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Please note that cities which applied for several awards are only listed once below.

	Austria, Vienna (Spittelau)	**District Cooling** Wien Energie Fernwärme built a 17 MW district cooling plant at the Spittelau waste to energy plant, including a new build district cooling network. The new facility came into operation in July 2009, and is now providing cooling for the customers. The special feature of the project is the use of existing resources to provide cooling services – by harnessing the power and heat generated by waste incineration. Due to the use of waste heat in absorption systems and the high efficiency of the central cooling plant, this approach delivers C02 savings of about 79% as compared to conventional building airconditioning systems. The cooling is delivered to customers via district cooling pipelines with only minor losses. The target is to implement up to 200 MW cooling till 2020.
	Denmark, Nyborg	**Modernization of a scheme by using industry surplus heat** The town of Nyborg is a middlesized Danish provincial town, with a population of approximately 17,000. Through decades the system has kept up with the growth of the community, managed to adjust the challenges of the global energy crises in the seventies and has during ongoing maintaining served the consumers with an economic and reliable heat supply. Through an establish co-operation between *"NFS A/S"* and two chemical plants located in the town of Nyborg, the district heating supply takes off the surplus of waste heat produced on the plants - enough to supply 87% of these provincial towns.
	Denmark, Lystrup	**Demonstration project** The Larch Garden - II project represents the first world-wide demonstration of a new concept of an efficient district heating system for low-energy buildings. The goal is to reduce district heating temperature delivered to consumers to 50°C. No reheating is applied - neither at consumer site nor at district heating site. For this project, two types of low-temperature district heating substations and new district heating twin pipes with reduced diameter were developed and tested. The project showed that DH can be used even in areas with low energy demand with good economy and high comfort level.

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Helsingin Energia	**Finland, Helsinki**	**District cooling and modernization** Helsingin Energia has the third largest and one of the most rapidly growing district cooling systems in Europe. It is not defined as cooling production but as heat delivery from the surplus to the demand instead. A new way of thinking has created new potential customers by developing new types of innovative district cooling products. Therefore, district cooling has generated larger savings potential and outstanding results for climate. Heat delivery from the surplus to the demand has been the way to avoid production that has been the key for significant primary energy and CO2 savings. Yearly primary energy supply has reduced nearly 100,000 MWh and CO2 emissions have lowered about 25,000 tons. District cooling has been the most significant single factor for lowered CO2 emissions in Helsinki city center area.
Turku Energia	**Finland, Turku**	**Use of waste to fuel district heating and cooling** The new wastewater treatment plant substituted for five old ones. The heat pump uses wastewater instead of pumping the water to the sea. The Kakola heat pump plant utilizes waste heat from treated wastewater and produces both district heating and cooling for public buildings and homes in Turku. Treatment plant deals over 100 000 m3 wastewater in 24 hours. The average temperature and hence also the energy content of the water varies according to the time of the year. The heat recovery is carried out after the wastewater treatment process prior to discharging the water through the drain pipe to the sea and at the meantime, the wastewater is still used for producing district cooling.

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	**France, Grenoble**	**Modernization of a scheme by switching from coal to wood pellets** The Grenoble urban area boasts a modern heating network, a local facility at the service of a sustainable energy policy, managed by the CCIAG. This urban heating network has progressed in 50 years from 0% to 54% of renewable or recovery energy (R&REn), while at the same time multiplying the heat distributed to its customers by 30. The recent conversion work to wood energy carried out on a boiler designed to burn coal from the mines of la Mure near the Grenoble basin is a new example of this capacity to upgrade a heating network. For an investment of 7 million euro, transformation of the Villeneuve plant currently enables more than 39,000 tons of recycled wood of local origin to be beneficiated replacing 15,000 tons of coal imported from South Africa.
	**France, Melun**	**Expansion of a scheme based on geothermal energy.** The STHAL network was created in 1969 to supply the northern quarters of Melun. At the time, using geothermal energy to power a heating network was a totally original idea. In fact, it was the first time geothermal energy had been used to power a heating network in France. Melun uses the same geothermal source for heating and for domestic hot water, which are supplied over separate networks. This system makes Melun a unique network, and it supplies 4,000 housing units and 2,000 equivalent housing units of public buildings. In most cases, heating and hot water are supplied over a common network and are separated at substations located outside the buildings they serve.

