

# **Danish EcoCities: Six Cutting-Edge Climate and Energy Cities**

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## **ABSTRACT**

Climate and energy issues have become key challenges for Danish local authorities. As a local actor the local authority can inspire its business community and citizens. The Danish EcoCity award has been developed in order to acknowledge cutting-edge cities and to inspire other local authorities to make increased efforts in the field of climate and energy. The motto for the EcoCities initiative is “The challenges may be global, but the solutions must be found locally”.

In October 2008 and April 2009, the Danish Ministry of Climate and Energy designated six official EcoCities: The municipalities of Skive, Kolding, Copenhagen, Aarhus, Herning and Albertslund. The initiative was initiated by the Danish Minister for Climate and Energy and was warmly welcomed among local authorities. The selection of the EcoCities was based upon a comprehensive evaluation of the cities’ total efforts, both with respect to existing solutions and future planning. A partnership between the Danish Energy Agency and the EcoCities has been established in order to promote the EcoCities.

## **Introduction**

This paper describes the Danish EcoCities project, its aims and results as well as future perspectives. Special attention is paid to the EcoCities’ existing solutions and strategic energy and climate plans, and to what has been done in order to disseminate results. This is exemplified by concrete climate activities from the Municipality of Albertslund focusing on a holistic approach to the common challenge.

## **Background and History**

### **Birth of the EcoCity Concept**

Denmark has six official EcoCities: The municipalities of Kolding, Skive, Copenhagen, Herning, Aarhus and Albertslund. The Danish EcoCity project is vested in the Ministry of Climate and Energy assisted by the Danish Energy Agency, which is responsible for practical project implementation.

In early spring of 2008, then Minister for Climate and Energy, Connie Hedegaard (now European Union Commissioner for Climate Action), launched the idea of developing a new scheme addressing Danish local authorities and highlighting local action in the field of climate and energy. In order to increase the effort to save energy and reduce CO<sub>2</sub>-emissions the Minister wanted to acknowledge Danish cutting-edge cities and municipalities and to pinpoint the importance of local action. The idea was to highlight what could be done under existing framework conditions at a municipal level and form a new partnership between national and local authorities. With its focus on energy efficiency and climate the EcoCity Concept addresses one of the three dimensions of sustainability, namely the environmental dimension.

## Development of the Danish EcoCity Concept

In May 2008 the Minister invited several local authorities, Danish Regions and other stakeholders to a dialogue meeting in the Danish Energy Agency. The Minister wanted to clarify whether a ministerial EcoCity initiative would find interest among local authorities. Also, input for further concept development was on the agenda. The local authorities were very positive towards the idea and therefore it was decided to pursue the project.

A detailed EcoCity concept was developed and a special jury was established to assist the Minister in the selection of the EcoCities, and on October 8, 2008, the first three EcoCities were appointed by the Minister. The EcoCity Concept was developed on the basis of a mapping of selected Danish and international energy and climate concepts in order to obtain synergy with relevant initiatives and to clarify what a new concept should contain to be cutting edge in Denmark (DEA 2008 a).

**Table 1. Mapping of Relevant Energy and Climate Concepts (April 2008)**

<b>Concept and targets group</b>	<b>Commitments and criteria for selection</b>	<b>Start</b>
Climate Alliance, Local Authorities in the EU	Reduction of CO <sub>2</sub> -emissions by 10% every fifth year and halve the emissions before 2030 (1990).	1990
Cool Cities, Cities in USA	Reduction of CO <sub>2</sub> -emissions by 9% in 2012 compared to 1990-level	2005
Covenant of Mayors, Cities/local Authorities	Reduction of CO <sub>2</sub> -emissions by more than 20% (1990) through a sustainable energy action plan	2008
Green Capital Award, Capitals/big cities in EU	Applicants to be awarded on basis of a number of indicators	2009
Climate Communities, Danish Local Authorities	Reduction of CO <sub>2</sub> -emissions by at least 2 % per year	2007
Renewable Energy Sources Island, Danish islands	Applicant islands committed to become 100 % RES energy self-sufficient	1997
CONCERTO programme, Local areas in EU	Energy Efficiency in buildings, increased use of RES, training, etc	2004
Curve Breaker Agreement, Organisations in Denmark	Commitment to set a fixed target for saving electricity, for example 2 % per year	2007
Aalborg Commitments, Local authorities in Europe	Commitments to make efforts within ten areas related to sustainability	2004
Green Cities, Local Danish Authorities	Commitments to make efforts within 7 areas related to sustainability	2000
One Ton Less, Danish individuals and organisations	Message: We must all take responsibility and reduce our personal CO <sub>2</sub> -reductions	2007

