjetniki in predstavniki drugih organizacij dobijo informacije o uporabi obnovljivih virov energije in možnih sofinanciranjih.

Investicija v Trnovem je znašala 151.131 EUR brez DDV, od tega donacija Švicarskega prispevka 102.875 EUR, občina pa je prispevala 48.256 EUR in vrednost DDV. Občina je prispevala še 17.603 EUR za izobraževalni program in vodenje projekta.

Z odprtjem prenovljenih ali novih prostorov za naše najmlajše dvigujemo kvaliteto bivanja in pogojev za delo in ustvarjanje. Otroci so radovedni in radoživi, sposobni osvajanja novih znanj, le prave priložnosti in pogoje jim je treba omogočiti. V novogoriški mestni upravi smo v zadnjih letih investicijam na področju predšolske in šolske vzgoje name-

nili posebno skrb in nanizali kar nekaj novih in tudi prenovljenih objektov, porazdeljenih na tista področja v mestni občini, kjer so bile potrebe največje. Energetsko obnovljena šola in vrtec sta prijazna otrokom in celotnemu osebju ter v zadovoljstvo prebivalcem Trnovega. Ob izvedeni investiciji v okviru projekta »Obnovljivi viri energije v primorskih občinah« smo ponovno dokazali, da je v povezovanju in skupnem delu posebna moč, kar nam bo vsem skupaj vodilo tudi v prihodnosti.

Matej Arčon, župan



Branch Primary School Trnovo Primary School Solkan - Municipality Nova Gorica

The energy retrofit of the building and the boiler room at Branch School and Kindergarten Trnovo of the Solkan Primary School took place in summer 2014. In two heating seasons, heat consumption was halved with savings amounting to €6,420 and CO₂ emissions reduced by 21.3 tonnes.

The Nova Gorica schools and kindergartens participate in the project's educational program, so that children do work in the field of renewable energy sources and energy efficiency.

The municipality has also engaged in intensive activities to raise awareness of citizens, setting up in the lobby of the Nova Gorica municipal building a **RES and RUE corner** where citizens, business people and representatives of other organizations can get up-to-date information on the use of renewable energy sources and the possibility of obtaining co-financing.

Investment in Trnovo amounts to €151,131 excluding VAT, the Swiss Contribution grant amounts to €102,875, with the municipality contributing €48,256 and the value of the VAT payments.

The municipality has also contributed €17,603 towards the education program and for the management of the project.

With the opening of renovated or newly built premises for our youngest, we raise the quality of dwelling and create conditions for effective and creative work. Children are curious and cheerful, capable of acquiring new knowledge; they only need the right opportunities and conditions to be empowered. In Nova Gorica municipal government, we have in recent years paid special attention to investment in pre-school and school education, with a series of new and renovated buildings, located in areas of the municipality where the needs were the greatest.

The energy renovated school and kindergarten are both comfortable for children and staff alike, to the satisfaction of the inhabitants of Trnovo. Through an investment within project »Renewable Energy Sources in Primorska Municipalities«, we have once again demonstrated that there is much power in cooperation and joint work, which will remain a guideline for all of us into the future.

Matej Arčon, Mayor



Osnovna šola Dragotina Ketteja Občina Ilirska Bistrica



Prenova kotlovnice OŠ Dragotina Ketteja na ogrevanje na lesno biomaso je potekala poleti 2012. Poleti leta 2015 so bili izvedeni še **manjši investicijski ukrepi** za optimizacijo delovanja in daljinski nadzor ogrevalnega sistema.

Poraba toplote se je v šoli zmanjšala za 55 %, tako skupni finančni prihranek treh kurilnih sezon znaša 29.500 EUR, emisije CO₂ pa so se zaradi prenove zmanjšale za 189 ton.

Investicija v Občini Ilirska Bistrica je skupaj znašala 269.093 EUR brez DDV, od tega donacija Švicarskega prispevka 167.601 EUR, občina pa je prispevala 101.492 EUR in vrednost DDV. Občina je prispevala še 31.442 EUR za izobraževalni program in vodenje projekta.

V projekt smo se vključili leta 2012, ko smo začeli z ozaveščanjem o obnovljivih virih energije v našem okolju in okrog nas ter o učinkoviti rabi energije v okviru krožkov in tehniških dni na šoli. Teoretična ciljna tematska znanja, skupaj s praktičnimi dejavnostmi in eksperimenti, so učenci podkrepili s spoznanji, vpogledom in primerjavami, ko sta pred njihovimi oz. našimi očmi nastajala nova kurilnica v šoli in nov energetski ovoj šole. Vprašanja učencev, ki so deževala na račun obnove kurilnice, so bila posledica vidnega gradbišča ob šoli, zamenjave obstoječih peči na fosilna goriva in velikih kotlov. Obnova šolskega sistema ogrevanja na pelete, na obnovljivi vir, je bil začetek razmisleka, kako se

lahko posameznik vpne v ta silni globalni stroj delovanja varovanja okolja in se zave sebe in pomena vlakna v tkani. Vsak posameznik šteje, tudi jaz, tudi mi, v šoli in doma. Šola je ob podpori evropskih sredstev pridobila tudi nov energetski plašč stavbe in skupaj z novo kotlovnico se je zmanjšala poraba toplote. Pozitivni, prijetni občutki, ki nas prevevajo ob bivanju in delu v obnovljeni šoli, ob bistveno nižjih stroških še dodatno dosežejo končni namen.

Ester Juriševič, ravnateljica



Primary School Dragotin Kette Municipality Ilirska Bistrica

The energy retrofit of the boiler room in Dragotin Kette to burn wood biomass took place in summer 2012. During the summer of 2015, a number of **small investment measures** were undertaken in the boiler room in order to optimize the operation and remote control of the heating system.

Heat consumption in the school was reduced by 55% and the financial savings through three heating season amounted to €29,500. As a result of renovation, CO₂ emissions dropped by 189 tonnes.

Investment in Municipality Ilirska Bistrica amounted to €269,093 excluding VAT, the Swiss Contribution grant amounted to €167,601 with the municipality contributing €101,492 and the value of the VAT payments. The municipality also contributed €31,442 towards the education program and for the management of the project.

We joined the project in 2012, when we started with raising awareness regarding renewable energy in our community and in neighbouring areas, and with efficient energy use within interest circles and science days at the school. Theoretical thematic knowledge targets together with practical

activities and experiments, was supplemented by students with their own comprehension, insights and comparisons, when in front of their own eyes, and ours, a new boiler room came to be in the school, along with a new energy envelope for the building. Pupils' questions, which rained down us during the reconstruction of the boiler room, were the result of a highly visible construction site at the school, replacement of existing furnace fired on fossil fuels and the large boilers. The energy retrofit of the school heating system, to fire wood pellets, heating with a renewable resource, initiated the beginning of thinking about how an individual can become part in this powerful global operation to protect the environment and become aware of oneself and the importance of becoming like a fibre in this fabric. Every individual counts, even I, all of us, in school as well as at home.

The school, with the support of European funds, also acquired a new energy envelope for the building, and together with the new boiler room this has reduced overall heat consumption. Positive and pleasant feelings that permeate our dwelling and work in the renovated school, furthermore with significantly lower costs, achieve the final objective.

Ester Juriševič, Headmistress



Osnovna šola Toneta Tomšiča Knežak

Občina Ilirska Bistrica



Prenova kotlovnice OŠ Knežak na ogrevanje na lesno biomaso je potekala poleti 2012. Poleti leta 2015 so bili izvedeni še **manjši investicijski ukrepi** za optimizacijo delovanja in daljinski nadzor ogrevalnega sistema.

Poraba toplote se je v OŠ Knežak zmanjšala za 60 %, tako skupni finančni prihranek treh kurilnih sezon znaša 19.657 EUR, emisije CO₂ pa so se zaradi prenove zmanjšale za 115 ton.

Bistriške šole so se aktivno vključile v izobraževalni program OVE in URE in tako šole v učni program vključujejo vsebine o obnovljivih virih in učinkoviti rabi energije. Občina in organizacije, katerih ustanoviteljica je občina, so se tudi vključile v aktivnosti ozaveščanja javnih uslužbencev in občanov. Zanje so bile organizirane delavnice o uporabi obnovljivih virov energije in učinkoviti rabi energije, skupaj z informacijami o možnih sofinanciranjih.



Primary School Tone Tomšič Knežak

Municipality Ilirska Bistrica

The energy retrofit of the boiler room in Primary School Knežak to burn wood biomass took place in summer 2012. During the summer of 2015, a number of **small investment measures** were undertaken in the boiler room in order to optimize the operation and remote control of the heating system.

Heat consumption in Primary School Knežak was reduced by 60% and the financial savings during three heating seasons amounted to €19,657. As a result of renovation, CO₂ emissions were reduced by 115 tonnes.

Schools in Bistrica are actively involved in the project's RES and RUE educational program, and have incorporated contents on renewables and energy efficiency into their teaching schedules.

The municipality, along with organizations, where the municipality acts as the founder, were also involved in the activities to raise awareness with public employees and citizens, they organized workshops on the use of renewable energy, energy efficiency, together with information on the available sources of co-financing for such endeavours.



Podružnična šola Vrtojba OŠ Ivana Roba Šempeter Pri Gorici Občina Šempeter Vrtojba



Poleti 2014 je bila **energetsko sanirana** stavba šole v Vrtojbi: izolirana je bila fasada, zamenjano je bilo stavbno pohištvo in izolirana streha. Poraba toplote se je v OŠ Vrtojba zmanjšala za 33 %, tako skupni finančni prihranek treh kurilnih sezon znaša 8.409 EUR, emisije CO₂ pa so se zaradi prenove zmanjšale za 18 ton.

Investicija v občini je znašala 106.312 EUR brez DDV, od tega donacija Švicarskega prispevka 90.376 EUR, občina pa je prispevala 15.949 EUR in vrednost DDV.

Šola in njene podružnice iz Občine Šempeter - Vrtojba so se aktivno vključile v izobraževalni program OVE in URE in tako v učni program intenzivno vključujejo vsebine o obnovljivih virih in učinkoviti rabi energije. Skupina učencev iz OŠ Vrtojba je junija 2015 tudi sodelovala na zaključni prireditvi projekta v Novi Gorici. V **gledališki predstavi »Don Kihot – iz preteklosti v prihodnost«** so učenci odigrali prvi del trilogije z zgodbo »Don Kihot pri kraljici vetra«.



Branch Primary School Vrtojba Primary School Ivan Rob Šempeter pri Gorici Municipality Šempeter-Vrtojba

In the summer of 2014 there was an **energy retrofit** of the building at the school in **Vrtojba**: the **facade** was insulated, doors and windows were replaced and the roof was insulated.

Heat consumption in Primary School Vrtojba was reduced by 33% and the financial savings during three heating seasons amounted to €8,409. As a result of the renovation, CO₂ emissions were reduced by 18 tonnes.

Investment in the municipality amounts to €106,312 excluding VAT, the Swiss Contribution grant amounted to €90,376, with the municipality contributing €15,949 and the value of the VAT payments.

The school and its affiliated branch schools within Municipality Šempeter Vrtojba were actively involved in project's RES and RES educational program and included content on renewables and energy efficiency into the learning process. A group of students from Primary School Vrtojba also participated in the June 2015 closing ceremony of the project in Nova Gorica. At the event, in the **theatre show »Don Quixote - from past to future«** they played the first part of the trilogy, with a story entitled »Don Quixote at the Queen of the Wind.«



Informacijsko središče Dom Trenta

Triglavski narodni park



Prenova kotlovnice v Informacijskem središču Dom Trenta na ogrevanje na lesno biomaso je potekala jeseni 2013, skupaj z manjšimi investicijskimi ukrepi za optimizacijo delovanja in daljinski nadzor ogrevalnega sistema.

Poraba toplote v Informacijskem središču se je zmanjšala za 22 %, tako skupni finančni prihranek dveh kurilnih sezon znaša 7.884 EUR, emisije CO₂ pa so se zaradi prenove zmanjšale za 66 ton.

Investicija je skupaj znašala 143.544 EUR brez DDV, od tega donacija Švicarskega prispevka 86.126 EUR, TNP pa je prispeval 57.418 EUR in vrednost DDV. TNP je prispeval še 16.623 EUR za izobraževalni program in vodenje projekta.

TNP se je tudi vključil v aktivnosti ozaveščanja javnih uslužbencev in zanje so bile organizirane delavnice o uporabi obnovljivih virov in učinkoviti rabi energije.

S projektom »Obnovljivi viri energije v primorskih občinah« je bila uresničena več kot desetletje stara želja po zamenjavi nesmotrnega ogrevanja s plinom (propan-butan) z ogrevanjem na biomaso. Rezultat projekta je primerno ogrevano Informacijsko središče s pomožnim objektom, z lokalno dobavljivim energentom in s polovico nižjimi stroški. Informacijsko in izobraževalno središče edinega narodnega parka v Sloveniji, ki ga letno obišče več kot 20.000 obiskovalcev, je s tem postalo uporabno tudi v zimskem času, energetsko preskrbljeno v lokalnem prostoru in tako primerno za ozaveščanje širše javnosti o pomenu obnovljivih virov energije.

Marko Pretner, vodja Informacijskega in izobraževalnega središča Dom Trenta



Info Center Trenta

Triglav National Park

The energy retrofit of the boiler room in the Info Centre at Trenta to heating using wood biomass took place in autumn 2013, together with small investment measures for optimizing the operation and remote control of the heating system.

Heat consumption in the Info Center was reduced by 22% and financial savings during two heating season amount to €7,884. As a result of renovation, CO₂ emissions were reduced by 66 tonnes.

The investment totalled €143,544 excluding VAT, the Swiss Contribution grant amounted to €86,126, with the TNP contributing €57,418 and the value of VAT payments. The TNP has also contributed €16,623 towards the education program and for the management of the project.