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	**France, Paris**	**District cooling scheme** The City of Paris has undertaken with its partners to reduce greenhouse gas emissions and energy consumption in its area by 25% between now and 2020. The Climate Plan also aims to increase the share of renewable energy in the city's energy consumption to 25%. The District Cooling System of Climespace is the largest in Europe, with a network of more than 140 km in length and 325 MW of installed cooling capacity serving nearly 500 customers. The cooling energy produced is used, for example, for the air conditioning of the Louvre Museum, preserving the works of art and ensuring the comfort of the millions of people who visit the museum each year. Since the end of the 1990's, Climespace has deployed a strategy based on energy efficiency. The construction of power plants cooled by the water from the River Seine, the use of renewable cold sources and fundamental changes in both the management and the operation of the facilities have enabled Climespace to substantially improve its performance between 2002 and 2010.
	**France, Val Maubuée**	**Modernization by switching to geothermal energy** The Val Maubuée heating network supplies 4,756 equivalent housing units in the municipalities of Lognes and Torcy in the Paris region. The installation of the geothermal plant alongside the existing boiler complex involved major drilling operations, including the sinking of a geothermal doublet. The improved network will deliver a number of benefits. The first benefit is environmental, for the adoption of geothermal energy will reduce CO2 emissions by around 9,000 tonnes per year, equivalent to 80% of the greenhouse gas emissions currently generated by fossil fuels. And the use of a renewable energy source will also result in a significant reduction in heating bills for subscribers - possibly as much as 30% depending on subscribed demand - while avoiding problems connected with fluctuations in fossil fuel prices.

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	**Germany, Berlin (Spandau)**	**District Heating expansion to save CO2** In the Berlin Climate Protection Agreement, Vattenfall and the State of Berlin are committed to a significant reduction of CO2 emissions. The expansion of District Heating is one component for reaching this target. Vattenfall Europe Wärme AG is constructing a new District Heating grid in the Berlin municipality of Spandau. Within 9 years approximately € 60 million will be invested. The construction began in spring of 2007. Within the period 121 MW will be connected to the District Heating network, the equivalent of 35,000 households. The heat will be generated using 93% environmentally friendly combined heat-power process. Each household connected to the grid reduces CO2 emission by about 1 ton p.a. Overall the emission of approximately 48,000 tons of CO2 will be avoided.
	**Germany, Rosenheim**	**Expansion of existing scheme** The described energy system of the public utility company is situated in the city of Rosenheim, a town in the German State of Bavaria with a population of approximately 60.000 inhabitants. Since the construction of the power plant in 1955 the SWRO operate a district heating network. The power plant was continuously expanded over the years and optimized in its efficiency. In 1963 a waste incineration was added to the power plant. To further increase the energy efficiency three gas engines with a total electricity output of 10 MW were installed in 2004. Two more gas engines are currently under construction. Since 2008 the district heating network is expanded largely with the aim to double the percentage of district heating by 2020.

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	Germany, Wurzburg	**Modernization by replacing coal by gas** Wuerzburg as a German Franconian citiy with more than 130,000 habitants and a University with more than 30,000 students has always emphasized the importance of a municipal energy solution. Hence a cogeneration plant was built in 1954 serving both electricity and heating. The choice of fuel was a coal due to the resource situation in that time. The most advanced and efficient technique back then was the use of steam as medium for heat transportation through the grid in the Wuerzburg inner city. With the liberalization of the energy market and the rising sensitivity for climate issues Wuerzburg has been seeking a sustainable opportunity modernizing the coal based cogeneration plant in 2003. The choice of technology for this modernization of the plant fell on a cogeneration based on gas.
	Italy, Ferrara	**Modernization work based on geothermal energy** Following the energy crisis of the 70's, the Municipality of Ferrara started up the "Geothermal Project", in order to develop the geothermal resource as a primary source for an urban heating system and reduce the environmental impact created by the traditional energy sources. Ever since the beginning, the project involved the use of other energy resources, as additional sources, typical of the area (especially the Waste – To – Energy plant), according to the principles of "Integrated Energy System".