Source: Danish Energy Agency 2008.

## **Purpose of the EcoCities Project**

The global challenges in the climate and energy field are enormous: CO<sub>2</sub>-emissions are increasing and energy consumption is too high. Therefore, to bring about lasting climate and energy improvements action is required at local level. And this is to be encouraged through the EcoCities initiative.

The goal of the Danish EcoCities project is to inspire other local authorities, citizens, the business community, and other stakeholders to make increased efforts in the field of climate and energy. This should be achieved by sharing know-how and experience acquired by the EcoCities. By highlighting good and concrete examples, the aim is that the EcoCities will inspire other cities to implement similar initiatives. Moreover, the EcoCities initiative must result in real energy savings and CO<sub>2</sub>- reductions and therefore contributes to fulfilling the global and national energy and climate goals.

## **Danish Climate and Energy Policy Goals**

The Danish Government's long term vision is a Danish society independent of fossil fuels (DEA 2010a).

The overall Danish energy policy has three focus points: Security of supply, climate impact, and cost effectiveness. Energy efficiency and renewable energy are important components and contribute to limiting energy consumption and CO<sub>2</sub> emissions. Denmark needs to spend less energy in the housing sector, enterprises need to be more energy-efficient; and special efforts are needed to aim at public institutions' ambitious goals for energy-saving initiatives (MCE 2008). In the shorter run, Denmark has committed to meeting a binding target for reducing greenhouse gases. By 2020, Denmark must have reduced greenhouse gas emissions from Danish non-ETS sectors (non-emission trading scheme sectors) by 20% relative to 2005 (MCE 2010 a, b).

## **Criteria and Selection of Cities**

Denmark has a total of 98 municipalities; of these a total of 18 municipalities, corresponding to one third of Denmark's population, applied in the application rounds. A special EcoCity jury was appointed to assist the Minister for Climate and Energy in the selection of the EcoCities. Chairwoman of the jury was Lykke Friis, who in 2009 succeeded Connie Hedegaard as Minister for Climate and Energy.

## **Award Criteria**

The quality of the EcoCity title is guaranteed through a number of criteria and requirements set up in the application terms. Furthermore, application terms contain a number of focus areas under which applicants have been evaluated. In their application, the local authorities had to answer a number of questions and describe their efforts in general (DEA 2008 b). In order to win the EcoCity title a local authority must document compliance with the following ten requirements:

- 1) Having worked ambitiously with reductions in energy consumption and CO<sub>2</sub>-emissions for several years and being able to document significant, quantifiable results. Furthermore, having surveyed CO<sub>2</sub>-emissions as a minimum covering the local authority as an enterprise.
- 2) Having objectives and plans for reductions in CO<sub>2</sub>-emissions and implementation of energy savings. Objectives must be formulated in a way that continuous improvements are ensured.
- 3) Having implemented and planned initiatives involving citizens and local communities in the energy and climate work.
- 4) Having entered a Curve Breaking Agreement with the Danish Centre for Energy Savings – or working on such agreement. (CFE 2010).<sup>1</sup>
- 5) Having entered a Climate Community agreement with the Danish Society for Nature Conservation or having, if winning the EcoCities title, entered such agreement within one year (DN 2010).<sup>2</sup>
- 6) Having started efforts to reduce energy consumption and CO<sub>2</sub>-emissions from own buildings and having set up concrete objectives in this field.
- 7) Having worked on planning in view of improving the local situation in the field of energy and climate, for example within heat planning.<sup>3</sup> (DEA 2000). The local authority must furthermore have set up concrete energy requirements for new residential areas or buildings in the municipality and/or specific districts.
- 8) Having adopted concrete objectives and implemented or planned initiatives in view of reducing energy consumption in the transport sector and/or CO<sub>2</sub>- emissions from the municipality's own transport or another well defined segment of the transport sector.
- 9) Having included climate adaptation measures in municipal planning.
- 10) Having presented a plan for how to disseminate experience to other local authorities and committed to implementation of this plan.

