

Document 3.4

Options for Transposing Best Practice Support Schemes into National Legal Orders

According to the Ecoheat4EU project contract, this D3.4 report shall contain:

c) Based upon the information gathered in WP 2 (a) – (d) and the analytical tools provided in Task 3.1, this task concerns the applicability of the selected best-practice support measures to the market conditions of each target country. The analysis involves the matching of each country’s regulatory structures with the various support scheme alternatives. The analysis establishes which types of measures can be feasibly introduced to effectively address needs within the given circumstances of a country. This output specifically comprises 14 assessments on the options for transposing best practice support schemes into national legal orders.

In order to fully interpret the national inputs from the Ecoheat4EU enquiries, the following sections have been chosen in this report:

Introduction.....	2
12 examples of best practise support schemes.....	2
Assessments of the options for transposing best practice support schemes into national legal orders by country.....	3
Consolidation countries	4
Denmark.....	4
Finland	8
Sweden.....	12
Refurbishment countries	16
Croatia.....	16
Czech Republic	22
Lithuania	31
Romania	35
Expansion countries	39
France.....	39
Germany.....	46
Italy	51
Norway.....	54
New development countries.....	56
Ireland	56
Spain	62
United Kingdom.....	68

Introduction

This report contains an analysis of the Ecoheat4EU enquiries concerning best practise support measures related to district heating and cooling in 14 European countries. The original survey information was collected initially between October 2009 and March 2010. The analysis subsequently established the 12 most favoured best practice support measures. The task here is to examine the applicability of each of these measures for each of the 14 participant countries. This applicability analysis is based on an additional enquiry during September and October 2010. There follows an assessment for each country.

12 examples of best practise support schemes

The final ranking list of the 12 prioritised best practise support measures are presented in Table 1 as reported in document D3.3.

Table 1: Top 12 Best Practice Support Measures

	Top 12 support measures	Short description of the support measure
1	Planning - Heat planning and/or zoning	Strategic energy planning, probably at municipality level. May include encouraging or even enforcing particular energy solutions (zoning)
2	Support - Investment grant, DH distribution	Financial support for district heating pipes through provision of grant, probably from government, but other sources also possible
3	Planning - National energy policy	The framework within which relevant legislation, possibly including measures on this list, may be framed
4	Support - Operation support for CHP, incl FITs	Supporting CHP through regulatory means, one prominent example being by means of a Feed In Tariff
5	Support - Investment grant, DH connection	Financial support for connecting customers to existing mains network through provision of grant, probably from government, but other sources also possible
6	Burden - Carbon tax	Implementing a penalty on carbon emissions applicable to all energy systems (energy efficient approaches like DH would prosper)
7	Support - Favourable loans	Providing low interest loans to finance the capital cost of establishing, extending or refurbishing district heating
8	Support - Investment grant, CHP	Financial support for CHP through provision of grant, probably from government, but other sources also possible
9	Support - Tax deduction, DH	Implementing a tax benefit for district heating schemes
10	Planning - Building regulations	Using existing regulatory framework to encourage deployment, and in to ensure unnecessary barriers are removed
11	Support - Investment grant, renewables	Financial support for renewables through provision of grant, probably from government, but other sources also possible
12	Planning - Waste planning & landfill bans	Promoting in a strategic way disposal of waste, so that the energy can be recovered and put to use in district heating schemes

Assessments of the options for transposing best practice support schemes into national legal orders by country

This task asked all countries to consider the applicability of each of the 12 measures that were by consensus among the 14 participant countries considered the best. In particular several questions were posed for considering in relation to each measure:

- a. Check the selected measure's applicability to your country
- b. How would it fit into the national regulatory frame?
- c. Write down the barriers for the uptake on the measure in your country (if any)
- d. Name the relevant stakeholder(s) who would be responsible to bring the measure into effect
- e. What result would you expect if the measure was used in your country?

The answers submitted follow by country.