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	**Italy, Milano**	**Expansion of existing network** The City of Milan has a population of about 1.300.000 inhabitants. District Heating service in Milan started in the early 90s, mainly based on heat production from WTE plants and from natural gas fuelled CHP plants (CCGT and CHP engines). The heat produced is fed to the buildings by means of several large district heating networks of which Canavese is the most recent one. At present these networks are separated but there is a program to interconnect them in the next few years to better optimize and develop the whole system. In the framework of general agreement between A2A Group and the Municipality of Milan it is under development a plan to strongly expand the district heating in Milan Municipality by mean of an increase in the thermal power and efficiency of existing production plants and a significant extension and integration of the heat distribution networks. Also, new production plants and district heating networks associated to them could be realized. The goal is to deliver the service, within year 2015, to more than 600.000 inhabitants equivalent and to increase at 1.200 MWt the thermal power installed at the condominium buildings.
	**Italy, Torino**	**Expansion of existing network** The district heating development project in the Torino's urban area began from the 1980 as determined in the strategic targets of Piedmont Region, Torino Provincial Administration and coherently with the Torino's Municipal Energetic Plan. During these 30 years, IREN Group has designed and built the "Torino Sud – Torino Centro" district heating network that, matched with the new project "Torino Nord", will provide district energy to more than 60% of the city and 560.000 inhabitants.

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	**Lithuania, Akmene region**	**Modernization of existing scheme** The district heating system with its constituent components that was leased in 2000 by Akmenės energija for modernization and optimization, counted from 30 to 40 years of operation and demonstrated extremely poor operation results such as the inefficiency of energy generation and huge technical losses in the system. The variety of fuel used, such as environmental polluting coal and crude oil were still used and did not correspond to the modern perception of efficient and sustainable energy production. The result of the investments into modernization of probably the oldest district heating network in Lithuania certify a number of key indicators, among which the decreased heat transmission losses from 45% in the beginning of modernization in 2000 down to 8,8 % this year, as well as savings of fuel and electricity in the production process.
	**Lithuania, Palanga**	**Modernization of a system by installing flue gas cleaning equipment** Through this project, Litesko installed some flue gas cleaning equipment to limit the pollution of solid particles from wood chips boilers. According to the Lithuanian environmental protection agency, this pollution is allowed to reach more than 400 mg/nm3. The decision to install flue gas recovering system comes from possibility to generate addition energy, solve the solid particle emissions problem and additionally reduce CO2, CO and NOx pollutions too.

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	**Netherlands, Amsterdam**	**District heating and cooling scheme** Amsterdam's district heating programme has begun in the early 1990's. In 2005, the Amsterdam City Council passed a resolution to expand district heating except where not feasible due to location specific considerations. This means that, in principle, all new construction projects are connected to the district heating system. The reduction in CO2 emissions amounts to 50% to 80%. The system is growing at a rate of around 4,000 consumers a year. In 2010, there were 50,000 consumers. The plan is to have 100,000 consumers in 2020. Further expansion is possible by connecting existing buildings. The City of Amsterdam and NUON are cooperating in a joint venture known as WPW (Westpoort Warmte) to further expand the district heating system. At the same time, NUON introduced a large-scale collective district cooling system. The deep lakes around Amsterdam are used as the source of cold. This system reduces CO2 emissions by 75% and avoids the use harmful cooling fluids. This system is only possible if the source (deep water) and the consumers (offices) are located close to each other. At the present time, two projects are in operation in Amsterdam's Zuidas and Amsterdam South-East.
	**Netherlands, Purmerend**	**Modernization making a scheme profitable** In 2007 the new company Stadsverwarming Purmerend B.V. took over the responsibilities of the district heating grid from the municipality in Purmerend, the Netherlands. With 25.000 customers (24.000 households and 1000 companies) it is the fourth largest grid of the Netherlands. District heating Purmerend started in 1980. A comprehensive business analysis performed by the new management in 2008 showed severe problems. In the present state the company would remain structurally loss giving, future heat delivery was not ensured, and sustainability and customer satisfaction were below benchmark standards. Fall 2009 a new business plan was presented that set course for a future proof company, based on sustainable, cost effective and 80-100% renewable heat.