In addition, local authorities having applied for the EcoCity title have been evaluated on their efforts, objectives, and plans under the following five focus areas:

- Implementation of a sustainable and holistic energy system (energy system which is reasonable in terms of energy efficiency and economy, in other words based on a high rate of local and renewable energy resources and optimally adapted to a coherent energy system, locally as well as nationally).
- Buildings: focused efforts to reduce energy consumption and CO<sub>2</sub>-emissions from buildings located in the municipality, in particular municipal buildings (for instance

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<sup>1</sup> The Curve Breaking Agreement sets a fixed target for electricity savings every year.

<sup>2</sup> Danish municipalities with a Climate Community agreement commit to reducing their carbon footprint by at least 2 per cent annually. The Danish campaign has taken inspiration from the American "Cool Cities" project initiated by the Sierra Club.

<sup>3</sup> The local authorities are key players in the public heat supply. They develop heating plans and have responsibility for expanding district heating and for implementing any changes made necessary by amendments to the regulations in the Law on Heat Supply.

implementation of profitable energy saving measures identified by energy labelling of municipal buildings).<sup>4</sup>

- Development of innovative solutions (development of new and, in Danish/international context, relatively untested technologies or concepts).
- Reduction of transport sector's contribution to CO<sub>2</sub>-emissions (may cover, for instance, urban and traffic planning prioritizing public transport and biking over private cars).
- Implementation of other climate and energy measures (energy and climate initiatives within waste management, industry, agriculture, forestry etc.).

## **Selection of the EcoCities**

Through their applications the winning EcoCities demonstrated full compliance with the award criteria and extraordinary energy reductions. But most of all the selection of the EcoCities was based on a comprehensive evaluation of the cities' total efforts with respect to existing solutions and future planning. The EcoCities demonstrate how to work locally with climate and energy challenges and by being an inspiring example to other local communities, citizens and businesses by communicating energy and climate solutions.

The six EcoCities work with holistic plans incorporating climate and energy solutions into all significant policy areas. The EcoCities have adopted ambitious targets for future reduction of energy consumption and CO<sub>2</sub>-emissions as well as a plan for how to meet these targets in the municipality. Plans contain a survey and continuous registration of the municipal energy consumption and CO<sub>2</sub>-emissions thus ensuring follow-up on their efforts. The EcoCities have chosen to work with many different solutions to meet the climate challenge. This is seen as a quality in itself, since their starting points are different and they consequently demonstrate a broad range of interesting and innovative solutions.

## **Marketing of the EcoCities as Role Models**

Marketing of the EcoCities is an integral part of the project and crucial to its success since other local authorities should be encouraged to make similar initiatives. After selection of the EcoCities the Danish Energy Agency and the EcoCities entered a partnership about marketing of the EcoCities by various marketing tools.

Under the partnership exhibition materials on the EcoCities have been produced (roll-ups, wall, films and brochures) (DEA 2009). The exhibition has been shown at various national and international conferences and shows during 2009, for example at the International Climate Conference of Local Government Denmark in June 2009 and the Danish Society for Nature Conservation's climate show in Copenhagen in December 2009. The EcoCities were also promoted at the COP15 meeting in Copenhagen in December 2009.

A website for the EcoCities in Danish and English has been established. This website is crucial to the project. Interested local authorities, citizens, businesses and others may on this site read about the EcoCities, which local authorities have been appointed, and what efforts they are making in the field of climate and energy. Furthermore, the website is an important contact point between the EcoCities and various stakeholders. The website also shows a film about the

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<sup>4</sup> The energy label should visualize the energy consumption of the building on a scale that spans from A to G. The label includes proposals for energy saving measures that the local authorities have to implement when payback time for investments is less than five years.