Consolidation countries

Denmark

<p>Top 12 support measures</p>	<p>Analysis for:</p> <ul style="list-style-type: none"> a. Applicability in the country? b. Fitness into the national regulatory frame? c. The barriers for the uptake on the measure in the country (if any)? d. Relevant stakeholder(s) who would be responsible to bring the measure into effect? e. Expected result if the measure is used in the country?
<p>Planning 1. Heat planning and/or zoning</p>	<p>The establishment of goals and objectives within the field of energy to be pursued during a future period has strong traditions in Denmark. Since the energy crises of the 70'ties, many plans have been made on the basis of - often - broad political agreement in the parliament and much has been realized. Planning for the use of energy use for building heating and hot tap water preparation was introduced as part of the response of the energy crises, and is therefore neither new nor controversial in Denmark. The only places heat planning is controversial is where it prevents consumers from switching to cheaper options. This is the case in a few small "bare field" district heating systems with high prizes, that maybe never should have been established, or in many gas areas, where cheaper district heating is often available nearby.</p> <p>Heat planning has been conducted for all areas deemed suitable for collective supply (district heating or natural gas), but not for rural areas, and plans have remained unchanged for a number of years. It is being considered to change the plans for existing areas to let district heating take over areas today supplied with natural gas. There is ongoing discussion on the possibility of planning for the use of district heating in new urban areas, as modern buildings use considerably less energy for heating than traditionally.</p> <p>Heat planning and/or zoning is absolutely applicable in Denmark, as it already exists, and many heat plans are under some form of update.</p>
<p>Support 2. Investment grant, DH distribution</p>	<p>Considering the dominance of district heating in heat supply in general and in cities in particular and also the economic attractiveness of it compared to other forms of heat supply, it is unlikely that there will be any new direct support for investments in district heating distribution systems.</p>

	<p>There is an outstanding financial question in connection with the possible extension of district heating coverage into areas presently supplied with individual natural gas. Not all gas distributors have recovered the investments made in establishing distribution systems in the 80'ties and 90'ties, and are demanding compensation for lost income if district heating takes over. District heating companies often refuse to pay compensation, as they believe gas companies have overinvested or been inefficient. Other district heating companies accept to pay compensation, as they themselves would have made a similar claim, had the situation been reverse, and because the expansion could be economically beneficial to the district heating systems anyhow.</p> <p>Government has stepped in, in an attempt resolve the issue, which at present blocks expansion of district heating into gas areas, which again is an element in the national energy policy. Insofar a solution to this is found, and it somehow provides funds from non-district heating sources to assist district heating in "buying out" gas companies from certain areas, then that would constitute a support for expansion of district heating networks. Apart from that, direct support is not applicable or generally needed.</p>
<p>Planning 3. National energy policy</p>	<p>The energy crises of the 70'ties and 80'ties gave impetus to a strong Danish energy policy. Circumstances were that district heating was a logical and important element in that policy, and that district heating already was well known and widespread. District heating has thus been one of the most important elements in national energy policy.</p> <p>Today energy and climate change are seen as inseparable. While focus of energy policy has changed from economy and security of supply to climate challenge, there is reason to believe that district heating will remain a cornerstone in the policy.</p> <p>Building cooling is still considered to unimportant an issue to warrant any attention in national energy policy.</p>
<p>Support 4. Operation support for CHP, incl feed-in-tariffs</p>	<p>Operation support for CHP as well as feed-in tariffs has been used to support the expansion of CHP through the 90'ties and into this century, but has now been scaled back considerably. As already the world leader in share of CHP in electricity production, support for expansion of CHP is not necessary. Expanding the share of CHP may not even be possible as a huge expansion of wind based power production is foreseen. Indeed the challenge may be to ensure that the increase in wind based electricity replaces condensing production before production in</p>

