



## May 2014 eNewsletter

### Crematorium Energy Recovery Project – Redditch Borough Council

Redditch Borough Council is keen not to just “be seen to be green” but to deliver. The innovative design of our refurbished Abbey Stadium Leisure Centre includes a sustainable energy system by which the heat extracted during the treatment of flue gases to reduce mercury emissions at the adjacent Redditch Crematorium is used to largely supply the heating requirements of the Leisure Centre. The scheme is unique in the UK, has widespread support not just locally, but nationally and internationally.

The Abbey Stadium Leisure Centre has been fully refurbished including a new swimming pool. The development is adjacent to Redditch Crematorium, where the cremators were due to be replaced in Autumn 2012, and under new EU legislation equipment upgraded to reduce harmful mercury emissions into the atmosphere. In order to abate (capture) mercury and other contaminants from flue gases following a cremation, cooling these gases from around 800 to around 140-160 degrees centigrade is necessary, creating a significant heat loss which without energy recovery would simply be exhausted into the sky via air blast coolers on the roof. Instead, the gases are cooled by being passed through a chamber surrounded by water. The water absorbs the heat and a heat exchanger transfers the heat to a separate water system which travels underground via super insulated pipes to heat the Abbey Stadium (supplemented by a gas boiler but avoiding a CHP unit). Pipes are insulated with eco-friendly lagging.

Our scheme is the first of its kind in the UK in that we will use 100% of the heat, all year round, because Redditch Crematorium is located very close to the Abbey Stadium development which is large enough to be utilised as a ‘heat sink’ for all of the recovered heat energy. The Leisure Centre requires 360 kWh of heating per day and thanks to the innovative heat transfer system, 280 kWh of this will be supplied essentially for free. The Crematorium runs for eight hours a day, and the Abbey Stadium for fifteen; over the course of a year, this should provide for 42% of the heating demand at the new Leisure Centre with a saving of £16,800 in offset mains natural gas costs (based on current fuel prices). Already, we have avoided the need to install a Combined Heat and Power unit – which would have cost around £100,000 and only lasted for 10 years. Because the heat transfer equipment and pipeline is relatively simple technology, it only cost c.£80,000 (funded from existing budgets for the sites), saving c.£20,000 straight away. We are still awaiting final invoices and details of anticipated future expenditure; however, it is likely that lifespan will be at least 25 years and maintenance costs will be low. These savings can be spent on other vulnerable key Council services that may otherwise be at risk in these times of severe local authority cuts. Combined with the more efficient cremators, the project will significantly reduce the carbon footprint of both the new leisure centre and the crematorium. Officers anticipate that it will reduce the Council’s carbon footprint by a further 4%.





## NEWSLETTER

### City of Gothenburg reaches 100 electric cars in two years

The municipality of Gothenburg, Sweden set a target in 2012 to reach 100 electrical cars by 2015 within the public administration. Two years before deadline the target is reached. The winning concept is spelled collaboration. While the mobility office has coordinated the task, the public energy company has supplied the city with power infrastructure and the public offices and staff has shown great commitment and willingness to switch their old fossil fuel cars to the climate smart electrical ones. Today, all the public administration offices on district level have electrical cars.



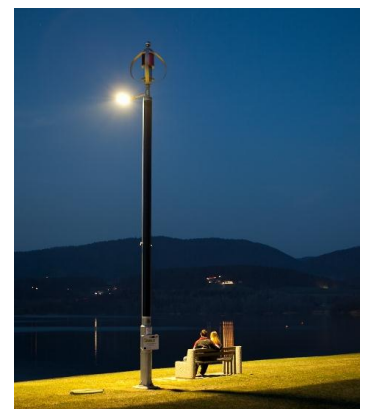
### Energy Self Sufficient Street Lamp – Eusus

EUSUS – energy self-sufficient street lamp for its battery power exploits two types of renewable energy sources at the same time: it consists of a pole, on which is thin film photovoltaic (PV) module, at the top there is a smaller wind turbine. Both RES produce energy for the battery, which is located in the foundation, from where the LED lamp is powered.

EUSUS lamp is still in the development stage. Despite to that, in Velenje are already 14 of such lamps, of which 12 are upgraded with an additional PV module that improves the autonomy of operation. At this stage the individual EUSUS is capable of powering an additional 5 street lamps (power of 35 W) what additionally improves the overall economics of the lamp. A big advantage of EUSUS is the use of passive infrared movement sensors, which recognize the moving persons and objects and react to changes of heat (infrared technology) up to a distance of 10 m. Energy savings are up to 80 %.