The TNP is also involved in activities to raise awareness of public employees; they organized workshops on the use of renewable energy sources and energy efficiency.

With project »Renewable Energy Sources in Primorska Municipalities«, a more than decade-old desire to replace misguided heating using gas (propane-butane) with a biomass heating system has finally been implemented. The result of the project is a properly heated Information Centre with its auxiliary facility, using locally available fuel, and at half the cost. The Information and Education Center at the only national park in Slovenia, which is visited annually by more than 20,000 visitors, has thus become usable in winter, energy independent within the local area, and also suitable for awareness building with the general public regarding the importance of renewable energy sources.

Marko Pretner, Head of Information and Education Center Dom Trenta



IZOBRAŽEVALNI PROGRAM OVE IN URE

V okviru projekta smo izvedli promocijske in kompleksne izobraževalne aktivnosti na temo obnovljivih virov energije in učinkovite rabe energije. Ko jih seštejemo, smo zelo veseli, da smo tako intenzivno prispevali k energetskemu opismenjevanju na Primorskem in v Sloveniji. V aktivnosti izobraževalnega programa OVE in URE je bilo skupaj vključenih 20.138 učiteljev, otrok, učencev, dijakov in javnih uslužbencev.



Izobraževanja za učitelje in vzgojitelje

Za učitelje in vzgojitelje primorskih osnovnih šol in vrtcev smo organizirali 10 izobraževanj, na katerih se je usposobilo 280 primorskih učiteljev. V letu 2011 so se izobraževanja začela z osnovnimi vsebinami, v naslednjih letih pa smo vsebine vedno bolj specializirali ter tako sestavljali široko paleto znanj udeležencev na področju obnovljivih virov energije in učinkovite rabe energije, o pomenu in vlogi energetske izkaznice, trajnostni mobilnosti in energetski pismenosti. Vsi učitelji so prejeli izobraževalno gradivo z delovnimi listi za delo učitelja v razredu, posebej pa so bili usposobljeni za uporabo didaktičnega pripomočka »Hiške obnovljivih virov energije« ter za uporabo e-gradiv OVE in URE.

Cilj izobraževalnega programa je bil usposobiti vzgojitelje, učitelje predmetne stopnje in tehničnega pouka, naravoslovja, fizike, kemije (ter drugih predmetov) na področju OVE in URE.

Ti učitelji primorskih osnovnih in srednjih šol so in bodo tudi v naslednjih letih energetsko opismenjevali, ozaveščali in izobraževali otroke, učence in dijake o pomenu in vrstah obnovljivih virov energije, o vse večji porabi energije in o možnostih zmanjšanja rabe energije za zadovoljevanje življenjskih potreb v sodobni družbi. Izobraževalne programe vzgojitelji izvajajo v vrtcih in učitelji tudi v šolah za otroke s posebnimi potrebami.



RES AND RUE EDUCATION PROGRAM

The project included promotional, as well as complex educational activities on the subject of renewable energy sources and efficient energy use. When summing up, we can only be pleased that we have so intensively contributed to the energy literacy of the Primorska region and Slovenia, as a whole. The activities of the RES and RUE Educational Program involved a total of 20,138 teachers, children, pupils, students and public employees.

Teacher Training

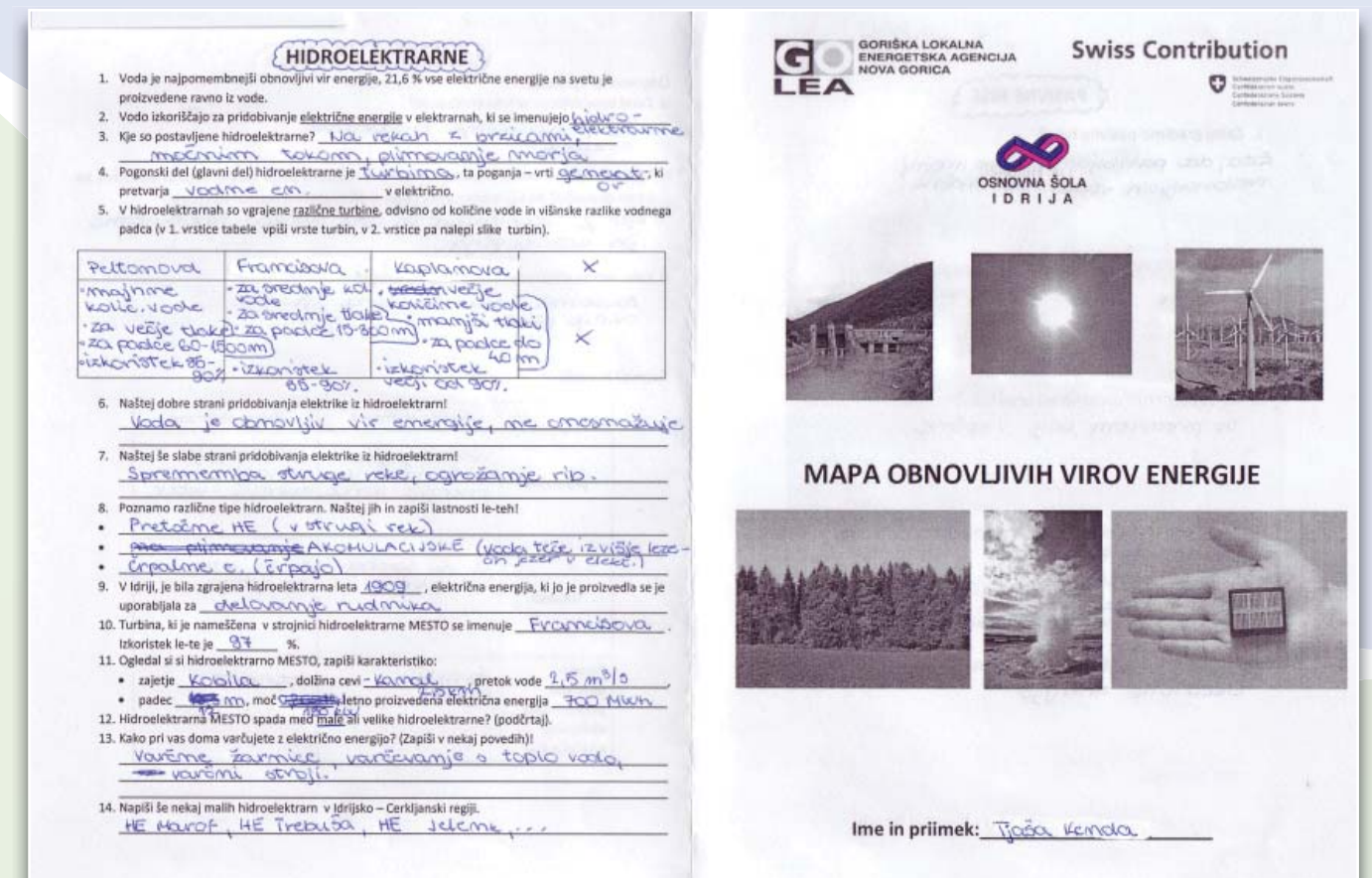
For teachers and educators at Primorska primary schools and kindergartens, 10 courses were organized and a total of 280 Primorska teachers complete the training program.

In 2011, training started out with basic contents and this was followed, in subsequent years, with increasingly specialized content, developing a wide range of skills for the participants in the field of renewable energy and energy efficiency, the importance and role of energy performance certificates, sustainable mobility and energy literacy.

All the teachers received educational materials with worksheets intended for the teacher in the classroom, and were particularly trained to use teaching aids, such as the "Model House of Renewable Energy Sources" and the use of RES and RUE e-learning contents.

The aim of the education program was to provide training for educators, teachers in specific subjects and technical instruction, such as science, physics, chemistry (and other subjects) in the field of RES and RUE.

These teachers at Primorska primary and secondary schools already work, and will continue to work in the coming years, on energy literacy, raising awareness and educating children, pupils and students about the importance and types of renewable energy, growing energy consumption and the possibilities of reducing energy consumption to meet the vital needs of modern society. The educational programs are also conducted by kindergarten educators, as well as by teachers in schools for children with special needs.



Izobraževalno gradivo z delovnimi listi za delo v razredu

Teoretično in tehnično didaktično gradivo z vsebinami OVE in URE ter navodili za uporabo modelov, vajami in meritvami je namenjeno ozaveščanju in usposabljanju učiteljev. Je njihov delovni pripomoček za pripravo vsebin krožkov in tehničnih dni, primerno pa je za uporabo pri ozaveščanju in usposabljanju učencev, kot učno gradivo ter kot pripomoček za praktično izvedbo učnih ur: delovni listi, učni listi in vaje. 250 izvodov gradiva smo razdelili učiteljem oz. vzgojiteljem, ki so se udeležili delavnic in ki izvajajo izobraževalne aktivnosti, osrednji slovenski knjižnici NUK in ključnim slovenskim knjižnicam.

RES and RUE E-learning

The e-Learning contents are designed to enhance and upgrade the content of the educational program. Contents are available at <http://egradiva.golea.si> and in this way, we promote and raise awareness about RES and RUE subjects with a wider range of children, pupils, students, adults and teaching personnel, as the materials are freely accessible via the Internet. E-learning contents are intended for use in various forms

Rubrika OVE in URE v Šolskih Razgledih

V letih 2013, 2014 in 2015 smo 55-krat objavili rubriko in tako v osrednjem slovenskem šolskem časopisu objavljali aktualne informacije o projektu in tudi vsebinske članke.



Educational materials with work-sheets for classroom work

Theoretical and technical didactic material, with RES and RUE contents including instructions for the use of models, exercises and measurements are designed to raise awareness and for training of teachers, as well as being their working tools for preparing content for interest circles and science days. It is suitable for use in awareness-raising and training of students, to be used as learning material and a tool for the practical implementation of lessons: worksheets, study sheets, exercises- A total of 250 copies of this material has been distributed to teachers / educators who have participated in workshops and are conducting educational activities, the Central Slovenian National Library (NUK) and to key libraries in Slovenia.

E-gradiva OVE in URE

E-gradiva predstavljajo dopolnitev in nadgradnjo vsebin izobraževalnega programa. Gradiva so dostopna na <http://egradiva.golea.si> in z njimi smo ozaveščanje in promocijo vsebin OVE in URE omogočili tudi širšemu krogu otrok, učencev, dijakov, odraslih in pedagoškemu kadru, saj so gradiva prosto dostopna na internetu.

E-gradiva so namenjena uporabi pri različnih oblikah izobraževanja, spodbujanju učencev k učenju na pri-

vlačnejši način, spodbujanju učiteljev k raznolikemu in pestremu načinu podajanja učne snovi ter usmerjanju učencev k samostojnemu in domačemu delu. E-gradiva nudijo sodobne oblike prikazov tematike OVE in URE, ki z digitalnimi vsebinami in interaktivnostjo omogočajo lažje dojetje vsebine.



RES and RUE Column in “Šolski Razgledi”

In the years 2013, 2014 and 2015 we were published in 55 issues within a special column in the central Slovenian school magazine. The column included news from the project, as well as subject-matter articles.

Hiška obnovljivih virov energije



Hiška je sestavljena iz kompleta učil, ki so zložljivi modeli posameznih načinov pridobivanja energije iz obnovljivih virov ter porabnikov. Omogočajo prikaz delovanja, meritve in merilna mesta, primerjave ter opazovanja. 55 hišk je bilo razdeljenih šolam in vrtcem, katerih učitelji oz. vzgojitelji so se udeležili delavnic in ki izvajajo krožke, tehnične dneve ter vsebine OVE in URE vključujejo v redni učni program.

V okviru natečaja, ki smo ga objavili v šolskem letu 2012/2013, so učenci prijavljenih šol hiške »personalizirali« in zdaj imajo te šole »svojo« hiško.

Učenci OŠ Cerkno so prevzeli vlogo »promotorjev obnovljivih virov energije« in so učencem nižjih razredov z uporabo hiške predstavili zakonitosti obnovljivih virov energije. Promotorje smo vključevali tudi ob raznih dogodkih in prireditvah. Z modelom hiške se srečajo tudi obiskovalci Energetskega eko parka OŠ Cerkno, saj je v okviru izobraževalnih vsebin tehničnih in naravoslovnih dni na razpolago modul za učence tretje triade OŠ, kjer se na delavnicah srečujejo z modeli, ki prikazujejo pridobivanje energije iz obnovljivih virov: sonce, veter, geotermalna energija, gorivna celica in biomasa.



Model House of Renewable Energy Sources

The model house consists of a set of teaching tool elements, which form interlocking models for different types of renewable energy sources or energy consumers. This enables demonstration of functioning, various measuring points, comparison and observation.

A total of 55 houses were distributed to schools and kindergartens whose teachers / educators attended workshops and carry out interest circles, science days and include RES and RUE topics in the regular curriculum.

In a competition, which was published in the academic year 2012/2013, students from registering schools presented their own »personalized« model houses and these schools now have »their« own versions.

Students from Primary School Cerkno took on the role of »promoters of renewable energy« and presented to students of lower classes the use of model houses and the workings of renewable energy sources. Promoters were also included in the various events and gatherings. Visitors to the Energy Eco Park at Primary School Cerkno are also acquainted with the model houses, as they form part of the subject matter of technical and science days, and are available as a module for students of the third triad of primary school, where students use the models in workshops to study the production of energy from renewable sources: solar, wind, geothermal, fuel cells, biomass.



Krožki in tehnični dnevi OVE in URE

Krožki in tehnični/energetski dnevi v primorskih vrtcih ter osnovnih in srednjih šolah predstavljajo ključni element izobraževalnega programa, saj gre za prenos vsebin OVE in URE na otroke oz. mladino, njihovo intenzivno vključevanje, angažiranje in ustvarjanje. Za vsako šolsko leto smo šolam predlagali določene vsebine, ki so jih šole razširile tudi glede na svoje letne delovne načrte in vsebine natečajev.