	CHP units.
Support 5. Investment grant, DH connection	There is presently a small support scheme for converting individual oil heated buildings to more climate friendly heating solutions. This also benefits district heating, mainly by speeding up conversions to district heating that would probably have taken place anyhow. In view of the already comfortable position of district heating - especially in areas designated to district heating – support for connection/conversion to district heating is not deemed necessary.
Burden 6. Carbon tax	A CO2 tax at the level of the expected future market price for emission allowances in ETS already applies. Adjustments to ETS after 2013 have been implemented. No significant competition issues for district heating in relation to non-ETS today or foreseen.
Support 7. Favourable loans	Applies through the possibility to have municipalities guarantee loans to district heating investments covered by the heat supply act. This ensures low interests. The district heating sector would like this scheme to be extended to investments in district cooling.
Support 8. Investment grant, CHP	CHP capacity is already considerable, and no expansion possible or foreseen. Investment support not applicable.
Support 9. Tax deduction, DH	Since district heating on average already is the cheapest heating option, further general incentives in the form of tax benefits are unlikely. Not applicable.
Planning 10. Building regulations	<p>Building regulation focuses on building energy consumption, and does not incorporate the primary energy consumption involved in the various solutions. In the case of building categorized as “low energy”, design district heating consumption can be multiplied with 0,8 when demonstrating compliance with cap on energy consumption. This rule is expected to be extended to cover all types of buildings from 2015.</p> <p>The main problem in association with the building regulation remains that the code does not operate with primary energy factors (PRFs) when dealing with energy consumption of buildings. This leads to sub-optimal energy solutions, and should be changed.</p>
Support 11. Investment grant, renewables	The main economic support for renewables in heat production is the absence of those energy taxes that are placed on fossil fuels. There is generally only investment support for development of new technologies.

	<p>Investment grants could be applicable for a small number of projects in emerging technologies such as small scale biomass CHP or biogas CHP, where potential operators hesitate until these technologies have proven themselves. Beyond this, the sector believes investments should be made on market terms.</p> <p>A similar issue is investments risks associated with geothermal energy for district heating. If all goes well, geothermal heat could be economically attractive in a number of cases, but the risk of a "dry" or complicated borehole leaves projects of that type outside the reach of many district heating operators. Some form of government involvement/risk sharing setup could facilitate faster development of this resource.</p>
<p>Planning 12. Waste planning & landfill bans</p>	<p>A waste policy has existed for many years, and generally ensures that land filling of household waste does not take place and (together with the heat planning system) ensures that waste incineration only occurs in connection with district heating - mostly as CHP. Some waste fractions are still land filled, but are maybe better suited for recycling than incineration.</p> <p>Main challenge is to ensure that partial liberalizations in waste policy does not lead to waste trafficking, which could make waste an unreliable fuel for district heating/CHP. This problem is made even more challenging by the fact that EU member states operate with different taxation levels on waste, thereby increasing incentives to transport waste. Harmonization of waste taxes could be desirable, but requires EU action.</p>

Finland

<p>Top 12 support measures</p>	<p>Analysis for:</p> <ul style="list-style-type: none"> a. Applicability in the country? b. Fitness into the national regulatory frame? c. The barriers for the uptake on the measure in the country (if any)? d. Relevant stakeholder(s) who would be responsible to bring the measure into effect? e. Expected result if the measure is used in the country?
<p>Planning 1. Heat planning and/or zoning</p>	<p>This support measure is applicable in Finland. Under the Land Use and Building Act – municipality planners can require the designed dwellings in the planned area to join the DH network, unless another environmentally friendly means of heating is available. This enables cooperation between DH companies and the municipality planners which is very important in terms of cost effectiveness. However, mandatory connections (despite the current quasi-mandatory regime) should be avoided.</p> <p>While not a barrier as such, mandatory connections can be seen as obstacles for competition and thus not healthy for the competitive environment. The implementation rests on the municipal authorities. So far the results of the legislation have been limited, due to the fact that it is still quite new. However, the benefits will certainly be seen in the future if more cooperation between the planners and the DH companies is promoted.</p>
<p>Support 2. Investment grant, DH distribution</p>	<p>The DH distribution network in Finland is already rather extensive and additional support for network expansions could result to inefficiency in economical terms. It would not fit the Finnish system. Therefore the applicability of this support mechanism is very limited. The relevant stakeholder would be the Ministry of Employment and the Economy.</p>
<p>Planning 3. National energy policy</p>	<p>This should be seen as one key policy instrument that would guarantee a healthy environment for DH in Finland. On the national level it should be a critical point of focus to not to create artificial obstacles for DH. This measure would fit the regulatory frame, however implementation and subsequent monitoring (that conflicting legislation will not be introduced) might be challenging.</p>