EcoCities as well as a number of inspirational cases pushing other players into action. The site finally gives links to the EcoCities' own websites and other relevant links (EcoCities website 2010).

## **Results and Highlighted EcoCities Actions**

The EcoCities concept is first and foremost of interest in the form of a case study showing examples of how to comply with the EcoCity criteria and how to put focus on a number of energy and climate measures. What started out as statutory environment work under Agenda 21 has now found its replacement in the EcoCity concept.

### **From Agenda21 to Climate Action**

Local authorities in Denmark have a large number of diversified duties in society – tasks ranging from childcare to urban planning. In the field of the environment and climate primary tasks are management of natural resources, climate adaptation, environmental supervision, traffic planning, and energy supply.

The Agenda21 work arose out of the UN conferences on environment and climate and after the UN conference on environment and development in 2000 it became a statutory obligation for local authorities to set up a local Agenda21 plan of action (Ministry of the Environment 2010) In this way the UN objective of local anchorage of environment work was implemented in Danish local authorities and the environmental approach was anchored locally with authorities, citizens, and businesses.

But legislation alone does not do the trick. When it comes to municipal climate efforts today they are extensively based on a holistic view on local players' role in relation to global climate efforts. Local climate commitment feeds on anchorage and not least on the fact that this work entails challenges that – if addressed smartly – can be turned into opportunities for Danish local authorities and cities in the future.

In 2008 Local Government Denmark (interest group and member authority of the 98 Danish municipalities) made a survey of municipal climate efforts demonstrating that most local authorities have addressed the climate challenge and are working with CO<sub>2</sub>-reductions and climate adaptation. 91 % of 93 interviewed local authorities are either working actively on climate efforts or have decided to do so. (Local Government in Denmark 2010).

In Danish local authorities and particularly in the EcoCities climate efforts are not regarded as stand-alone activities which must lead to energy savings and CO<sub>2</sub>-reductions in an isolated perspective. It is far more seen as part of the strategic development of municipalities and cities. Local initiatives will also play a decisive role in the future. Equally important, Danish local authorities can get a completely new role as co-developer of green solutions. The EcoCities are a fine example of such a role.

### **EcoCities Examples**

It is a common feature for all EcoCities that they have set up climate objectives; that they measure their climate efforts in green accounts<sup>5</sup>; and that they have clarified what is specific to

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<sup>5</sup> Environmental and natural resource accounting.

their city in the field of climate efforts and what energy and climate activities should be launched to make a real difference.

The strength of the six EcoCities is that they represent urban and rural municipalities – thus representing the entire spectrum of challenges and opportunities in the climate and energy field.

**City of Copenhagen.** By 2015 the City of Copenhagen aims to be the environment metropolis of the world. This is an ambitious goal and one that will make major demands in terms of climate and energy (City of Copenhagen 2010). Copenhagen, the Danish Capital, is well under way on the construction of bicycle bridges and kilometres of new bicycle paths, which will enable many more residents of Copenhagen to use bicycles rather than cars. And when it comes to climate friendly urban planning all development areas are being designated low energy areas in order to ensure minimal energy consumption in new buildings (EcoCities, Copenhagen. Website 2010).

**Kolding.** The Municipality of Kolding knows the importance of small areas for effort pooling up to major impacts. Public purchasing with a green profile reduces climate impacts significantly. As one of the largest and most important cities in Southern Denmark the Municipality of Kolding was one of the first cities to introduce green public procurement, in this way contributing to the European agenda in this field. In Kolding it is also possible to shop in green shops having set up objectives for resource consumption and waste generation: these are but a few of the initiatives aiming to reduce the City's CO<sub>2</sub>-emissions by 75 % before (EcoCities, Kolding. Website 2010).