V program je bilo v treh šolskih letih vključenih 37 primorskih šol, sodelovalo je 3.308 otrok iz 96 skupin, krožki so potekali 2.848 ur. Na tehničnih dnevih OVE in URE je sodelovalo 8.940 otrok iz 269 skupin, tehnični dnevi pa so obsegali 1.839 ur.

Natečaj OVE in URE

Prvi natečaj smo razpisali oktobra 2012 z namenom, da vse šole, ki so vključene v program krožkov in tehničnih dni, predstavijo rezultate dela s hiško obnovljivih virov. Hkrati smo želeli angažirati primorske šole, da se to leto posebej posvetijo obnovljivim virom energije.

V šolskem letu 2013/2014 smo objavili natečaj na temo uporabne vrednosti odpadkov in v letu 2014/2015 za izdelavo kostumov na temo »S ponovno uporabo iz zgodbe v resničnost«. V natečajih je skupaj sodelovalo 1.801 učencev primorskih šol in vrtcev.



RES and RUE Interest Circles and Science Days

Interest Circle and Technical / Energy Days in Primorska kindergartens, elementary and secondary schools are a key element of the educational program, as this constitutes transfer of RES and RUE content to children / youth, their intensive involvement, engagement and developing creativity. For each school year, schools are offered specific content, which they deploy to schools according to their

own annual work plans and with respect to the themes of the organized competitions. In three school years, the program has included 37 Primorska schools participating with 3,308 children in 96 groups, while interest circles spanned over 2,848 hours. The RES and RUE science days involved 8,940 children from 269 groups, with science days spanning over 1,839 hours.

RES and RUE Competition

The initial competition was launched in October 2012 with a view to enabling all the schools involved in the program of science days and interest circles, to present the results of their work on the model house of renewable energy sources. At the same time, we wanted to encourage Primorska schools to dedicate special attention that year to renewable energy sources. In school year 2013/2014, we announced a competition on the usable value of waste, and in 2014/2015 for the production of costumes themed »With reuse, from story to reality.« The competitions were attended by a total of 1,801 pupils from Primorska schools and kindergartens.



Dan OVE in URE



Učenci so vsa leta ustvarili tako veličastne izdelke natečaja OVE in URE, da smo si ves čas želeli, da bi bili razstavljeni in vidni širši javnosti. Zato smo organizirali prireditev, na kateri smo razglasili rezultate natečaja in kjer so se srečali učenci in učitelji primorskih šol, da pokažejo svoje izdelke. Pogovarjali so se o tem, kar so ustvarjali v posameznem šolskem letu na temo OVE in URE in ob vsebinah prireditve pridobivali nova znanja.

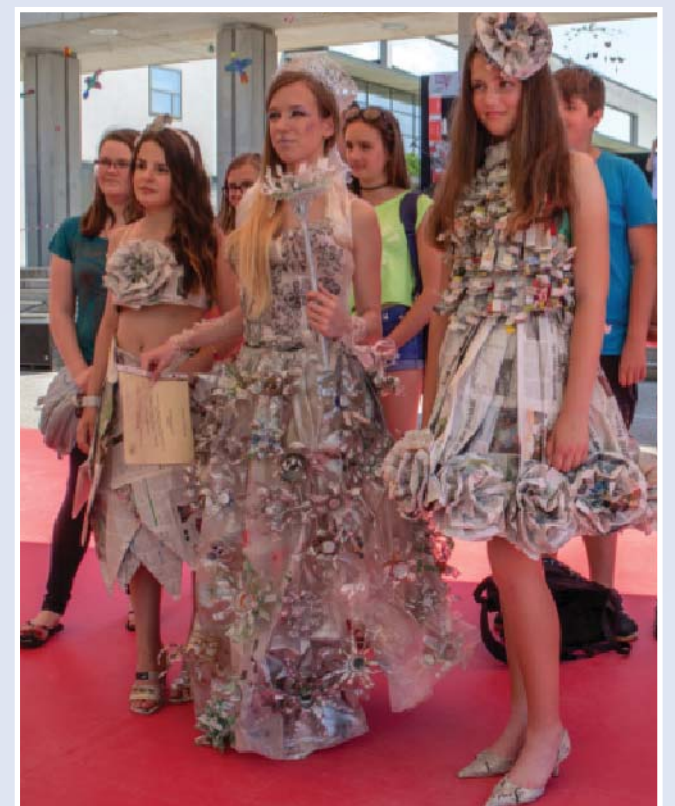
V sodelovanju z aktivnostmi projekta Alterenergy smo junija 2014 in 2015 na oder prireditve postavili dve gledališki predstavi, ki vsebinsko dopolnjujeta izobraževalni program: »Odiseja med smetmi« in trilogijo »Don Kihot med preteklostjo in prihodnostjo«. Junija 2015 smo dan OVE in URE vključili v zaključno prireditev projekta. Na dogodkih je sodelovalo 2.150 otrok iz 80 skupin.



RES and RUE Day

Throughout the years, students created magnificent objects for the RES and RUE competition, we always wanted to share these with the general public and have them displayed in a visible place. To achieve this, we organized events in which we announced competition results and winners, where students and teachers from Primorska schools met in order to showcase their work and products, where they discussed their RES and RUE creations in any given school-year and with the content of the events actually acquired some additional knowledge.

In cooperation with activities from project Alterenergy, in June 2014 and 2015, we brought to the stage of the event two theatrical performances, which thematically complement the educational program »Odyssey among garbage« and the trilogy »Don Quixote between past and future.« In June 2015, the RES and RES Day was merged into the final event of the project. This event was attended by a total of 2,150 children from 80 different groups.



Ekскурzije OVE in URE

Izobraževalno noto natečaja smo okrepili še z ekskurzijami OVE in URE za nagrajence natečajev.

Poleti 2013 so se nagrajenci natečaja udeležili ekskurzije v Švico, ki je bila poseben del projekta. Udeleženci so obiskali švicarski znanstveni center Technorama, okoljski center Umwelt Arena in živalski vrt v Zürichu ter se srečali z učenci iz šole Kantonsschule Enge iz Züricha. V letih 2014 in 2015 so nagrajenci, glede na starostne skupine, obiskali hidroelektrarno v Krškem in Svet energije v Krškem, Smetumet, e-Hišo in Živalski vrt v Ljubljani (slovenska kmetija v živalskem vrtu je postavljena s sredstvi Švicarskega prispevka).

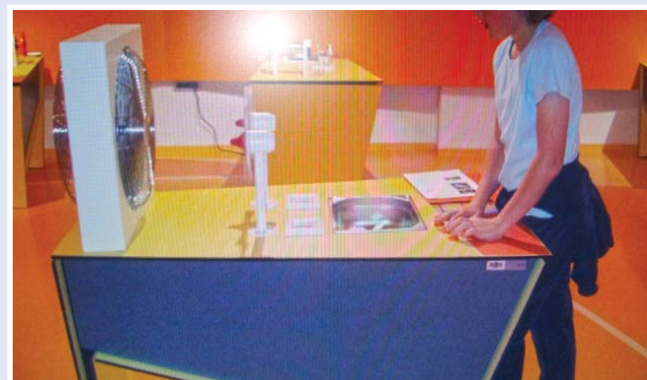
Ekскурzij se je udeležilo 436 otrok iz 33 skupin, Švico je obiskalo 40 udeležencev.

V marcu 2015 smo organizirali ekskurzijo za župane in druge predstavnike primorskih občin ter za vse ravnatelje primorskih osnovnih in srednjih šol. Pridružili so se

nam veleposlanik Švice v Sloveniji, predstavnik donatorja in predstavniki Nacionalnega koordinacijskega organa Švicarskega prispevka.

V uvodnem delu smo predstavili rezultate investicijskega dela projekta, dobre in slabe prakse izvedbe sanacij ter rezultate izobraževalno promocijskih aktivnosti. Ekскурzija se je nadaljevala z ogledom sončne elektrarne na protihrupni ograji v Vrtojbi. V Cerknem je potekal ogled kotlovnice na biomaso, kotlovnice s toplotnimi črpalkami in Brunarice obnovljivih virov energije. OŠ Cerkno je pripravila predstavitev aktivnosti, ki jih izvajajo v okviru izobraževalnega programa OVE in URE.

60 udeležencev je ekskurzijo zaključilo na Bledu, kjer so se udeleženci v Centru za upravljanje podjetja Petrol, ki dobavlja energijo prenovljenim kotlovnice v okviru projekta, seznanili z enim od načinov nadzora in daljinskega upravljanja kotlovnice.



RES and RUE Excursions

The educational flair of the competition was further enhanced with RES and RUE excursions for winners of competitions.

In the summer of 2013, the winners of the competition attended excursions to Switzerland, which was a special part of the project. Participants visited the Swiss Science Center Technorama, Umweltarena Environmental Center, the Zoo in Zurich and met with students of Kantonsschule Zurich Enge.

In the years 2014 and 2015, the winners, sorted into age groups, visited a hydroelectric power plant and the World of Energy in Krško, Smetumet, E-House and Zoo in Ljubljana (Slovenian Farm Zoo established with a grant from the Swiss Contribution).

This excursion was attended by 436 children from 33 groups. The Swiss excursion attracted 40 participants.

In March 2015, we organized an excursion for mayors and other representatives of Primorska municipalities and all Primorska headmasters of primary and secondary schools. They were joined by the Ambassador of

Switzerland in Slovenia, a representative of the donor and the representatives of the National Coordination Unit of the Swiss Contribution.

At the opening, we presented the results of the investment portion of the project, good and bad practices in implementation of energy rehabilitation activities and the results of educational and promotional activities. The excursion continued with a visit to the solar power plant on the motorway noise barrier in Vrtojba. In Cerkno, there was a visit to the biomass-burning boiler room and a viewing of the heat pumps, and finally, a visit to the Eco House of Renewable Energy Sources and Primary School Cerkno for a presentation of activities carried out under the RES and RUE educational program.

The 60 participants completed the trip in Bled, where the Management Centre of the Petrol company, the energy supplier for the retrofitted boiler rooms in the project, introduced participants to one of the means of monitoring and remote control of the boilers.



Brunarica obnovljivih virov energije v Energetskem eko parku Cerkno



O b Osnovni šoli Cerkno stoji na ogled in v uporabo za didaktične namene Energetski eko park z Brunarico obnovljivih virov energije. Brunarica je del učilnice na prostem za praktični prikaz sonaravne/trajnostne gradnje z elementi pasivne hiše, katere namen je ozaveščanje in promocija obnovljivih virov energije in njene učinkovite rabe. Izobraževalni programi v Brunarici so namenjeni generacijam vseh starosti, ozaveščanju o rabi obnovljivih virov energije ter o racionalni rabi energije, vse z namenom,

da bomo v prihodnje imeli še boljšo kvaliteto bivanja ter da bomo zanamcem prepustili lepši in prijetnejši svet. Brunarica in vsebinski program sta kvalitetna praktična dopolnitev k znanstvenim, strokovnim in turističnim srečanjem v prijaznem naravnem okolju obnovljivih energijskih virov cerkljanske regije, Primorske in cele Slovenije.

V prvem letu delovanja je Energetski eko park obiskalo preko 2.800 obiskovalcev različnih starosti.



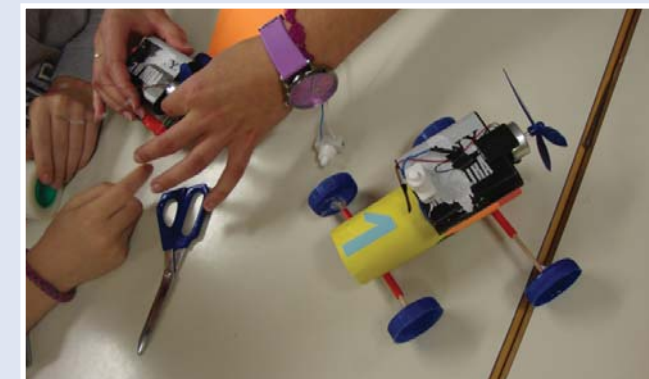
Eco House of Renewable Energy Sources in Energy Eco Park Cerkno

Next to Primary School Cerkno is situated, and in use for instructional purposes, the Energy Eco Park with the Eco House of Renewable Energy Sources. The Eco House is part of an outdoor classroom, designed for practical demonstrations of natural / sustainable building with elements of a passive house for developing awareness and promotion of renewable energy and its efficient use. Educational programs in the Eco House are designed for all generations or age groups, raising awareness regarding renewable energy sources and the rational use of

energy, with the aim that in the future, we will have an even better quality of life, and that future generations will be left with a nicer and friendlier world.

The Eco House and contents from this program are an excellent and practical complement to scientific, professional and tourist events in a friendly natural environment, renewable energy in the Cerkno region, Primorska and the whole of Slovenia.

In its first year of operation, over 2,800 visitors of all age groups visited the Energy Eco Park.



Kotiček OVE In URE v avli Mestne občine Nova Gorica

Na informacijski točki so bili vsak teden, od aprila do avgusta 2015, prisotni strokovnjaki Goriške lokalne energetske agencije (GOLEA), ki so obiskovalcem svetovali, kakšne so možnosti uporabe obnovljivih virov energije v stanovanjih, večstanovanjskih objektih, hišah, poslovnih in gospodarskih objektih; kako z manjšimi

investicijskimi ukrepi izboljšati energetske učinkovitost gospodinjstva, podjetja, objekta; kako se lahko pridobi namenska nepovratna sredstva in krediti iz programa EKO Sklada, SID banke in drugih razpisov nove evropske finančne perspektive. V tem obdobju smo izvedli 138 svetovanj, info točka pa deluje še naprej.