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essent Zeewolde	**Netherlands, Zeewolde (Polderwijk)**	**New scheme using biogas** Farmers in the municipality operate 256 wind turbines and generate electricity with biogas plants in this young and rural municipality. The dairy farm of Gert Jan van Beek produces renewable electricity out of wind and biogas but also sells renewable heat for the Polderwijk, a new residential area in Zeewolde with nowadays some 1,000 houses and in 2020 some 3,000 houses. In a tender procedure the municipality gave in 2006 a concession for 30 years to the company who offered a climate neutral district energy concept at reasonable price. Essent Local Energy Solutions won the tender. The offer of Essent was based on cooperation with the dairy farm Van Beek in Zeewolde. Essent invests in a district heating grid and an energy station for the Polderwijk. Van Beek installed a 1.1 MW cogeneration unit at the energy station of the Polderwijk. Raw biogas is transported from the dairy farm to the Polderwijk over a distance of 5.5 kilometres. Essent buys the renewable heat from the farmer. The electricity is fed into the local grid of Zeewolde.
City of Oslo Hafslund	**Norway, Oslo**	The company Hafslund Fjernvarme is the largest district heating provider and system in Norway, with a concession for the city of Oslo, serving approximately 60000 unities in the residential sector and 1000 customers in the service sector. The programme of Hafslund, to accelerate the district heating in Oslo in accordance with local and national climate objectives, was launched in 2006. From 2006 to 2010, this was achieved for the city of Oslo: • A growth in district heating production of nearly 80 % from 1000 GWh tonearly 1800 GWh, with the goal to exceed 2 TWh before 2020 • More than 180 mill euros invested in district heating and cooling • All base load from renewable and recovered heat • Conversion of peak load from fossil natural gas and fuel oil, to bio pellets and bio oil, with the goal to decarbonise district heating in Oslo before 2016 • Reduced local air pollution by reduced use of fuel oil by 50 mill l/year and reduced NOx emissions corresponding to 60 000 cars making 15 000 km/year.

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Dalkia Poznań	**Poland, Poznan**	**Modernization of existing scheme** The city of Poznań and its residents access to an energy-efficient co-generational source of heat and hot water supply, having an additional positive influence on air quality in the city. The district heating system in Poznań has over 360,000 end users of heat, residents, public institutions, commerce, and industry. The program fits the comprehensive program of economic and social regeneration of these districts, announced and implemented by the city authorities. For Dalkia the program offers an opportunity to develop a network in a way that is independent of the new investments in the city, which was especially important in the last two years of crisis and halted construction projects. The city for its part benefit from the program of constructing and developing the district heating system in historical residential districts, heated previously by individual heat sources, often operating on hard coal, by a significant and evident reduction of "low emission", or air pollution from sources without monitoring devices cleaning exhausts.
Dalkia Tarnowskie Góry	**Poland, Tarnowskie Gory**	**Modernization of existing scheme** The district heating network has existed since 1976 as a part of Fabryka Zmechanizowanych Obudów Ścianowych FAZOS plant in Tarnowskie Góry. Since 1997, it has been a municipal company, privatised in 2003 by Praterm energy Group. As a result of Praterm's acquisition by Dalkia Polska in 2008, the system in Tarnowskie Góry has been managed by Dalkia in 100%, as the unique system owner. Since 2004, the system has been gradually modernised and developed. Dispersed sources of low emission in the form of municipal boiler houses have been gradually eliminated, along with individual energy sources, principally coal-fuelled, which were present in most buildings