**Skive.** "Sustainable intent for sustainable energy" – this is the motto of the Municipality of Skive aiming to be CO<sub>2</sub>-neutral by 2029 and exploiting fully its opportunity as a rural municipality to utilize alternative energy sources. Solar, wind and hydrogen power is the cornerstone of the local efforts aiming at energy-efficient municipal buildings. But efficient efforts must focus on citizens. Therefore, the Municipality of Skive is appointing climate ambassadors among its residents. They are trained to work as local experts in the field of climate and energy (EcoCities, Skive. Website 2010).

**Herning.** Most of us agree that renewable energy is the future, although challenges remain. Not least in regard to storing energy for later use when the sun is not shining or the wind is not blowing. This is where hydrogen comes into the picture, as this type of gas may well prove to offer one of the most efficient methods of storing renewable energy.

The Municipality of Herning is a frontrunner in the development of hydrogen technology for use in transport and heating. This is also why Herning has set a target of reduction in CO<sub>2</sub> and other greenhouse gases of 35 % before 2030 (EcoCities, Herning. Website 2010).

**City of Aarhus.** Zero carbon by 2030. This is the objective set up in the Municipality of Aarhus – the second largest city of Denmark, who has attacked the difficult task of dealing with the transport challenge. A novel project is a planned light rail, which is a modern version of former times' trams. The light rail will improve connections across the city and commuters will get a very fast and comfortable alternative to their private car (EcoCities, Aarhus. Website 2010).

**Table 2. Key Cases from the Six EcoCities**

	<b>Case 1</b>	<b>Case 2</b>	<b>Case 3</b>
Skive	Alternative sources of energy	Joint platform	Climate ambassadors and education
Kolding	Reducing energy consumption in buildings	Energy friendly purchasing	Green shops
Copenhagen	Bicycle paths	Energy friendly urban development	Traffic solutions
Aarhus	Innovative involvement of general public	Alternatives to the car	Climate Plan and innovative projects to make heat supply CO <sub>2</sub> neutral
Herning	Climate network	Hydrogen and passive house building	Climate friendly heating production
Albertslund	LED lighting of pathways	Concept for housing renovation	Red consumers

Source: EcoCities website 2010

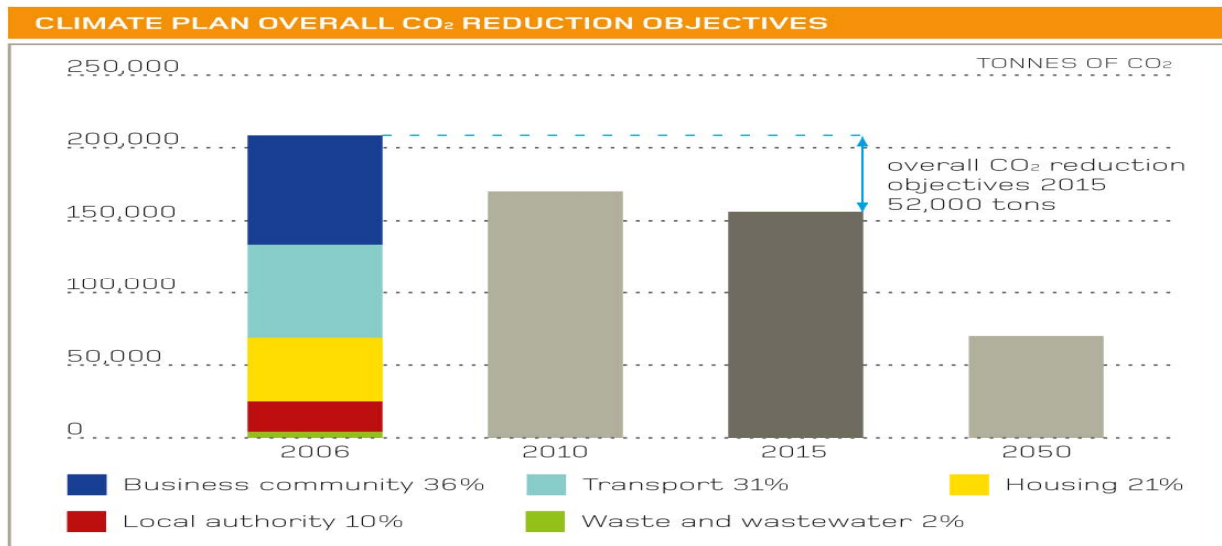
### **Albertslund – Climate Laboratory – A Holistic Climate Plan**

Albertslund is the smallest and youngest of the six EcoCities and was planned and constructed in the 1960s as an example of the experimental urban and traffic planning of that time. A sparsely populated area was transformed into a laboratory of urban development, democracy, and industrial building. The three key issues children, culture, and environment have in many ways been a red thread throughout all municipal activities. (Municipality of Albertslund 2010).