Ekranski prikazi energetskih kazalnikov saniranih objektov

Spodpomo energetskega informacijskega sistema, s katerim GOLEA spremlja energetske kazalnike za posamezne objekte nekaterih primorskih občin, in z neposredno povezavo do vseh kotlovnice, saniranih v okviru projekta, smo v vključenih šolah, knjižnici in v In-

formacijskem središču TNP v Trenti postavili monitorje z ekranskimi prikazi podatkov iz posameznih kotlovnice, Brunarice obnovljivih virov energije in iz sončne elektrarne, omogočen pa je tudi zbirni prikaz podatkov iz vseh kotlovnice.



RES and RUE Corner in the Lobby of Municipality Nova Gorica

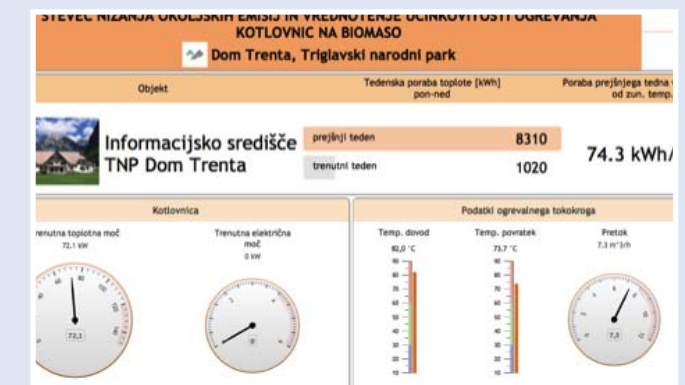
Every week from April to August 2015, at the Information Point in the municipal point, experts from the Gorica local energy agency (GOLEA), where present of offer advice to visitors regarding the possibilities of renewable energy use in residential and multi-residential buildings, houses, office and commercial buildings; on how small investment measures can be used to im-

prove the energy efficiency of households, companies and the building; how to obtain dedicated grants and loans from the program of the Eco Fund, SID Bank and other calls from the new EU Financial Perspective. During this period, we carried out 138 consultations and the info point continues to operate.

Display Screens of Indicators at Energy Rehabilitated Facilities

With support from the Energy Information System, with which GOLEA monitors energy indicators for individual buildings at individual Primorska municipalities, and using a direct link to all the boiler rooms energy retrofitted under this project, we have equipped schools, libraries, and the TNP Info

Center Trenta with monitors to display data from individual boiler rooms, the Eco House of Renewable Energy Sources and from the solar power station, and also to display an aggregated view of data from all of the boiler rooms.



Izobraževanja tehničnega osebja in hišnikov



Izobraževanja smo organizirali z namenom razvoja kompetenc za zagotavljanje in izboljšanje operativne energetske učinkovitosti stavb, za znižanje stroškov za energijo in vodo, za zagotavljanje učinkovitejšega vzdrževanja ter bolj kakovostnega in zdravega notranjega okolja.

Na praktično usmerjenem izobraževanju je 47 udeležencev s konkretnimi demonstracijami pridobilo ključna

znanja na področju upravljanja obstoječih in novejših naprav in sistemov; potrebnih ukrepov za znižanje rabe energije in stroškov; energetskega knjigovodstva in energetskih izkaznic; metod zagotavljanja varčne rabe energije in načinov ozaveščanja uporabnikov s ciljem varčne rabe energije. Na vsaki delavnici so potekali tudi ogledi ogrevalnih in prezračevalnih sistemov ter rezultatov energetske sanacije stavb.

URE izobraževanja javnih uslužbencev



Usposabljanje uslužbencev šol in drugih javnih organizacij je bilo namenjeno uporabnikom objektov, za katere se spremljajo poraba in stroški preko sistema »ciljnega spremljanja rabe energije« in za katere se predlaga izvajanje ukrepov učinkovite rabe energije. Cilj takega usposabljanja je znižati rabo energije in s tem stroške v javnih stavbah ter biti zgled dobre prakse učencem in ostalim občanom.

Izvedli smo 33 delavnic in usposobili 967 udeležencev.

Za podporo izvedbi izobraževanj javnih uslužbencev na temo učinkovite rabe energije smo izdali dve praktični brošuri »Učinkovita raba energije v pisarni« in »Učinkovita raba energije v gospodinjstvu«. Vsak udeleženec je prejel obe brošuri, na razpolago sta tudi na informacijskih točkah občin, šol in v drugih javnih organizacijah Primorske.

Training of Technical Staff and Janitors

Training was organized with the aim of developing competencies in maintenance and enhancing the operational energy efficiency of buildings, reducing the cost of energy and water, providing more effective maintenance and ensuring better quality and a more healthy indoor environment.

Practice-oriented education for 47 participants with specific demonstrations to acquire key knowledge in the management of existing and newer devices and

systems; measures necessary to reduce energy use and costs; energy accounting and energy performance certificates; methods to ensure economical energy usage and ways of developing user awareness, with the ultimate aim of reducing energy consumption. At each workshop, there were also tours of real-life heating and ventilation systems with a presentation of the results energy rehabilitation measures for these buildings.



RES Training for Public Employees

Training for staff members of schools and other public organizations was intended for users of facilities which are monitored for consumption and costs through »energy monitoring and targeting« and which have been proposed for the implementation of energy efficiency measures.

The aim of such training is to reduce energy consumption and therefore costs in public buildings and set an example of best practices for pupils and other citizens.

We conducted 33 workshops and trained 967 participants.

In support of implementation of training for public employees in techniques of energy efficiency, we published two practical brochures entitled »Energy Efficiency in the Workplace« and »Efficient Use of Energy in the Household.« Each participant received both brochures, also available at Information Points in the municipalities, schools and other public organizations in Primorska.



ŠOLE VKLJUČENE V IZOBRAŽEVALNI PROGRAM

Šole, ki so aktivno sodelovale v izobraževalnem programu OVE in URE, smo prosili, da strnejo vtise, izkušnje in znanje.

Osnovna šola Antona Ukmarja Koper

V projekt se je naša šola vključila, ker smo želeli učence ozavestiti o pomenu in vrstah obnovljivih virov energije, vse večji porabi energije ter možnostih zmanjšanja rabe za zadovoljevanje življenjskih potreb v sodobni družbi.

Intenzivno smo izvajali tehniške dneve in krožek ter z veseljem sodelovali na natečaju OVE in URE, kjer smo prejeli tudi nagrade.

Učence je vsebina projekta zelo pritegnila. Na svojih predznanjih so gradili nova spoznanja o energiji, obnovljivih in neobnovljivih virih energije ter učinkoviti rabi energije.

Na šoli smo izdelali kar tri učne pripomočke, ki pripomorejo k lažjemu razumevanju obravnavanih vsebin.

V teh letih smo z izvajanjem programa ozavestiti veliko število otrok in tudi staršev, saj so učenci izvajali raziskovalne naloge o porabi energije tudi doma. Tako so sodelovali in razmišljali tudi družinski člani, ki so ob izpolnjevanju nalog upoštevali priporočila o učinkoviti rabi energije.

Projekt se je zaključil, naše delo pa ne. Zagnano bomo nadaljevali z ozaveščanjem učencev o učinkoviti rabi in obnovljivih virih energije.

Nataša Rok Potočnik, mentorica



SCHOOLS PARTICIPATING IN THE EDUCATIONAL PROGRAM

Schools that are actively involved in the RES and RUE Educational Program, were asked to sum-up their impressions, experience and knowledge achieved.

Primary School Anton Ukmar Koper

Our school joined this project because we wanted students to become aware of the importance and types of renewable energy sources, as well as the ever increasing energy consumption and the possibilities of reducing energy consumption to meet the necessities of life in modern society.

We devoted considerable time to science days, interest circles and were happy to participate in the RES and RUE competition, where we also received awards.

Pupils were very much attracted to the subjects in the project. They built on their existing knowledge, to encompass new understanding of energy, renewable and non-renewable energy sources and efficient energy use. At the school, we even produced three teaching aids,

which help to facilitate understanding of the issues discussed.

In all these years, during the implementation of the program, we have raised awareness among a large number of children and parents, as students have research papers on energy consumption at home. So, family members worked and thought with them, and with fulfilment of the tasks started taking into account the recommendations on energy efficiency.

The project is completed, but our work is not. We will continue with raising awareness of pupils about issues of energy efficiency and renewable energy sources.

Nataša Rok Potočnik, Mentor



Osnovna šola Dragotina Ketteja Ilirska Bistrica

Šola je v okviru projekta izvajala krožek, v katerega so se vključili učenci, ki so bili pripravljeni, da se načrtno zavzamejo za odgovorno skrb do našega planeta na področju okolja. Delo v krožku je bilo zasnovano s ciljem trajno privzgojiti učencem odnos do odgovorne rabe energije, torej danes in tudi v bodoče. Na ta način so učenci dobili osnove, kako lahko premišljeno spreminjajo svoj življenjski slog, s tem vplivajo tudi na svoje bližnje in na ta način ozaveščajo sebe, svoje vrstnike in starše. Kar je najpomembnejše, pa je ozaveščanje vseh na področju učinkovite rabe energije in skrbnega ravnanja z odpadki.

V zimskem času smo našo šolo okrasili z okraski iz odpadnega materiala, uporabili smo jogurtove lončke, ki so jih učenci dobili za malico. Zima je bila tudi čas, ko smo se pogovarjali o zaščiti pred mrazom in preverili, kako dobro je oblečena naša šola. V ta namen smo se povezali z učenci predmetne stopnje in jim pomagali pri izdelavi makete šole z njeno novo preobleko. Obiskali smo šolsko kurilnico in se s hišnikom pogovarjali o ogrevanju na pelete. Zimski čas smo izkoristili tudi za to, da smo spoznali veter in njegovo moč. V zimskem času smo obiskali tudi Brunarico v Cerknem in tam zavzeto poslušali in eksperimentirali. Pomladni čas smo namenili

soncu – kot obnovljivemu viru energije. Povezali smo ga z varčevanjem z električno energijo in na sestanku šolske skupnosti sprejeli sklep, da delujejo v razredih oziroma učilnicah tako imenovani »energetski inšpektorji«, ki skrbijo, da pri svojem delu izkoristimo kar največ dnevne svetlobe in na ta način prihranimo električno energijo. Enako nalogo so učenci izvajali tudi v svojem domačem okolju. Pomladni čas je tudi čas, ko se prebujajo znanilci pomladi – lep dokaz, da je hrana vir energije. Zato smo se pri svojem delu preselili v šolsko kuhinjo in pripravili energetske ploščice. Energijo potrebujemo pri svojem delu in gibanju. Gibanje smo povezali s prometom in onesnaženjem, ki ga povzroča promet. Da bi učenci začutili, da je krajše razdalje mogoče premagovati tudi peš ali s kolesom, smo izvedli kolesarsko druženje. Zapeljali smo se do bližnjega potoka, kjer smo izdelovali in preizkušali vodne mlinčke. Tako smo spoznali še en obnovljiv vir energije – vodo. Učenci, ki so se udeležili šole v naravi v Čatežu, so imeli nalogo, da se tam pozanimajo, zakaj je voda v bazenih tako topla in kako v termah odlično izkoriščajo geotermalno energijo. O tem so celo skupino seznanili, ko so se vrnili.

Bojana Škabar, mentorica



Primary School Dragotin Kette Ilirska Bistrica

In this project, the school implements an interest circle, in which participated students who were willing to deliberately engage in responsible care for the planet, from the point of view of environmental protection. Work within the interest circle has been designed with the aim of permanently cultivating student attitude towards responsible energy consumption, therefore not only today, but also in the future. In this way students understood the basics of how one can change one's style of living, with an impact on one's family and in thus raise awareness in themselves, their peers, their parents. Most importantly, raising awareness among all regarding energy efficiency and careful waste management. In wintertime, we decorated our school with decorations from waste material, using yoghurt pots that students get with their meals. Winter was a time when we talked about protection from the cold and checking how well dressed our school is. To this end, we have teamed up with students and helped them in making a model of the school with its new look. We visited the school boiler room and the caretaker talked about pellet heating. In winter, we use for this is that we know the wind and its strength. In winter, we also visited the Eco House of RES in Cerknj and there eagerly listened to lectures and experimented. Springtime was devoted to

the sun as a renewable source of energy. We connected it with saving energy and at the meeting of the school community, we decided to introduce so-called »Energy Inspectors« who are to ensure that work in classes and classroom takes advantage of more daylight, and in this way saves more electricity. Pupils performed the same task very well in their own home environment. Springtime is also the waking times of the harbingers of spring - a solid proof that food is a source of energy. Therefore, our work moved to the school kitchen and preparing energy bars. Energy is needed for work and movement. Movement was connected with traffic and pollution caused by transport. For this, to feel that shorter distances can be overcome on foot or by bicycle, cycling was introduced as a way of socializing. We drove to a nearby stream, where we constructed and tested water mills. Thus, we explored another renewable energy source - water. Students who attended the School in Nature in Čatež, had the task, when there, to inquire as to why the water in the pools is so warm and how the spa is heated using geothermal energy. The whole group was informed about all this, when they returned to the school.

Bojana Škabar, Mentor



Osnovna šola dr. Aleš Bebler – Primož, Hrvatini

V zadnjem desetletju je ena od pomembnih usmeritev naše šole vzgoja in izobraževanje za trajnostni razvoj. Posebno pozornost posvečamo spreminjanju vedenja učencev, da bi s sedanjim ravnanjem povzročili čim manj negativnih vplivov na okolje ter ga tako ohranjali za bodočnost. Naše dejavnosti so usmerjene v učinkovito rabo energije, v ločeno zbiranje odpadkov in zmanjševanje njihove količine, v varčevanje z vodo ter v zagotavljanje trajnostne potrošnje. V okviru projekta je naša šola pridobila obnovljeno kurilnico in energetske sanirano telovadnico, kar nam zagotavlja velike prihranke energije ter udobnejše bivanje. V prostorih šole imamo informacijski monitor, ki prikazuje podatke o učinkovitosti ogrevanja in nižanju okoljskih emisij. Učence seznanjamo s pomembnostjo uporabe obnovljivih virov energije. Spodbujamo jih k spreminjanju vedenja v smeri učinkovitega prezračevanja prostorov in uravnavanja primerne temperature. Učenci vedo, da nam zamenjava ventilov radiatorjev s termostatskimi pomaga pri zagotavljanju ustrezne temperature v pro-

storih in preprečevanju velikih temperaturnih nihanj. V naših nadaljnjih korakih želimo zagotoviti tudi bolj racionalno rabo pitne vode. V sanitarijah imamo že napeljavne cevi za zagotovitev izplakovanja z deževnico. Zagotoviti pa želimo še zbiralnik za deževnico in na ta način znatno zmanjšati porabo pitne vode.