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	Romania, Ploesti	**Modernization of existing scheme** The District Heating in Ploiesti is a municipal scheme which provides hot water and heating for 57 900 individual apartments (150 000 inhabitants), 71 public institutions and 753 private companies. Although the system was created approximately 40 years ago, it is the most efficient among similar systems in Romania, and it is recognized as such by local and central authorities and by the private sector of the economy. Main results obtained through these measures: • 30% less primary energy consumed in order for 1 Gcal to reach our end-users • >90% boiler performance during the heating system • 46% less CO2 emissions • 94% less SO2 emissions • 44.3% less NOx emissions • less than 14% losses on the networks more customers connected to the DH system
	Singapore	**New district cooling scheme** Marina Bay is a new business district on reclaimed land at the southern tip of Singapore. District cooling was identified in the mid 1990's as an urban utility suitable for the new business district to serve an estimated cooling load of 900MWr for 8,000,000m2 of the planned commercial floor space. An investor-owned district cooling system has been successfully implemented since May 2006. The system now comprises two plants. The two plants are harmoniously integrated as part of two large-scale commercial developments. They operate as an interconnected system with 5km of piping network installed in common services tunnels in the district.
	Spain, Barcelona	**Expansion of existing scheme** DISTRICLIMA was set up in 2002 to implement, for the first time in Spain, a district heating and cooling network for use in heating, air conditioning and sanitary hot water, and it is operating since 2004. The project was initially located in an urban remodelled area of Barcelona that includes the Cultures Forum 2004 (the Forum Area, at Besòs seafront). In 2005, after the awarding of a public tender, a second stage was started with the extension of the network to the 22@ technological district in Barcelona. Nowadays, Districlima is the biggest urban network in Spain.

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	Sweden, Enköping	**Modernization of existing scheme with bioenergy** In the early 1970s the town of Enköping in Sweden constructed a district heating system. The local government operated oil boilers to satisfy the heat demands. However, concerns regarding energy security. Bioenergy was suggested as presenting opportunities for development. *Enköpings Värmeverk* was started in 1972 by the local government and in 1979 woodchip boilers were constructed and experimentation with biofuels continued through the 1980s.
	Sweden, Falun	**Modernization of existing by increasing cogeneration** Västermalmsverket is a combined heat and power generation plant, which makes it unique due to simultaneous production of heat and electricity. By investing in an absorption cooling machine the use of electricity has been reduced in comparison with conventional cooling installations. At the same time the production of electricity at Västermalmsverket has been increased. Falun is now building a wood pellet factory which helps to produce more renewable electricity in summer when the heat needs is at its lowest.
	Sweden, Gothenburg	**Modernization of district heating scheme and development of district cooling** By the end of the 1970s, Gothenburg system had grown to encompass eight large "district heating islands" in Gothenburg. All power and heating plants were fed by oil-fired hot water stations. At this time, electricity prices were low and oil prices had reached record heights. The situation for district heating operations in Gothenburg was not economically sustainable. Göteborg Energi decided to make a change. The eight "district heating islands" were linked together, producing a connected network. The next major step was receiving large amounts of waste heat. Fuel efforts began in the early 2000s. Rya heating plant's hot water boiler was converted from natural gas to wood pellets in 2003. In addition to waste heat generated by electricity production in Gothenbiurg's plants, waste heat is recycled from two large refineries and from the region's waste incinerator at Renova. Waste heat recovery by Göteborg Energi's district heating network produces great environmental benefits. Today, nearly 80% of the city district heating is based on waste heat.