	<p>The implementation would be on the shoulders of the central government with a minor role for municipalities as well. The effects of this measure would help to guarantee healthy competitive environment for the DH sector in Finland, with no artificial barriers.</p>
<p>Support 4. Operation support for CHP, incl Feed-in-tariffs</p>	<p>With level playing field – if not too many barriers for DH exist (e.g. combined effect of ETS and heat production fuel tax in CHP plants), CHP is very competitive in Finland. Supporting CHP with Feed in Tariff for example would create rather perverse system of supporting and penalising mechanisms. This would definitely distort the competition even further. This would not fit the Finnish system at all. In terms of barriers, what hasn't been mentioned above, this would be seen as an unfair competitive edge for CHP and would lead to supporting inefficient plants. This mechanism would be a political dead-end.</p>
<p>Support 5. Investment grant, DH connection</p>	<p>This support mechanism could be very effective especially in cases where ageing/broken heating system has to be changed (or for another similar reason). This investment grant would lower the barrier of relatively high connection cost for those potential customers. This measure could possibly be incorporated into the existing regulatory frame. Potential barriers are: insufficient funding (as this would probably take the shape of government grant), there should be clear evidence that the grants would lead to emission savings or improved levels of small particle emissions etc. in order to gain wide support. This would fall down to the Ministry of Employment and the Economy to implement.</p>
<p>Burden 6. Carbon tax</p>	<p>Taxes based on the emissions of fuels already exist with the exception of natural gas (50 % 'discount') and peat (which is not taxed). While taxes in the ETS sector are conflicting policy tools and should be discarded, carbon tax would benefit the DH sector if it was directed to the non-ETS sector alone. This would generate more level playing field for different forms of heat on the basis of emissions. In technical terms, no real barriers for such mechanism exist. The political situation does not seem to be in favour of such measure. All taxation issues have to go through the parliament.</p>
<p>Support 7. Favourable loans</p>	<p>This support tool would very likely not have much impact on the DH sector since it's very difficult to make loans much more favourable than the existing market based loans. DH sector is very mature and the actors within it (mostly owned by the municipalities) are very low risk targets with plenty of equity, thus</p>

	defaulting is not really perceivable. While implementation of the measure should not be too difficult, the expected gains would not be very significant. This measure would be implemented by the Ministry of Employment and Economy and the State Treasury.
Support 8. Investment grant, CHP	Investment grants can be very cost-effective support mechanisms and would have a very positive impact on investment decisions in Finland. Economics always has to be taken into consideration in each case however. Investments in CHP plants have been quite numerous during the past ten years as CHP has been considered profitable investment. Apart from CHP-plants that use biomass as a fuel (which already get investment grants), the situation is as it stands. Investment grants seem quite unlikely for the sector as a whole despite the fact that there aren't any legal barriers. This measure would be handled by the Ministry of Economy and Employment. If implemented this measure would likely increase investments in CHP plants, especially in areas where, in the current atmosphere, investments are stalling.
Support 9. Tax deduction, DH	Taxation should be as simple as possible – the less exceptions the better. In other words, this policy tool is not seen as a viable option.
Planning 10. Building regulations	Building regulations could be very effective means of promoting DH in Finland and it could be introduced in Finland with relative ease as a part of the current batch of regulations – on a level playing field, based on primary energy assessments. However, e.g. electric heating in DH dwellings should be prevented. Perceivable barriers for improved building regulations do not really exist, other than DH not being very high on the political agenda. This piece of regulation would be prepared by the Ministry of Environment and be implemented by municipal authorities. The result of this policy instrument would enable DH with more favourable competitive environment.
Support 11. Investment grant, renewables	There are a plethora of measures already in place or under preparation that either support renewables or penalise fossil fuels. These instruments tend to take more market based approach and within this context direct investment grants do not seem very suitable addition for the existing system. In addition, this could be very expensive and thus lead to possible lack of long term commitment from the financier's side. While there aren't any legal obstacles for this measure, this does not seem viable option in the current situation, where renewables are supported anyway. Investment grants are generally administered by the Ministry of