V prihodnje bomo okrepili aktivnosti za ozaveščanje pomena trajnostne potrošnje in tehtnega razmisleka pred nakupom vsakega izdelka. Naši učenci izdelajo veliko uporabnih izdelkov s ponovno uporabo odpadnih materialov ter na ta način tudi razvijajo svojo ustvarjalnost in inovativnost.

Izredno smo veseli, da smo del zgodbe, ki je začela nastajati v okviru projekta, v sodelovanju s Švicarskim prispevkom, agencijo Golea in Mestno občino Koper, kar nas podpira pri uresničevanju cilja postati trajnostna šola.

mag. Branka Likon, ravnateljica

Primary School dr. Aleš Bebler – Primož, Hrvatini

During the last decade, one of the more important policies at our school was education for sustainable development. Particular attention was paid to altering the behaviour of pupils, so that current practices will cause as little negative impact on the environment and can also conserve energy for future use. Our activities are focused on efficient use of energy, separate waste collection and reducing their volume, water saving and ensuring sustainable consumption. Within the project, our school has acquired an energy-rehabilitated boiler room and school gym, which provides us with significant energy savings, as well as with a more comfortable dwelling environment. In school premises, we now have information monitors that display data on the efficiency of heating and reduction of environmental emissions. Students are acquainted with the importance of the use of renewable energy sources. We encourage them to change their behaviour in the direction of effective ventilation of premises and setting appropriate temperatures. Students are aware that we replaced the valves with thermostatic radiator

valves to help ensure the correct temperature in the premises and to prevent large temperature fluctuations. In our next steps we are to ensure more rational use of drinking water. In toilets, we have already fitted pipes to flush using rainwater. We will provide a reservoir for rainwater, thereby significantly reducing the consumption of drinking water.

In the future, we will strengthen activities to raise awareness of the importance of sustainable consumption and thorough deliberation before buying any product. Our students produce many useful products based on the re-use of waste materials, and in this way also develop their creativity and innovation.

We are extremely pleased to be part of this storyline, which began to emerge in the context of the project, in collaboration with the Swiss Contribution, Agency Golea and Municipality Koper, this supports us in achieving the goal of becoming a sustainable school.

mag. Branka Likon, Headmistress

Vrtec pri Osnovni šoli Most na Soči

V zadnjem šolskem letu smo se prijavi k sodelovanju na natečaju OVE in URE. Odločili smo se, da ga bomo izvedli v okviru eko dneva. Ta dan smo želeli začiniti s čarovnijo in iz odpadnih materialov izdelati nekaj uporabnega. Ker smo takšnega čaranja še kako vajeni, nam delo sploh ni povzročalo težav. Malce smo pobrskali po kletih in ustvarjanje se je pričelo. Ustvarjali smo in z delom vztrajali kar več dni. In bilo je vredno. Nastali so čudoviti kostumi, ki predstavljajo književne junake.

Sledila je modna revija, na kateri se je vsaka skupina predstavila s svojim kostumom. In če povemo le to, da so vsi otroci iz drugih skupin takoj ugotovili, za katerega junaka gre, smo prepričani, da so nam kostumi odlično uspeli.

Čarovnija, uporabnost in ustvarjanje so tri sporočilne vrednosti, s katerimi najbolj celostno opišemo našo aktivnost pri natečaju.

Brigita Ostrožnik in Katja Šturm Kovačič, mentorici



Kindergarten at Primary School Most na Soči

In the last school year, we signed up to participate in the RES and RUE competition. We decided to carry it out within the framework of the Eco Day. On this day, we wanted to spice up the magic and produce from waste materials something useful. Since we have experience with such magic, the work did not cause us any problems. We dug a bit in the basements and creation could immediately begin. We created and created, and work persisted through several days. And it was worth it. Magnificent costumes were designed, representing various literary heroes.

This was followed by a fashion show, in which each group presented their costume. Considering that children from other groups immediately recognized the identity of the hero, we are confident that we managed to perfect the costumes.

Magic, usability and creativity are three informational values, which most comprehensively describe our activity in the competition.

Brigita Ostrožnik and Katja Šturm Kovačič, Mentors



Osnovna šola Dornberk

Od prvega povabila za udeležbo učiteljev na izobraževanju smo z veseljem sodelovali v projektu in pridobili veliko, tako učitelji kot učenci. Osvojili smo nova znanja, dobili sodobna orodja, bili smo prijetno vzpodbujani h kreativnosti, ustvarjalnosti in bili za to tudi nagrajeni.

Želimo izpostaviti tri glavne pozitivne učinke sodelovanja v projektu:

Učinkovita, sodobna, konkretna podpora učitelju in učencem s stvarnim prikazom modelov obnovljivih virov energije, s sodobnimi gradivi, tako na spletu s filmi, grafičnimi prikazi, tehničnimi in statističnimi podatki, motivacijskimi gradivi, slikovnim materialom, kot tudi primeri nalog in vaj, teoretičnimi osnovami in drugimi prikazi v gradivih.

Spreminjanje stališč in vrednot pri učencih za trajnostni napredek naše družbe, zavedanje naših omejitev in na drugi strani neskončnih možnosti sonaravnega in manj škodljivega ravnanja v vsakdanjem življenju. Spremenjeni pogledi in stališča spreminjajo ravnanja naših učencev in preko njih tudi njihovih družin. Na njihovi poklicni in življenjski poti bodo tako vplivala na ravnanja v odrasli dobi in s tem tudi na našo prihodnost.

Kreativno mišljenje, ustvarjalnost, drugačne rešitve, presejalni izzivi, ki so prijetni, prinašajo prijetno druženje, sodelovanje, krepijo delavnost, vztrajnost, razvijajo elemente timskega dela in na koncu prinašajo tudi zadovoljstvo, zadoščenje in celo nagrade – takšne in drugačne.

Mateja Skočir, mentorica



Osnovna šola Kozara

Vokviru projekta smo otrokom približali pojem učinkovite rabe energije, znanje pa smo nadgradili s spoznavanjem obnovljivih virov energije.

Učenci so spoznali, da za učinkovito rabo energije ne potrebujemo nujno visoko tehnološko naprednih naprav, temveč lahko že z vsakdanjimi ukrepi poskrbimo za znižanje porabe energije - tako električne kot tudi toplotne energije za ogrevanje.

V zadnjem šolskem letu smo poudarek namenili ozaveščanju ostalih učencev in učiteljev na šoli o učinkoviti rabi energije. Izdelali smo piktograme, s katerimi smo opremili učilnice, da so opozarjali uporabnike na racionalno uporabo svetil, vode, ločevanje odpadkov in uporabo svetil. Tako so se učenci začeli zavedati pomena učinkovite rabe energije in so se sami med sabo opominjali, da je potrebno ugašati luči, zapirati vodo in prezračevati prostore na primeren način.

Projekt je na naši šoli dosegel vse učence in zaposlene in nas spodbudil k bolj racionalni porabi energije.

Edvard Vrabič, ravnatelj in mentor



Primary School Dornberk

From the first invitation to participate in teacher training, we were happy to participate in this project and have gained much, both teachers and pupils. We mastered new skills, acquired advanced tools, were pleasantly encouraged to be creative, and creativity was also rewarded.

We wish to highlight three major positive effects of participation in this project:

Effective, modern, concrete support for teachers and students with realistic display models of renewable energy sources, with modern materials, with online movies, drawings, technical and statistical information, motivational materials, imaging materials, as well as examples of tasks and exercises, theoretical basics and other displays in the material.

A change in attitude and values among students regarding sustainable progress in our society, awareness of our limits and, on the other hand, the infinite possibilities of environmentally friendly and less harmful practices in everyday life. Amended views and positions, changing behaviour of our students and through them also affecting their families. In their professional and life paths, they will also have an impact on behaviour in adulthood and thus on our future.

Creative thinking, inventiveness, different solutions, surprising challenges, which are nice, bringing in pleasant companionship, cooperation, strengthening diligence, perseverance, developing elements of teamwork and ultimately also bringing pleasure, satisfaction and even prizes – of various sorts.

Mateja Skočir, Mentor



Primary School Kozara

With this project, we have brought children closer to the concept of energy efficiency, their knowledge was upgraded to learning about renewable energy.

Students have realized that efficient energy use need not necessarily mean high-tech devices, but that you can also take care of everyday activities that reduce energy consumption - both electrical and thermal energy for heating.

In the last school year, we focused on raising awareness of other students and teachers at the school regarding energy efficiency. We created pictograms illustrating classrooms that pointed users to the rational use of lighting, water, waste separation and the use of lights. Thus, students become aware of the importance of energy efficiency and are amongst themselves reminded that it is necessary to fade the lights, shut the water and

ventilate the premises in an appropriate manner. The project at our school touched on all the students and employees and encouraged us towards more rational use of energy.

Edvard Vrabič, Headmaster and Mentor



Osnovna šola Dobrovo

V okviru projekta smo tako učiteljem kot učencem omogočili potovanje v svet energije in energetike ter jih spodbudili k razumevanju vloge obnovljivih virov energije in učinkovite rabe energije.

Potovanje se je začelo z izobraževanjem in usposabljanjem učiteljev, ki so znanje hitro prenesli v učni proces; koristno so uporabili izobraževalno gradivo, zagotovo pa je k popestritvi učnih ur doprineslo interaktivno digitalno orodje z e-vsebinami OVE in URE.

Med vsemi dejavnostmi ob pouku je v teh letih zaživel tehniški dan »Energija« v 8. razredih, kjer smo s pridom uporabili tudi didaktično učilo - model hiše z obnovljivimi viri energije. Učenci so raziskovali, eksperimentirali,

primerjali, opazovali, preračunavali in bogatili svoje znanje s področja energetike.

Za najbolj vedoželjne učence višjih razredov pa smo izvedli raziskovalni krožek. Nekateri učenci so tako postali pravi energetske svetovalci.

S projektom imamo pozitivne izkušnje. Četudi se je ta zaključil, se zavedamo, da je energija eden izmed največjih izzivov sodobne družbe, zato bo cilj delovanja šole še naprej tudi vzgoja za okoljsko odgovornost in energetske opismenjevanje učencev.

Demi Munih, mentorica

Primary School Dobrovo

In this project we enabled both teachers and students to enter the world of power industry and energy, and encourage them to understand the role of renewable energy sources and energy efficiency.

The journey began with the training of teachers, who quickly transferred this knowledge into the learning process; they made effective use of the provided educational material, and certainly the interactive digital tools with RES and RUE e-Learning content have contributed to enriching lessons.

Among all the activities at the school during those years, a science day entitled »Energy« came to life in the 8th grade, where we advantageously used the didactic teaching aid - a model house for renewable energy

sources. Students have studied, experimented, compared, observed, recalculated and enriched their knowledge in the field of energy.

For the most eager students of higher classes, we have introduced the research circle. Some students have also become real energy consultants.

With this project we have had positive experiences. Even though completed, we are aware that the energy supply is one of the greatest challenges of modern society, therefore, the objective of the operation of the school is to continue with the education in environmental responsibility and energy literacy of students.

Demi Munih, Mentor



Osnovna šola Idrija

Učenci 5. razredov so v okviru tehniških dni spoznali pojem obnovljivih virov energije in še posebej vetrno energijo.

Tehniški dan je imel poleg teoretične tudi praktično vrednost, saj so učenci individualno po načrtu izdelali model jadralnega letala iz balse. Pri tem so se urili v branju načrta, natančnosti in spretnosti izdelovanja, skrbeli

pa so tudi za urejenost delovnega prostora in smotrno uporabo materiala. Jadralno letalo so na koncu tudi preizkusili in navdušenje učencev je bilo popolno.

Tudi v naslednjih šolskih letih bomo izpeljali takšen tehniški dan, saj je bil za učence zelo zanimiv in motivacijski.

Lidija Kacin, mentorica

Primary School Idrija

Within science days, 5th grade students got to know the concept of renewable energy, particularly wind power.

The science day had theoretical, as well as practical value, as the students individually made a model of a glider from Balsa, closely following the schematics. In doing so, they practiced reading schematics, and developed precision manufacturing skills, they also took care to

tidy the workspace and in the rational use of materials. The glider was tested at the end and the enthusiasm of the pupils was great.

This science day will also be carried out in the next school year, as it was very exciting and motivating for the children.

Lidija Kacin, Mentor



Osnovna šola Jelšane

V avgustu 2013 je pet učencev OŠ Jelšane z mentorjem obiskalo Švico. Okoljsko-energetska ekskurzija po Švici je bila nagrada za zmagovalce natečaja OVE in URE, ki se ga je v šolskem letu 2012/2013 udeležila tudi OŠ Jelšane. To je bila nagrada za model vetrne elektrarne, ki so ga izdelali iz odpadnih materialov. Potovanje je bilo okoljsko in energetske obarvano, zato so si nagradi učenci 7. razreda z mentorjem ogledali Okoljsko hišo eksperimentov Umwelt Arena in Tehnično hišo Technorama, obiskali eno izmed švicarskih šol in spletli nova prijateljstva. Manjkal ni niti obisk tovarne čokolade, navdušil pa je tudi živalski vrt v Zürichu. Vrtec pri Osnovni šoli Jelšane je v šolskem letu 2013/14 sodeloval z mentorico in na natečaju v kategoriji vrtcev dobil priznanje in nagrado za izdelek »Vlakec Pobiralko«.