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ÖRESUNDS KRAFT HELSINGBORG	**Sweden, Helsingborg**	**Modernization by increasing the share of renewables in the primary energy mix** For the City of Helsingborg the main idea has been to create a sustainable energy system where household heating is using available excess heat in the city so as to reduce the use of primary energy. This strategy has been successful and today 78% of all residents are part of the district heating system. At the mean time CO2 emissions decreased. It was stated in the mid-nineties that a major change was necessary and a new programme was implemented, so far this resulted in: • 98% of heating production based on renewables. • The CO2 emissions in Helsingborg from the district heating system was reduced by 340 000 tonnes.
BORÅS ENERGI MILJÖ	**Sweden, Miljö**	**Modernization of existing scheme by using renewables** Falun would like to become a fossil fuel free city, in which it aim to convert the city's fossil energy sources to renewable sources in both the heating and transport sectors and to generate electricity sufficient to meet the city's needs from renewables. The city has elaborated a special recycling model which uses communal resources such as waste and transforming it into various benefits such as district heating, district cooling, biogas and electricity. Over the last years, Falun achieved: • the inauguration and commissioning of the city's new environmental symbol, the accumulator tank • the commissioning of a biomal installation • the reduction of flow temperatures in the district heating grid • the reduction of nitrogen oxides emissions

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	United Kingdoms, Birmingham	**New district heating scheme** The Birmingham District Energy Scheme was designed, built, financed and is operated by Cofely District Energy. The first phase, the Broad Street District Energy Scheme, supplies a range of buildings in the central business district and became operational in 2007, served by an energy centre attached to the International Conference Centre (ICC). The later phases of the scheme incorporate Aston University's main campus and the Birmingham Children's Hospital. The district energy scheme saves approximately 9,500 tonnes of carbon dioxide emissions each year, massively out-performing the emissions savings that would be expected to be achieved with individual action from the scheme's consumers. Importantly, rather than charging a green premium for supplies of low-carbon energy from the scheme, consumers benefit from reduced energy costs when compared with the all-in costs of conventional energy supplies. Estimated operational cost savings for the scheme's consumers are in excess of £300,000 per annum. In addition the scheme has significant strategic plans for expansion and will become a key feature in several of Birmingham's regeneration areas. Ultimately, each of the separate schemes will be linked together, creating a city centre wide thermal network with maximised operational efficiency.
	United Kingdoms, Lerwick	**Modernization of existing scheme based on waste to energy technology** The Lerwick District Heating Scheme serves the capital of Shetland. The local authority saw an opportunity to develop an energy recovery plant solving its waste problems whilst also providing an energy source under local control. The scheme started in 1998 during a period of falling oil prices and uncertainty. After a slow start the scheme started gaining a positive reputation and sold itself by word of mouth. Over the next 8 years the scheme expanded into new areas and could justify the addition of a thermal storage tank. It has become one of the largest schemes in the UK where district heating schemes are rare. By 2007 the waiting list and demand for heat had grown so large that no new applications were connected unless for social needs. The scheme is owned by Shetland Charitable Trust and operated by Shetland Heat Energy and Power (SHEAP), a company wholly owned by the Trust.

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VEOLIA ENERGY	**United States, Cambridge (MA)**	**Modernization of existing scheme** In 2005, Veolia Energy North America acquired a dying small-community district energy network in Cambridge, MA, which served world-class biotechnology leaders near the campus of the Massachusetts Institute of Technology (M.I.T.). The system is powered by the Kendall Station combined heat and power (CHP) plant owned by GenOn Energy, Inc. Veolia Energy installed a 14" pipe across the Charles River that enabled the export of "green" cogenerated steam. By displacing steam produced using natural gas and fuel oil with waste heat, Veolia Energy has reduced area emissions of carbon dioxide by 150,000 tons per year, which is the equivalent of removing nearly 25,000 vehicles from the streets of Boston each year. More than five years later, Veolia Energy's Cambridge network is thriving. Veolia Energy provides process steam to biotechnology customers, and one of these customers achieved LEED Platinum certification in part because of the environmental sustainability of the steam network.
SEATTLE STEAM CO. Sustainably Reliable	**United States, Seattle**	**Modernization of existing scheme by using biomass** In 2010, Seattle Steam began producing its steam using a biomass boiler that burns clean urban waste wood from local sources. The company will now be able to reduce CO2e emissions by about 45,000 tonnes annually. The biomass project is just the beginning of Seattle Steam's environmental initiatives. In conjunction with the City of Seattle and in partnership with a local energy services contractor, Seattle Steam implemented a program of energy-efficiency retrofits for customer buildings.