	<p>Employment and the Economy. The impact of direct investment grants would probably be rather limited for CHP and could result more biomass be taken from other industries, such as the paper and pulp industry. If this scenario would realise, it would face severe criticism and opposition.</p>
<p>Planning 12. Waste planning & landfill bans</p>	<p>This instrument (especially landfill bans) would definitely promote the use of waste in CHP plants. Waste planning would not require much attention if landfill bans with thoroughly thought out means could be implemented. Markets would take care of distribution, recovery etc. However, it requires quite a lot of work in terms of getting past the legislative jungle of waste incineration. Permissions for waste incineration plants are often very difficult to get and this barrier definitely slows down the implementation of the measure. These measures would be prepared by the Ministry of Environment. The result of the combined work of markets and functioning legislation would increase the use of waste fuel in DH system.</p>

Sweden

<p>Top 12 support measures</p>	<p>Analysis for:</p> <ul style="list-style-type: none"> a. Applicability in the country? b. Fitness into the national regulatory frame? c. The barriers for the uptake on the measure in the country (if any)? d. Relevant stakeholder(s) who would be responsible to bring the measure into effect? e. Expected result if the measure is used in the country?
<p>Planning 1. Heat planning and/or zoning</p>	<p>Planning has been a very important part of establishment and introduction of district heating in Sweden. After 60 years of district heating expansion and new development is strictly market based. However strong forces are asking for TPA and separation of production and distribution. In such a case in order not to stop the development of DH some kind of planning and zoning will be necessary not to stop the development. District heating on the free heat market do not need planning from the municipalities.</p>
<p>Support 2. Investment grant, DH distribution</p>	<p>Investment grant has been used in the Swedish DH –system. It has been used for connecting new areas to the main system in the cities. This can come back in order to use more industrial surplus heat in the systems. The sources of surplus heat are most likely far from the existing DH systems in the core of the cities. In order to connect these to the net it is sometimes necessary to get some support. Investments grant is one way, low interest loans is another.</p>
<p>Planning 3. National energy policy</p>	<p>The oil crises of the 70'ties were the start of a long term Swedish energy policy. District heating has since been a very important tool in this policy. In 1980 the oil dependency was strong and several program started to replace oil ending in the introduction of Carbon tax in 1991.</p> <p>The tax has since been the main tool to develop the energy system and the district heating industry has been very successful to reduce the GHG emission over the years.</p> <p>Without long term national energy policy covering all sectors heating, power, industry and transport development towards a sustainable society it is unlikely to succeed to reach a sustainable energy system.</p>
<p>Support</p>	<p>Sweden has introduced the green certificate for renewable</p>

<p>4. Operation support for CHP, incl Feed-in-tariffs</p>	<p>electricity including CHP on biomass. The certificates also cover wind, hydro and sun as well as non CHP-electricity from biomass. This has increased the investments in biomass CHP and also increased the production of renewable electricity from biomass CHP. The system can be considered as long term, which is very important when investments is involved. The system covers investments done up to 2016. New investments are eligible for certificates in 15 years after the first year of production. The price for the certificates is set on the market. The system has been more successful for supporting new biomass CHP compared to earlier investment grant used during 1990ties.</p>
<p>Support 5. Investment grant, DH connection</p>	<p>There is no support and has never been for connecting district heating. However it has been support to exchange direct electric heating or oil boilers in one family houses. In this support system the cost for new heating system was granted. Eligible new systems were heat pumps, pellet boilers and district heating. The grants were 30 % of the cost and hence the most expensive new system was favored.</p>
<p>Burden 6. Carbon tax</p>	<p>A CO2 tax was introduced in 1991 and the level is now corresponding to 100 euro/ton. The tax has a large advantage, towards non-fossil energy, compared to the EU-ETS and grants for renewable. The tax gives the market full freedom to choose any non-fossil energy source including surplus heat from industry and energy from waste. It also has low cost for administration. The price for emitting fossil CO2 is known. By slowly increasing the tax the targets is reached.</p> <p>The disadvantage is the possibility for the government to increase the tax above the necessary levels for reaching the target.</p>
<p>Support 7. Favourable loans</p>	<p>In the past municipalities guaranteed the loans to district heating investments. Today this is not used in Sweden. The sector has asked for favourable loans for connecting nets to neighbouring nets or industry to district heating nets in order to decrease the risk in the investment. It is important to share the risk when more than one is involved in an investment project. This can be very difficult especially when it involves surplus heat from industry. The security of supply must be guaranteed even if the industry fails to deliver. Also the industry must be guaranteed a buyer over the years to come.</p>
<p>Support 8. Investment grant, CHP</p>	<p>Sweden has introduces the green certificate for renewable electricity including CHP on biomass. The certificates also cover wind, hydro and sun as well as non CHP-electricity from biomass. No investment support in sight. Investment grants have been used but the sector favours certificates.</p>