V tem letu so ponovno sodelovali tudi učenci naše šole in v svoji kategoriji za izdelek »Spiralni grelnik vode« in »Sončni kolektor« prejeli za nagrado ekskurzijo v Eksperimentarij sveta energije in Hidroelektrarno Krško. Mlajši učenci so z mentorico spoznavali nove pojme s tega področja, uporabo sončne energije, izdelali plakat o varčevanju z električno energijo, izdelke iz odpadnih vrečk, baterijo, generator in še marsikaj. Veliko zanimivega so se naučili iz literature in e-gradiv OVE in URE. Osnovna šola Jelšane je okviru projekta izvajala intenzivno dejavnost OVE-URE in tehniške dneve. Učenci so zavzeto in ustvarjalno odkrivali možnosti trajnostnega sobivanja z okoljem.

Jožef Knafelc, Romana Kompan in Martina Katern Tomažič, mentorji

Primary School Jelšane

In August 2013, five primary school pupils from Jelšane, along with a supervisor, visited Switzerland. The energy and environmental excursion to Switzerland was the prize for the winners of the RES and RUE competition, which was held in the school year 2012/2013, in which Primary School Jelšane also participated. This was a reward for the model wind-power plant, which was made from scrap materials. The journey was environmental and energy themed, so the rewarded 7th grade students with mentors visited the house of experiments Umweltarena Environmental and the Technical House Technorama and visited one of the Swiss schools to weave new friendships. There was even a visit to a chocolate factory, and the Zoo in Zurich was very impressive. Kindergarten Jelšane in Primary School Jelšane worked with a mentor in the school year 2013/14 in the category of kindergartens received the award and the competition prize for the product »Train Pickup«.

This year pupils for our school participated again, and in their category, won the trip to the Experimentarium Energy World and hydro power plant, for their product »Spiral Kettle« and »Solar Collector«. Younger students, with the help of their mentor, learned new concepts in this field, the use of solar energy, made a poster about saving electricity, made products from waste bags, a battery, a generator and much more. Many exciting things were learned from the literature and the RES and RUE e-Learning contents. Within the project, Primary School Jelšane carried out activities in the RES and RUE interest circles and science days. Students enthusiastically and creatively explored the possibilities of sustainable coexistence with the environment.

Jožef Knafelc, Romana Kompan and Martina Katern Tomažič, Mentors



Osnovna šola Košana

Naši majhni in veliki otroci in z njimi tudi mi, učitelji, smo v času trajanja projekta podrobneje spoznavali pomen učinkovite rabe energije in obnovljivih virov energije v življenju. Odkrili smo poklic energetskega svetovalca in njegovo vlogo pri načrtovanju naših domov ter si v živo ogledali primere dobre prakse, ki so nas navdušili s preprosto logiko naravnih naukov. Mlajši otroci so se podrobneje seznanili z vetrno energijo in jo spoznavali na poučen in igriv način, ko so v svoje vetrnice lovili njeno sapo. Pri krožku smo se temeljiteje posvetili ne samo obstoju, ampak tudi delovanju naravnih virov energije. Učenci, ki so ga obiskovali, so na koncu sami postali učitelji - vodniki, ki so sovrstnikom s ponosom razkazali novo šolsko kotlovnico. Prenova

kotlovnice se je izkazala kot upravičena, saj smo že evidentirali zmanjšanje stroškov ogrevanja naše ustanove. Z uporabo peletov namesto nafte pa smo tudi okolju bolj prijazni.

V zadnjem letu trajanja projekta smo njegove vsebine spoznavali tudi skozi dramatizacijo, z igro »V kraljestvu Smrgodol«. To je bila edinstvena in nepozabna izkušnja. Na zaključni prireditvi projekta, kjer smo igro zaigrali občinstvu, smo imeli možnost videti vse razsežnosti projekta. Zato smo ponosni, da smo v njem sodelovali, saj nam je omogočil pridobitev številnih znanj in vedenj o tem, kako pravilno ravnati z energijo, da je bomo imeli toliko, kolikor je potrebujemo.

Urška Tušar, mentorica

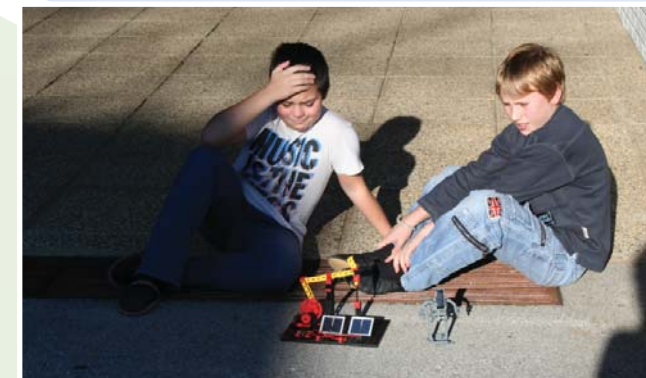
Primary School Košana

Our small and big kids and with them also we, the teachers, in the duration of the project, learned about the importance of energy efficiency and renewable energy in daily life. We discovered the profession of the energy adviser and his role in the design of our homes and saw real-life examples of best practices and were impressed with the simple logic of natural teachings. Young children were more fully acquainted with wind energy and learned in an educational and playful way to capture its breath in their windmills. In the interest circle, we were thoroughly dedicated, not only to the existence, but also the functioning of natural energy sources. Attending students, at the end they became teacher - guides who were proud to tour their peers around the new school boiler room. The energy retrofit of the boiler room has proven itself to be justifi-

fied, as we have already recorded a reduction in the cost of heating for our institutions. By using pellets instead of heating oil, but also in a more environmentally friendly way of heating.

In the last year of the project, we learned about its contents through dramatization – a play »The Kingdom Smrgodol.« It was a quite unique and unforgettable experience. At the closing ceremony of the project, where we played for the audience, we had the opportunity to see all aspects of the project. Therefore, we are really proud to have participated in it, because it has allowed us to acquire a number of skills and knowledge on how to correctly handle power, so we will have as much as is needed.

Urška Tušar, Mentor



Osnovna šola Miren

V današnjem svetu se zdi, da se o OVE in skrbi za okolje, ponovni uporabi odpadne embalaže, recikliranju in ločevanju odpadkov skoraj ni treba več pogovarjati. Seveda to ni res, zato so vse dejavnosti, povezane z zgoraj naštetimi temami, zelo dobrodošle, predvsem, če se učenci z njimi srečujejo konkretno in ne le na papirju.

Celoten projekt, vključno z zaključno prireditvijo, je učencem ponujal prav to. Na različnih področjih so se skoraj nezavedno dotaknili ene od tem, povezanih s skrbjo za okolje. Prepričana sem, da je to podkrepilo njihovo okoljsko ozaveščenost.

Glede na odmevnost in uspeh projekta ter vpetost staršev vanj je imelo delo na tem področju posreden vpliv tudi na širšo množico ljudi.

Interes učencev za sodelovanje v tem projektu je bil velik. Tehniški dan se je povezal z različnimi predmeti in je

trajal dosti več od 5 ur, saj smo se s pripravo izdelkov za razstavo ukvarjali tako pri likovni umetnosti kot pri nekaterih urah dodatnega pouka. Učencem ni bilo odveč in so bili za delo visoko motivirani.

Skupina devetošolcev iz OŠ Miren je junija 2014 ustvarila predstavo »Odiseja med smetmi« in jo tudi odigrala na dnevu OVE in URE v Šempetru pri Gorici.

Junija 2015 je skupina šestošolcev sodelovala na Zaključni prireditvi projekta v Novi Gorici. V gledališki predstavi »Don Kihot – iz preteklosti v prihodnost« so učenci odigrali osrednji del trilogije z zgodbo »Don Kihot na dvornem slavlju« in celi predstavi dodali slikovito glasbeno noto.

V bodoče si želim še podobnih skupnih projektov, da naredimo še nekaj za skupno dobro. V slogi je moč.

Andreja Levstik, mentorica



Primary School Miren

In today's world, it seems that RES and care for the environment, the re-use of packaging waste, recycling and waste separation almost need no longer even be mentioned. Of course this is not true, therefore, that all activities related to the above mentioned topics are most welcome, especially if students meet them practically and not just on paper.

In the entire project, including the final event, students offered just that. In different areas, they have almost unconsciously touched on at least one of the topics related to environmental concerns. I believe that this was reinforced by their environmental awareness.

Given the impact and success of the project, and the involvement of parents in it, work in this area had indirect impact on a broad mass of people.

Interest of pupils to participate in this project was great. The Science Day was teamed up with various subjects and lasted much longer than 5 hours, because we were preparing products for the exhibition, it dealt with both art class and some hours of additional instruction. Pupils did not find this superfluous and were highly motivated to work.

A group of students from PS Mirno created in June 2014 the idea of »Odyssey Among Garbage« and also played it on the RES and RUE Day in Šempeter.

In June 2015, a group of pupils participated in the closing ceremony of the project in Nova Gorica. In theatrical show »Don Quixote - From Past to Future« pupils played the central part of the trilogy with the story of »Don Quixote Court Celebration« and added a colourful musical note to the entire play.

In the future, I wish to continue with similar joint projects to do some for the common good. In unity is strength.

Andreja Levstik, Mentor



Osnovna šola Miroslava Vilharja Postojna

V okviru projekta smo izvajali izobraževanje predvsem z učenci sedmih in osmih razredov.

V prvem obdobju smo izvajali tehniške dneve, v drugem krožek in tehniške dneve, v zadnjem pa smo si ogledali »Brunarico«.

Učenci so bili nad izobraževalnimi gradivi zelo navdušeni. Posebno jih je pritegnilo delo pri izdelavi določenih izdelkov, npr. baterije, papirnate kače, termometrov – bel/črn papir, topla/hladna voda, izdelava briketov itd. Drugo zanimivo področje je bila »hiška OVE«, prikaz pridobivanja električne energije, predvsem sončne celice, hidroelektrarna, geotermalna energija in gorivne celice.

Zelo zanimiva so bila e-gradiva, od izkoriščanja in pretvarjanja energije do varčevanja, zlasti v gospodinjstvu, ter izračuna ogljikovega dioksida.

V zadnjem sklopu pa smo naredili celoten vpogled v izkoriščanje obnovljivih virov energije.

Ugotavljam, da smo učencem nazorno prikazali postopek pridobivanja električne energije in varčevanje z energijo ter da se zdaj zavedajo pomembnosti izkoriščanja obnovljivih virov energije.

Mirko Valenčič, mentor

Primary School Miroslav Vilhar Postojna

The project was implemented primarily in the education of students grades seven and eight.

In the first period, we implemented science days in the second interest circles and science days, and in the last, we visited the Eco House of RES.

Students were very excited about the educational material. In particular, they were attracted to work on the manufacturing of certain products, for example. batteries, paper snakes, thermometers - white / black paper, hot / cold water, making briquettes etc. Another interesting field is the »Model House of RES « and showing the generation of electricity, particularly solar, hydroe-

lectric, geothermal and fuel cells. The e-Learning contents were also very interesting, from efficiency, conversion to energy savings, particularly in the household, as well as the calculation of carbon dioxide.

In the last part, we did a full overview of the usage of renewable energy sources.

I find that we managed to clearly demonstrate to the students the process of power generation and energy savings, and that students are now aware of the importance of making use of renewable energy sources.

Mirko Valenčič, Mentor



Osnovna šola Šempas

Na natečaj OVE in URE »S ponovno uporabo iz zgodbe v resničnost« smo se odzvali, da za izdelavo izdelka uporabimo odpadni material. Z ekološkega pomena je ponovna uporaba materiala bistveno pomembnejša, kot če bi uporabili nove, še ne rabljene materiale. Z izbranim materialom se redno srečujemo v smislu potrošnega in hkrati odpadnega viška, ki pa smo ga v našem primeru ponovno uporabili in se tako srečali

tudi s pojmom ekologija, saj je v današnji dobi prekomernega onesnaževanja še kako primerno in potrebno, da o tem problemu govorimo. Hkrati pa so učenci ob izdelavi izdelka pridobivali nove izkušnje, znanje, spretnosti, oblikovali so si osebnostne lastnosti in se tako vsestransko razvijali.

Lilijana Zalesjak Gerlica, mentorica

Primary School Šempas

To the challenge of RES and RUE Competition »With Re-use From Story to Reality« we responded with the manufacture of a product using waste material. The ecological importance of material re-use was significantly more important than using new, not yet used materials. We meet with the selected materials on a regular basis in terms of consumables, while the scrap leftovers, which we used in our case, represents re-use, thus

also meeting with the concepts of ecology, because in today's era of excessive pollution, it is appropriate and necessary that this issue be tackled. At the same time, the pupils, through the manufacture of the product, acquire new experiences, knowledge, and skills, highlight their own personality traits and so developed in a versatile way.

Lilijana Zalesjak Gerlica, Mentor



Osnovna šola Solkan

Četrtošolci OŠ Solkan so bili vključeni v projekt kar tri leta. V teh letih so se s tematiko tega projekta tako seznanile tri generacije učencev. To je okoli 160 otrok, ki že stopajo po poti ustvarjanja obnovljive prihodnosti.

Kaj so to obnovljivi viri energije in kako varčevati z energijo, so učenci spoznavali pri urah naravoslovja in tehnike v sklopu vsebin »Pretakanje snovi«, ki smo jo povezali z vsebinami projekta. Pri tem smo si pomagali s poučnimi e-gradivi. Da je bila tematika učencem še bližja in zanimivejša, je pripomogla tudi ekskurzija v Brunarico v OŠ Cerkno, nad katero so bili učenci zelo navdušeni. Otroška spoznanja o energiji pa smo obogatili še z ogledom HE Solkan in delavnicami tehniškega dne »Energija v šoli«, kjer so se povezali z devetošolci.