The Climate Plan 2009 – 2015 is a holistic plan for reduction of the city’s CO<sub>2</sub>- emissions by 25 per cent in 2015 compared to 2006, and contributing to the development of Albertslund into a sustainable city. The topics and activities of the Climate Plan give an indication of how to address climate challenges here and now and how it is possible to work with long-term objectives for CO<sub>2</sub>-reduction with the focus on developing a role as climate laboratory (Municipality of Albertslund 2009).



**Figure 1. Albertslund – CO2 Emissions from Sectors in 2006 and Climate Objectives**



Source: Municipality of Albertslund 2009.

### Climate and Housing - New Concept for Energy Efficient Housing Renovation

The Municipality of Albertslund is currently developing a new commercial concept that will pave the way for further low-energy housing renovation. The concept is intended to show how easily and cheaply low-energy renovation can actually be accomplished, and initial experience is promising.

In the coming years, the Municipality of Albertslund will face extensive renovation of its existing housing stock, which dates from the 1960s, 1970s and 1980s. In terms of energy consumption, the housing stock does not meet present-day standards and the local authority therefore wishes to ensure that the coming renovation is as energy efficient as possible.

However, the challenge is that today there is no commercial concept for energy efficient renovation. In 2008, the Municipality of Albertslund therefore decided to develop its own concept to show that low-energy renovation could be accomplished easily and cheaply when combined with prefabrication and quick installation.

**Pilot housing achieves cuts in energy consumption of 73 %.** Today the project is well under way. The local authority has started on the renovation of nine pilot housing units that are representative of the housing mass in need of renovation. This approach enables Albertslund to ensure that the final concept can be launched on a large scale. The expectations of the Albertslund Concept are high and initial results indicate that expectations might be met. In the two housing units where renovation has been completed energy consumption has been cut by no less than 73 %.

**Albertslund concept paving the way for reductions in CO<sub>2</sub> emissions.** In the Municipality of Albertslund, renovation of 16 social housing areas is either ongoing or in the planning stage. If, on the basis of the Albertslund concept, energy consumption in the housing areas concerned can be reduced to energy class 2, this will represent a reduction in CO<sub>2</sub>-emissions of 24 % or 3,700

tonnes <sup>6</sup>. And if the housing areas can be renovated to the extent that energy consumption is reduced to energy class 1, this will represent a reduction in CO<sub>2</sub>-emissions of 27 % or 4,400 tonnes.

### **Climate and Local Authority – Development of a New LED Street Lamp**

Street and footpath lighting accounts for substantial amounts of energy, especially in the Municipality of Albertslund where an extensive road system and outdated equipment result in CO<sub>2</sub> emissions of 900 tonnes a year. Consequently, in 2006 the Municipality of Albertslund implemented a project to develop a new lamp based on LED technology for use in public footpath lighting, the A Lamp. The result is a 50 % reduction in energy consumption and significant budget savings.

LED, or light-emitting diode, is not a new technology, although it has only been used to a limited extent for outdoor lighting. Yet light-emitting diodes offer a number of advantages compared to traditional incandescent light bulbs, such as reduced energy consumption and longer lifetime. Also, light-emitting diodes do not contain mercury, which is harmful to the environment.

The A Lamp will in the future be used in the city's parks, paths, and squares. Experience and results from the development of the A Lamp will form the basis for new energy-efficient lighting projects in Albertslund, complying as an active part of urban development to functional, architectural, and urban requirements in the new renovated city.