<p>Support 9. Tax deduction, DH</p>	<p>There is no tax deduction for district heating. DH is the only industrial sector who pays full energy tax and carbon tax. It is tax deduction for industry when they produce their own heat/steam. This deduction is transported to the district heating when they produce heat/steam for this kind of industry in order to create a level playing field.</p>
<p>Planning 10. Building regulations</p>	<p>Building regulation focuses on building energy consumption, and does not incorporate the primary energy consumption involved in the various solutions. In the case of building categorized as "low energy", design district heating consumption can be multiplied with 0.8 when demonstrating compliance with cap on energy consumption. This rule is expected to be extended to cover all types of buildings from 2015.</p> <p>The main problem in association with the building regulation remains that the code does not operate with primary energy factors (PRFs) when dealing with energy consumption of buildings. This leads to sub-optimal energy solutions, and should be changed.</p>
<p>Support 11. Investment grant, renewables</p>	<p>In the early 80ties investments grants for boilers for biomass and peat were used to introduce new technology in order to replace oil in the district heating systems. Since 1991 the support for renewable has been through the carbon tax on fossil fuel. Investment support is best suited for new technologies. The Swedish Government's support to Climate Investment Programmes, "Klimp", has been a successful tool for reaching the Swedish climate objective as formulated in the Swedish climate strategy in 2002. Klimp has enabled municipalities and other local actors to receive grants for long-term investments that reduce greenhouse gas emissions.</p> <p>The grants have been distributed five times by the Swedish Environmental Protection Agency between 2003 and 2008. The investments are estimated to reduce emissions by 1.1 million tons of carbon dioxide per year.</p> <p>Klimp works in three ways:</p> <ul style="list-style-type: none"> -The investments lead to reduced emissions of greenhouse gases. -The work on a climate investment programme strengthens local climate work and cooperation between various actors. -Collecting and disseminating knowledge and experience of climate investments encourages climate work in other parts of the country. <p>This program not dedicated for district heating has been very</p>

	fruitful for district heating because of the large impact of CO2 reduction per invested euro.
Planning 12. Waste planning & landfill bans	A waste policy has existed for many years in Sweden. This is almost as important as a national policy for sustainable energy. In Sweden the responsibility for municipal waste is placed on the municipalities. This fact has led to extensive use of waste to energy plant in order to solve two problems at the same time. Heating the city and taking care of the waste. The responsibility for the industrial waste is put upon the industry. A waste policy based on the waste hierarchy generates reused material, recycled material and recycled fuels.

Refurbishment countries

Croatia

<p>Top 12 support measures</p>	<p>Analysis for:</p> <ul style="list-style-type: none"> a. Applicability in the country? b. Fitness into the national regulatory frame? c. The barriers for the uptake on the measure in the country (if any)? d. Relevant stakeholder(s) who would be responsible to bring the measure into effect? e. Expected result if the measure is used in the country?
<p>Planning 1. Heat planning and/or zoning</p>	<ul style="list-style-type: none"> a. This measure is considered applicable. b. The basic regulatory framework exists and is laid down in Energy Law, Strategy of Energy Development and District heating Development Strategy. However it needs further development. c. Lack of funds; Implementation Program of the Energy Development Strategy is under preparation; delay in carrying out of phase 3/3 of the District heating Development Strategy (planning guidelines); lack of coordination between different institutions; d. Local and regional governments; Parliament; Government; Ministry of Economy, Labour and Entrepreneurship; e. The measure will create prerequisites for planning activities and introduction of district heating to new areas and the development of district heating schemes.
<p>Support 2. Investment grant, DH distribution</p>	<ul style="list-style-type: none"> a. This measure is considered applicable. b. There is no direct financial support for DH pipes from the government. However, certain investments can be financed through Environmental protection and Energy efficiency Fund activities as well as through grants from international financial institutions (WB, EBRD, KfW...). Also through existing loan programme, Croatian Bank for Reconstruction and Development offer opportunities for financing units of local and regional government, utility companies, companies and other legal entities for purposes of initial funding, land plots, buildings and equipment and devices. The importance of investment into DH distribution networks may be recognised through strategic energy documents. The regulatory framework for state subsidies is