Veliko navdušenje so solkanski četrtošolci izkazali predvsem pri ustvarjanju kostumov na natečaj »S ponovno uporabo iz zgodbe v resničnost«. Z veliko vnemo in bogatimi idejami so se lotili zbiranja rabljenih predmetov in z njimi izdelali kostume, za katere so bili tudi nagrajeni. To je učence še bolj motiviralo za delo z odpadnim materialom do novega, uporabnega predmeta. Rojevale so se zamisli o izdelavi pustnih mask, svetil, družabnih iger, vazic, peresnic, stojal itd.

Da je sonce osnovni in obnovljivi vir energije, so se učenci že naučili. Kako sončno energijo izkoristiti, pa so spoznali, ko so v sklopu tehniškega dne »Energija v šoli« izdelali sončni kolektor in sončno peč. Z navdušenjem so ugotavljali, da se je voda segrela, ko so kolektorje postavili na travnik za šolo.

Skozi različne dejavnosti so učenci spoznali tudi pomen energetske izkaznice. V raziskavi so ugotovili, da šola porabi trikrat več plina kot elektrike in da glede na izpust ogljikovega dioksida spada med povprečne objekte. Da bi lahko bili učenci šole še bolj varčni, so izdelali opozorilne znake za zapiranje luči in vode in jih namestili na mesta, kjer so učenci pogosto pozabljali na dogovorjeno in koristno varčevanje.

Tudi ugotovitev, da se poraba energije v Sloveniji vsako leto povečuje, je učence v razmišljanju vodila do spoznanja, da bomo to spremenili le, če bo vsak posameznik učinkovito in varčno uporabljal energijo. Le tako bomo prebivalci tega čudovitega planeta živeli kakovostnejše življenje.

Metka Nunčič in Mira Lazar, mentorici



Primary School Solkan

Solkkan Elementary School 4th graders were included in this project for three years. In those years, the subjects addressed by this project were accessible to three generations of pupils. This means about 160 children who already walk the path of creating a renewable future.

What are renewable sources of energy and how to save energy, the students learn about this in classes on science and technology in the context and form of »flowing content«, which we connected to the project subject matter. In doing so, we help ourselves with educational materials and e-Learning contents. To make the theme even more interesting and closer to the students, was also a contribution of the excursion to the Eco House of RES in Primary School Cerkno, about which the pupils were very enthusiastic. Children learned about energy, we have enriched this with a visit to the HPP Solkan and technical workshops on »Energy in School«, where they connect with 9th graders.

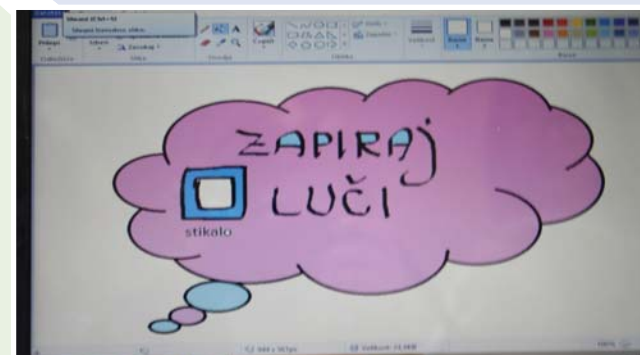
The great enthusiasm of Solkan 4th graders proved especially obvious when creating costumes for the competition »With Reuse From Story to Reality.« With great zeal and rich ideas, they began collecting used items and with them created all the costumes, which were also rewarded. This motivated students even more to work with waste material to create new - usable objects. Ideas came to be after making carnival masks, lamps, board games, vases, pencil boxes, racks, etc.

That the sun is a basic and renewable energy source, the students had already learned. How to take advantage of solar energy, they realized through the technical part of »Energy in School« and developed a solar panel and a solar furnace. With enthusiasm, they observed how the water heats up when the collectors are put on the lawn of the school.

Through various activities, students learned about the importance of energy performance certificates. The study found that the school spends three times more gas than electricity, and that the school is ranked, according to the carbon dioxide emissions among below-average facilities. In order for school students to be more economical, they produced warning signs for shutting off the light, water and installed them in places where the students often forget agreed and beneficial savings.

Even the realization that energy consumption in Slovenia increases every year, led the students to the conclusion that we will change this only if each individual will be effective and efficient in the use of energy. Only then will the inhabitants of this wonderful planet live better lives.

Metka Nunčič and Mira Lazar, Mentors



Osnovna šola Sečovlje

Učenci 2., 3. in 4. razreda smo se odpravili v Energetski eko park Cerkno, kjer smo spoznavali in razmišljali o obnovljivih virih energije. Videli smo vozilo, ki ga poganja voda, energija sonca ujeta v sončne celice pa je premikala robotke iz lego kock. Raziskovali smo vremenske pojave ter z manjšimi instrumenti in plesno dejavnostjo poustvarjali zvoke vremenskih pojavov. S pomočjo sončnih celic so učenci aktivirali ventilator, ki je napihnil obleko, v katero je bila oblečena učenka, ki se je kaj kmalu spremenila v »sumo borko«.

Seznani smo se še z eko vrtom, čebelnjakom, hotelom za insekte, kompostnikom ter igro zaključili z eko-twisterjem, kjer smo utrjevali znanje o obnovljivih virih energije.

Po prihodu v šolo smo informacije osvetlili in še enkrat analizirali. Menim, da sedaj učenci bolje razumejo, zakaj je uporaba obnovljivih virov energije nujna in izziv za prihodnost.

Roberta Jug, mentorica

Primary School Sečovlje

Pupils of 2nd, 3rd and 4th grade visited the Energy Eco Park Cerkno, where we learned about and thought about renewable energy. We saw a vehicle driven by water, solar energy captured in solar cells moving robots made of Lego bricks. We studied weather phenomena and small instruments and dance activities to reproduce the sounds of weather phenomena. With the help of solar cells, pupils activated a fan, which blew into a dress worn by another student, who was soon changed into a »sumo fighter.«

We were further acquainted with the eco-garden, bee-hives, hotel for insects, a compost maker and the game ended with an eco - Twister, where we consolidated knowledge on renewable energy sources.

After arriving at school, we highlight all the gathered information and analysed it again. I think that the students now have a better understanding of why the use of renewable energy sources is an essential matter and a challenge for the future.

Roberta Jug, Mentor



Osnovna šola Šmarje pri Kopru

V letih sodelovanja v projektu smo še okrepili naša vedenja o učinkoviti in varčni rabi energije, alternativnih virih ter skrbi za pridelavo čim manj odpadkov oz. o njihovi ponovni uporabi. Šola je posvetila veliko pozornosti tem področjem in delovala v tej smeri. Učitelji smo se na več delavnicah in predavanjih izobraževali in učencem vsa znanja posredovali pri pouku, krožkih OVE in tehniških dnevih.

Zelo veseli smo tudi, da smo pridobili novo kotlovnico in energetske sanirano telovadnico. Ne samo, da smo

na ta način naredili nekaj dobrega za naše okolje, temveč smo tudi znižali stroške in tako prihranili nekaj zelo potrebnih sredstev.

Kot šola bomo tudi v prihodnje investirali v didaktične materiale, varčnejše gospodinske in druge aparate ter skrbeli za naš objekt. Učitelji pa bodo še naprej prenašali spoznanja o teh pomembnih tematikah na mlajši rod.

Jana Jurič, Mateja Puc, Matjaž Borovničar in

Zdenka Marčič, mentorica

Primary School Šmarje pri Kopru

In the years of participation in this project, we further strengthened our knowledge about the effective and efficient use of energy, alternative sources, and the responsibility to minimize waste production and maximize their re-use. The school is now focusing a lot of attention in this area and is working in that direction.

As teachers, we had a number of workshops and lectures, and have transmitted such knowledge, educating students in the classroom, RES interest circles and science days.

We are also very pleased that we have gained a new boiler room and an energy rehabilitated gym. Not only do we, in this way, do something good for our environment, but we also help reduce costs and thus save some much-needed funds.

As a school, we will continue to invest in instructional materials, more economical household and other appliances and care for our facility. Teachers will continue to transmit knowledge about these important topics onto the younger generation.

Zdenka Marčič, Mentor



Osnovna šola Podgora Kuteževo

OŠ Podgora Kuteževo in skupina Čebelice iz vrtca smo v projektu sodelovali vsa tri leta. Skozi vsebine so tako otroci kot starši s svojim aktivnim sodelovanjem spoznavali problem onesnaževanja in možnosti za ponovno uporabo odpadkov. Reciklirali smo star papir in s poskusi ugotavljali njegove lastnosti. Seznanili smo se z življenjem nekoč in ga primerjali z današnjim. Skozi vsakodnevne dejavnosti smo poudarjali potrebo po varčevanju z energijo. Iz odpadnih materialov smo izdelovali različne družabne igre in organizirali igralno popoldne s starši. Kako pomembno je zgodnje ozaveščanje otrok o varovanju narave in varčevanju z energijo, opazamo vsak dan, saj opazijo vsako odvrženo pločevinko ali plastično vrečko, opozarjajo na prižgano luč ali odprto pipo. Razumejo in uporabljajo izraze, kot so ločevanje odpadkov, bio odpadki, recikliranje, obno-

vljivi viri. Z vključitvijo v projekt pa niso spoznali le pojma, ampak so pridobivali nova znanja, eksperimentirali in ustvarjali. Poleg tega pa so na problem varstva okolja opozarjali tudi druge. Izrazili so željo, da bi takšne stvari počeli večkrat. Za učence tretje triade je bilo najbolj zanimivo uporabiti hiško, ki je nudila veliko raznovrstnega eksperimentiranja. Izkoristili smo pripomočke pri tehniških dnevih, ko smo temeljito raziskali varčevanje energije za ogrevanje v povezavi s toplotno izolacijo in uporabo sončne energije. Gradiva lahko učitelji zelo dobro uporabljamo pri pouku za različne predmetne stopnje. Bilo je kreativno, zabavno, poučno in veselo. Učenci so razmišljali, iskali rešitve, bili kritični, zagnani in delavni. Naše urice so bile delovno zabavne.

Marija Štemberger, mentorica

Primary School Podgora Kuteževo

Primary School Podgora Kuteževo and the group "Bees" from kindergarten were involved in the project during all three years. Through the content, with active participation of both children and parents, they learned about the problem of pollution and the potential for re-use. We recycle used paper and experimentally determined its properties. We have studied life in the past and compared it with life today. Through daily activities, we emphasize the need to save energy. From waste materials we have produced a variety of board games and organized games in the afternoon with the parents. We can see every day how important is early development of awareness amongst children regarding nature protection and energy saving, when they notice each dropped can or plastic bag, and wish to draw attention to the light, or turning on or off the tap. They understand and use terms such as separating waste, bio-waste recycling and renewable resources.

By joining this project, not only have they realized such concepts, but they have also gained new knowledge, experimented and created. In addition, they are pointing out the problem of protection of the environment to others. They expressed their desire to do such things repeatedly. For students of the third triad, the most interesting part was using the model house, which offered a great variety of experiments. We used technical aids in the days when we thoroughly investigated saving energy for heating in conjunction with heat insulation and use of solar energy. The materials were very usable for teachers in the classroom for different subjects. It was creative, fun, informative and entertaining. Students are thinking of looking for solutions, they were critical, enthusiastic and hardworking. Our classroom times were working fun.

Marija Štemberger, Mentor



Šolski center Postojna

V okviru projekta smo mentorji na izobraževalnih delavnicah pridobili znanja, ki smo jih v svojih sredinah prenašali na mladi rod. Sama zamisel za izvajanje krožka je bila enostavna in jasna. Postopno udejanjanje pa je bilo povezano in prepleteno s številnimi težavami, ki so terjale sprotne, hitre in racionalne rešitve, polno mero razumevanja in pomoč. Krožek je prvo leto obiskovalo 8 učencev, tretje leto že 27 dijakov. Poleg udeležbe na srečanjih v okviru krožka so bili dijaki prisotni tudi na različnih delavnicah, seminarjih in konferencah. Obravnava tematike URE in OVE je bila

nekajkrat izvedena tudi v vsebinah rednega pouka. Prvi dve šolski leti je bila tematika krožka povezana s spoznavanjem URE in OVE ob praktični uporabi didaktičnih pripomočkov, predvsem hiške obnovljivih virov energije. V zadnjem šolskem letu pa je bil poudarek na analizi rabe energije v posameznem gospodinjstvu, na podlagi česar smo z obravnavo verodostojnih podatkov lahko izdelali enostavno energetske izkaznice in ogljični odtis.

Ado Barbiš, mentor

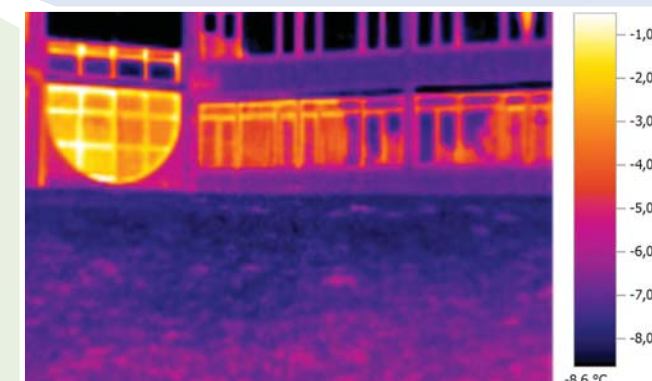
School Center Postojna

Within this project, we mentors, attending teacher-training workshops, have gained knowledge that we have passed on to the younger generation in our midst. The idea itself, to implement an interest circle was quite simple and clear. However, gradual implementation and implementation brought to light and was intertwined with many problems that required real-time, rapid and rational solutions, a lot of understanding and support. 8 students attended the interest circle in the first year, the third year already had 27 students.