ESUS, source: [www.esus.si](http://www.esus.si)

Lamps have the advantage that they are completely independent of the infrastructure of electrical installation and are suitable in areas where there is no installation or is not economically and technically expedient to build one. The entire lamp was developed and made in Slovenia and it is suitable for the layout anywhere. The first two lamps were installed in October 2012, near the TRC Jezero in Velenje, within the European project MOVE, coordinated by the Local Energy Agency KSENA. The supplier of the lamps was company SCR from Velenje, which patented the lamps. The following lamps were funded by Municipality of Velenje and were installed in the Solar park and near the lake Škale. They are also charging five nearby LED street lights. ESUS lights are suitable for lighting footpaths, crosswalks, recreational trails in the countryside, near lakes or near sea. They are also suitable in the mountains wherever there are windy areas.



For more information visit: <http://www.esus.si/>





## Bologna, a collective approach to SEAP

Bologna is a medium sized Italian city which approved its SEAP quite recently (may 2012) after an intense involvement process of local stakeholders who now act as a team for its implementation. CAAB, the agri-food market realized on its roofs one of the biggest photovoltaic plants of Europe, more than 70.000 m<sup>2</sup> of panels, an equivalent of approximately 10 football fields.

The society managing Corticella district heating network, serving more than 900 families, has switched from oil to natural gas, realized a CHP plant and will intervene directly on served buildings to rationalize and reduce consumptions.



The municipality itself has renewed the public lighting management contract and will substitute most lamps in the next few years. An intense communication plan has been set up, with the help of local Urban Center in order to widen the partnership on SEAP actions and make everybody aware of what we called “the energy turning”. More information: [www.paes.bo.it](http://www.paes.bo.it)

## Energy Use in Public Buildings – Municipality of Jesenice

In 2013 the Municipality of Jesenice received an application of interest from Eltec Petrol d.d. for implementation of public-private partnership for a project "Contract providing savings in energy use in public buildings of the Municipality of Jesenice", the subject of which is the construction and technological energy rehabilitation of buildings and the introduction of energy management in buildings owned by the Municipality of Jesenice.

The Municipality of Jesenice, as a public partner, has allowed the private partner, Eltec petrol d.d., to carry out construction and technology investment measures to achieve savings in energy usage and costs to the extent and for the period of 10 years, the private partner took over the obligation to carry out all investment measures including all necessary documentation. With the actual implementation of planned measures, introduction of energy accounting and managing with maintenance of energy facilities the private partner will reach the contract planned savings, Municipality of Jesenice assumes the obligation to cover costs of energy supply and the costs of the contract included services, but only in the amount of current energy supply costs individual involved objects reduced by 1%. This means that all investments in improving the energy efficiency of buildings will be paid upon the expense of the savings in contractual period of 10 years.





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In recent years, the Municipality of Jesenice ensured the production of energy audits of buildings for four public buildings, on the basis of which they identify energy- inefficient places and suggest options for renewal or proposed measures for improving energy use in buildings. Even with simple measures, effective work organization and appropriate awareness of building users can achieve a significant reduction in energy consumption.

The introduction of energy accounting is one of the most important basic measures, which lead to tangible information about the actual energy use and associated costs. Primary schools in the Municipality of Jesenice and Town Hall were included in the energy accounting in 2012. Over the next two years all other facilities owned and operated by the Municipality of Jesenice will be include in energy accounting.

### 2| UPCOMING EVENTS

#### Local Renewables 2014

22 - 24 October 2014, Freiburg im Breisgau and Lörrach, Germany

To comprehensively tackle the ongoing economic crisis, growing energy instability and increased resource scarcity a shift to more sustainable economies is urgently required. The 6th Local Renewables Conference, set to take place in Freiburg im Breisgau and Lörrach (Germany), will explore the key role of local governments in this transition, and explore ways to improve renewable energy use and energy efficiency.



Cities are increasingly looking to make the best use of their regions' available resources, and are moving beyond consumption to replenishment and production of energy. Questions remain on how to effectively steer and facilitate this transition. Local Renewables 2014 will examine the tools and integrated approaches necessary to efficiently exploit energy opportunities, as well as looking at the potential for local job creation. The conference is specifically tailored to be of benefit to local government leaders.

For more information [go to the event website](#).

For more upcoming Covenant CapaCITY events visit our [event calendar](#)