### **Future Perspectives of the EcoCity Project**

At the launch of the EcoCity project it was declared that two application rounds were to be conducted, in 2008 and 2009 respectively, and that project continuation hereafter was up for consideration, based on the experiences gained from project implementation. When considering the future of the project, attention has also been paid to related concepts and initiatives, including how to make synergy between concepts and how to use limited resources in the best way.

During second half of 2009 all six EcoCities project were promoted extensively – at local, national and international levels – and the EcoCities and the Danish Energy Agency got valuable feedback, both on the EcoCities and on the concept as such. Throughout 2010 promotion of the six EcoCities continues.

No external evaluation or scientific analyses regarding the Danish EcoCities project have been carried through, so far. It is our immediate observation that the EcoCity project has contributed to its overall objectives in the field of climate and energy, both by bringing climate and energy more into focus and also by inspiring other actors to increased efforts. Estimation of the effects of the EcoCities project would – incidentally - be rather difficult, due to the concept's complexity and the fact that its results to a large extent are derived effects, based on positive influence from the EcoCities, acting as role models.

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<sup>6</sup> The European Performance of Buildings Directive (2002/91/EC) are implemented in Danish building legislation with three levels of energy consumption per m<sup>2</sup>: The standard is 70 kWh/m<sup>2</sup>, Energy Class 2 with 50 kWh/m<sup>2</sup>, and Energy Class 1 with 30 kWh/m<sup>2</sup>.

Based on immediate observations it has been decided not to conduct further EcoCity application round in 2010. The concept has not been found suitable for further repetition, mainly because the value ascribed to the EcoCity title has a tendency to decrease by time and the number of titles given.

It is furthermore the observation that synergy has been established between the EcoCities project and related climate and energy initiatives. More than 60 local Danish authorities – out of 98 - are Climate Communities, having committed themselves to reducing CO<sub>2</sub>-emissions by at least 2 per cent per year, and the same number of local authorities has entered into Curve Breaking Agreements regarding electricity reduction. Also international concepts are of interest to Danish local authorities.

For example, sixteen Danish local authorities have signed EU Covenant of Mayor Agreements, thus committed to more ambitious CO<sub>2</sub> reductions than those of the EU, to be implemented by a Sustainable Energy Action Plan, a SEAP (EUCE, 2010).<sup>7</sup> This very strong involvement in other climate and energy related concepts has also been an argument for not making a third EcoCity application round. When the EcoCity initiative was launched in 2008, the above-mentioned related concepts were at their starting points. (DEA 2008 a)

The Danish Energy Agency and the EcoCities are discussing the future of the project in view of making a decision about its possible continuation before or during summer 2010. Depending on the discussions, a revised EcoCity project may continue within another framework.

## Summary and Conclusions

This paper describes the Danish EcoCities project, including background, contents, selection criteria and aims. It also presents a number of key cases from the six existing EcoCities, and goes more into detail with what has been done in the field of climate and energy in one of the EcoCities: Municipality of Albertslund. This paper is primarily a case study.

The main purpose of this paper is to inform about the EcoCity project, which in the view of the authors is unique, thanks to its broad focus on climate and energy issues at municipal level, both with regard to existing solutions *and* plans for the future.

The paper includes a preliminary conclusion regarding the results and effects of the Danish EcoCity project, namely that project has been successful so far and has contributed to saving energy and reducing CO<sub>2</sub> emissions. This conclusion is based on immediate observations. It should be noted that the authors - from the Danish Energy Agency and the Municipality of Albertslund - are active partners in the project, which may – unintentionally - affect the conclusions.

A systematic analysis of the project and its effects has not been carried out, but would be very welcome. Also, a critical study of the Danish EcoCity project and its effect compared with other climate and energy initiatives, addressing local authorities or cities, would be very interesting.

It is quite interesting that a number of such initiatives have been launched since 2007, and that the interest among local actors has been quite substantial, both in Denmark and in the EU. The increased focus on local action is an interesting subject for investigation, including an analysis of the interaction between local and national levels.

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<sup>7</sup> Very comprehensive guidelines on how to make a SEAP have been prepared by the EU.

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