In addition to the participation in the meetings of the interest circle, the students were also present in the various

workshops, seminars and conferences. Addressing topics of RES and RUE has been made several times in the content of regular classes. In the first two school years, the theme of extra-curricular activities related to learning about RES and RUE were in the practical application of teaching aids, particularly the model house of renewable energy sources. In the last school year, we focused on the analysis of energy consumption in each household, based on which we had to deal with credible data, based on which we could easily produce the energy performance certificate and carbon footprint.

Ado Barbiš, Mentor



Gimnazija Tolmin

Gimnazija, ki v svojem rednem predmetniku nima tehničnega pouka, je v projekt vstopila brez specifičnega znanja oz. učiteljev, ki bi področje OVE in URE dobro poznali. Prav zato so učitelji naravoslovja, ki so se vključili v projekt, izredno pozitivno sprejeli usposabljanje, nadgrajeno z izvrstnimi in uporabnimi gradivi za delo na tehničnih krožkih in tehničnih dnevih. Teh gradiv, skupaj z modelom energetske varčne hiše, nismo uporabljali le v aktivnostih projekta, pač pa so postala del vsakoletnega programa tehničnega dneva, ki ga bomo tudi v prihodnje izvajali za dijake prvih letnikov. Prav tako postaja trajen ogled energetske varčne Brunarice v Energetskem eko parku OŠ Cerkno. Druga pomembna pridobitev v naši šoli je dvig osvešče-

nosti o pomenu URE in uporabe OVE, ne le med dijaki, pač pa tudi med delavci šole. Učitelji so se na krajšem usposabljanju seznanili z nujnimi ukrepi, s katerimi lahko sami prispevamo k URE. Največ tehničnega znanja so v projektu prav gotovo pridobili hišniki, ki so se podrobno poučili o ukrepih in pridobili znanje, potrebno za učinkovito upravljanje stavbe šole. Prav zavest, da lahko že z organizacijskimi ukrepi pomembno prispevamo k prihranku energetikov, je skupaj z zavestjo o pomenu rabe OVE v času trajanja projekta pri vseh vpletenih postala del vsakodnevnega razmišljanja in delovanja.

Branka Hrast Debeljak, ravnateljica

Tolmin Grammar School

The gymnasium secondary school, which in its regular curriculum lacks a technical class, entered the project without specific knowledge or teachers who could field RES and RUE knowhow. That is why science teachers who participated in the project approached training very positively, enhanced with excellent and useful material for work in interest circles and



first-year students. Similarly, a visit to the energy-saving Eco House of RES in the Energy Park of Primary School Cerkno, is also part of the annual program. Another important achievement in our school is to raise awareness of the importance of RUE and RES usage, not only among students but also among school staff. Teachers had some short training, took note of the emergency measures, which may themselves contribute to a class hour. Most technical expertise in project was certainly gained by janitors, who were briefed in the details on the measures and gained the knowledge required to effectively manage the school building. It is the awareness that even organizational measures make an important contribution to energy savings, together with an awareness of the importance of the use of RES in the duration of the project, become a part of everyday thinking and acting for all involved.

Branka Hrast Debeljak, Headmistress



Srednja gozdarska in lesarska šola Postojna

V prvem letu projekta je bil pri nas izveden energetski krožek dijakov v šoli, v naslednjem šolskem letu pa med dijaki v dijaškem domu. Vsebine energetske učinkovitosti in uravnotežene rabe energije pa so bile vključene tudi v kurikulum v prvem letniku izobraževanja. SGLŠ je pod okriljem projekta celotno obdobje ponujala energetski dan tudi v sklopu dni dejavnosti za osnovne šole. Naš program v okviru energetskega dne obsega tri sklope: les kot energent, predstavitev obnovljivih virov energije, izračuni porabe energije v vsakdanjem življenju ter kritičen razmislek o porabi energije in varčevanju z njo. V teh letih nas je na energetskih dneh

obiskalo preko 500 otrok tretje triade osnovnih šol iz vse Slovenije. S svojimi aktivnostmi učenci in dijaki dokazujejo, da niso neobčutljivi za načrtno razsipnost energije v družbi in družini, da z radovednostjo raziskujejo in spoznavajo nove tehnološke postopke, ki omogočajo pametno izrabo in uporabo energije, ter da se zavedajo, da je tudi od njihovega vsakdanjega ravnanja odvisna vzdržna poraba energije v družini in družbi.

Cvetka Kernel, ravnateljica

Forestry and Wood Processing Secondary School Postojna

In the first year of the project, an energy circle was implemented for school students in the school, and in the next school year for students in the dormitory. The subjects of energy efficiency and balanced use of energy were also included in the curriculum in the first year of education. SGLŠ, under the patronage of the project also offered an energy day for elementary schools during the entire period of activities. Our program, as regards energy, comprises three parts: wood as a source of energy, a presentation of renewable energy sources, calculations of energy consumption in daily life and critical thinking about energy consumption and savings.

In those years, energy days were attended by over 500 children of the third triad of primary schools from all over Slovenia. With these activities, pupils demonstrated that they are not insensitive to the systematic wastefulness of power consumption in society and the family, the curiosity to explore and learn about new technological processes, which allow smart use and energy use and being aware that even their own daily behaviour influences the sustainable energy consumption in the family and society.

Cvetka Kernel, Headmistress



Kazalo

Uvodnik	2
Sončna elektrarna na protihrupni ograji hitre ceste - Občina Šempeter Vrtojba	6
SANACIJE OBJEKTOV	8
Osnovna šola Cerkno - Občina Cerkno	8
Osnovna šola Šmarje pri Kopru - Mestna Občina Koper	10
Osnovna šola dr. Aleš Bebler – Primož, Hrvatini - Mestna občina Koper	12
Osnovne šole Sečovelje - Občina Piran	14
Podružnična Osnovna šola Sveti Peter, <i>Osnovna šola Sečovelje</i> - Občina Piran	16
Osnovna šola Košana - Občina Pivka	18
Knjižnica Cirila Kosmača Tolmin - Občina Tolmin	20
Podružnična šola Kojško, <i>Osnovna šola Dobrovo</i> - Občina Brda	22
Podružnična šola Trnovo, <i>OŠ Solkan</i> - Mestna občina Nova Gorica	24
Osnovna šola Dragotina Ketteja - Občina Ilirska Bistrica	26
Osnovna šola Toneta Tomšiča Knežak - Občina Ilirska Bistrica	28
Podružnična šola Vrtojba, OŠ Ivana Roba Šempeter Pri Gorici - Občina Šempeter Vrtojba	30
Informacijsko središče Dom Trenta - Triglavski narodni park	32
IZOBRAŽEVALNI PROGRAM OVE IN URE	34
Izobraževanja za učitelje in vzgojitelje	34
Izobraževalno gradivo z delovnimi listi za delo v razredu	36
Rubrika OVE in URE v šolskih razgledih	36
E-gradiva OVE in URE	37
Hiška obnovljivih virov energije	38
Krožki in tehnični dnevi OVE in URE	40
Natečaj OVE in URE	40
Dan OVE in URE	42
Ekскурzije OVE in URE	44
Brunarica obnovljivih virov energije v Energetskem eko parku Cerkno	46
Kotiček OVE In URE v avli Mestne občine Nova Gorica	48
Ekranski prikazi energetskih kazalnikov saniranih objektov	48
Izobraževanja tehničnega osebja in hišnikov	50
URE izobraževanja javnih uslužbencev	50
ŠOLE VKLJUČENE V IZOBRAŽEVALNI PROGRAM	52
Osnovna šola Antona Ukmarja Koper	52

Contents

Editorial	4
Solar Power Plant on Motorway Noise Barrier - Municipality Šempeter Vrtojba	7
BUILDINGS ENERGY RETROFIT	9
Primary School Cerkno - Municipality Cerkno	9
Primary School Šmarje pri Kopru - Municipality Koper	11
Primary School dr. Aleš Bebler – Primož, Hrvatini - Municipality Koper	13
Primary Schools Sečovelje - Municipality Piran	15
Branch Primary school Sveti Peter, <i>Primary School Sečovelje</i> - Municipality Piran	17
Primary School Košana - Municipality Pivka	19
Ciril Kosmač Library Tolmin - Municipality Tolmin	21
Branch Primary School Kojško, <i>Primary School Dobrovo</i> - Municipality Brda	23
Branch Primary School Trnovo, <i>Primary School Solkan</i> - Municipality Nova Gorica	25
Primary School Dragotin Kette - Municipality Ilirska Bistrica	27
Primary School Tone Tomšič Knežak - Municipality Ilirska Bistrica	29
Branch Primary School Vrtojba, Primary School Ivan Rob Šempeter pri Gorici - Municipality Šempeter-Vrtojba	31
Info Center Trenta - Triglav National Park	33
RES AND RUE EDUCATION PROGRAM	35
Teacher Training	35
RES and RUE E-learning	36
Educational materials with work-sheets for classroom work	37
RES and RUE Column in “Šolski Razgledi”	37
Model House of Renewable Energy Sources	39
RES and RUE Interest Circles and Science Days	41
RES and RUE Competition	41
RES and RUE Day	43
RES and RUE Excursions	45
Eco House of Renewable Energy Sources in Energy Eco Park Cerkno	47
RES and RUE Corner in the Lobby of Municipality Nova Gorica	49
Display Screens of Indicators at Energy Rehabilitated Facilities	49
Training of Technical Staff and Janitors	51
RES Training for Public Employees	51
SCHOOLS PARTICIPATING IN THE EDUCATIONAL PROGRAM	53
Primary School Anton Ukmar Koper	53

Osnovna šola Dragotina Ketteja Ilirska Bistrica54

Osnovna šola dr. Aleš Bebler – Primož, Hrvatini.....56

Vrtec pri Osnovni šoli Most na Soči56

Osnovna šola Dornberk.....58

Osnovna šola Dobrovo.....60

Osnovna šola Idrija61

Osnovna šola Jelšane.....62

Osnovna šola Košana.....63

Osnovna šola Miren64

Osnovna šola Miroslava Vilharja Postojna66

Osnovna šola Šempas67

Osnovna šola Solkan.....68

Osnovna šola Sečovlje70

Osnovna šola Šmarje pri Kopru.....71

Osnovna šola Podgora Kuteževo.....72

Šolski center Postojna.....73

Gimnazija Tolmin.....74

Srednja gozdarska in lesarska šola Postojna75

Primary School Dragotin Kette Ilirska Bistrica55

Primary School dr. Aleš Bebler – Primož, Hrvatini.....57

Kindergarten at Primary School Most na Soči57

Primary School Dornberk59

Primary School Dobrovo60

Primary School Idrija61

Primary School Jelšane.....62

Primary School Košana.....63

Primary School Miren65

Primary School Miroslav Vilhar Postojna66

Primary School Šempas.....67

Primary School Solkan.....69

Primary School Sečovlje70

Primary School Šmarje pri Kopru.....71

Primary School Podgora Kuteževo72

School Center Postojna73

Tolmin Grammar School74

Forestry and Wood Processing Secondary School Postojna75

Naslov	Obnovljivi viri energije v primorskih občinah
Urednica	Alenka Palian
Lektorica	HIERONYMUS, prevajanje in lektoriranje, Nives Mahne Čehovin s.p.
Prevod	Zavod sSs
Priprava za tisk	EKO-GRAF Milan Adžić s.p.
Tisk	COLOR PRINT, Nova Gorica
Fotografije	GO-TV, GOLEA, šole vključene v projekt; Šempeter z javno razsvetljavo, avtorica Elena Benčina
Založnik	GOLEA, Nova Gorica
Leto izida	2015
Naslov knjižne zbirke	Izobraževalno gradivo
Podatki o nosilcu avtorskih pravic	GOLEA, izvajalska agencija projekta »Obnovljivi viri energije v primorskih občinah«
Število natisnjenih izvodov	1.500 izvodov
Navedba javnega financerja	Brošura je nastala v okviru projekta »Obnovljivi viri energije v primorskih občinah«, financiranega s sredstvi Švicarskega prispevka in v projekt vključenih občin ter Triglavskega narodnega parka

Title	Renewable Energy Sources in Primorska Municipalities
Editor	Alenka Palian
Proof-reading (Slovene)	HIERONYMUS, prevajanje in lektoriranje, Nives Mahne Čehovin s.p.
Translation (English)	Zavod sSs
Design and prepress	EKO-GRAF Milan Adžić s.p.
Print	COLOR PRINT, Nova Gorica
Photography	GO-TV, GOLEA, schools participating in the project; Šempeter public lighting, author: Elena Benčina
Publisher	GOLEA Nova Gorica
Year of publication	2015
Title of book collection	Educational Material
Intellectual Property Rights	GOLEA, Executing Agency for Project "Renewable Energy Sources in Primorska Municipalities"
Number of printed copies	1.500 copies
Public financing	The brochure came to be in project "Renewable Energy Sources in Primorska Municipalities", financed from Swiss Contribution funds and municipalities participating in the project, along the Triglav National Park

GORIŠKA LOKALNA ENERGETSKA AGENCIJA - GOLEA

pisarna/office: Mednarodni prehod 6, Vrtojba, 5290 Šempeter pri Gorici, Slovenija
sedež/administrative address: Trg Edvarda Kardelja 1, 5000 Nova Gorica, Slovenija
E-mail: info@golea.si; T: +386 (0)5 393 24 60; www.golea.si

**USTVARJAMO OBNOVLJIVO PRIHODNOST
CREATING A RENEWABLE FUTURE**



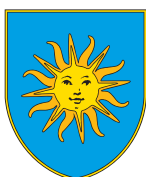
OBČINA CERKLJE



Občina
Goriška Brda



OBČINA
ILIRSKA
BISTRICA



MESTNA OBČINA KOPER
COMUNE CITTÀ DI CAPODISTRIA



MESTNA OBČINA
NOVA GORICA



OBČINA PIRAN
COMUNE DI PIRANO

OBČINA PIVKA



Občina
Šempeter-Vrtojba



Občina Tolmin