	<p>established.</p> <ul style="list-style-type: none"> c. Lack of funds. d. Government; Ministry of Economy, Labour and Entrepreneurship; Croatian bank for Reconstruction and Development; Environmental protection and Energy efficiency Fund; DH companies; local governments; commercial banks; e. Development of district heating sector, new investments, reconstruction and improvement of existing facilities, introducing of new technologies etc.
<p>Planning 3. National energy policy</p>	<ul style="list-style-type: none"> a. This measure is already in force. b. Strategy of Energy Development (see http://ecoheat4.eu/en/Country-by-country-db/Croatia/Support-Measures-For-DHC/) on national level is the basic document that sets energy policy and energy development plans; it is passed by the Croatian Parliament on the proposal of the Government for a period of 10 years, in accordance with the Program of Physical Planning and Development Plan of Republic of Croatia. Implementation Program of the Energy Development Strategy determines the measures, carriers of activities and implementation dynamics of energy policy implementation, a way of co-operation with local and regional governments in the planning of the energy sector development and cooperation with energy companies and international organizations, prepared by Government for a minimum period of three years. c. Implementation Program of the Energy Development Strategy is under preparation. d. Parliament; Government; Ministry of Economy, Labour and Entrepreneurship e. Since district heating is set as one of the priorities of the energy policy, once the Implementation Program is in force, development and expansion of district heating sector may be expected.
<p>Support 4. Operation support for CHP, incl Feed-in-tariffs</p>	<ul style="list-style-type: none"> a. This measure is already in force, since the Feed In Tariffs are already provisioned for. The results, however, are not beneficial to the development of DH. b. The relevant regulation already exists but its improvement is necessary in order to have impact on district heating schemes. c. Criteria for the award of FIT, long procedures and numerous institutions involved (see http://ecoheat4.eu/en/Country-by-country-

	<p>db/Croatia/Implementation-of-EC-Directives/).</p> <p>d. Ministry of Economy, Labour and Entrepreneurship; Croatian Energy Regulatory Agency; Croatian Energy Market Operator;</p> <p>e. Development and expansion of CHP projects</p>
<p>Support 5. Investment grant, DH connection</p>	<p>a. This measure is considered applicable.</p> <p>b. There is no direct financial support for DH connection from the government. However, certain investments can be financed through Environmental protection and Energy efficiency Fund activities as well as through grants from international financial institutions (WB, EBRD, KfW...). Also through existing loan programme, Croatian Bank for Reconstruction and Development offers opportunities for financing units of local and regional government, utility companies, companies and other legal entities for purposes of initial funding, land plots, buildings and equipment and devices. The importance of investment into DH distribution networks may be recognised through strategic energy documents. The regulatory framework for state subsidies is established.</p> <p>c. Lack of funds</p> <p>d. Government; Ministry of Economy, Labour and Entrepreneurship; Croatian bank for Reconstruction and Development; Environmental protection and Energy efficiency Fund; DH companies; local governments</p> <p>e. Development and expansion of district heating sector.</p>
<p>Burden 6. Carbon tax</p>	<p>a. This measure is already in force.</p> <p>b. Regulatory framework is established. The measure supports development and introduction of energy efficient technologies within the district heating sector. However, this measure has unfavourable effect on the DH with regard to other competitive sources of heating.</p> <p>c. Ministry of Environmental Protection, Physical Planning and Construction;</p> <p>d. This measure is not considered to be effective in promoting district heating due to the specific situation on the Croatian heat market. Natural gas (individual gas boilers) is considered to be the main competitor to DH and it is not burdened by the Carbon tax.</p> <p>e.</p>
<p>Support 7. Favourable loans</p>	<p>a. This measure is already in force; however its application did not yet prove to have a significant impact on the district heating</p>

	<p>refurbishment or expansion.</p> <ul style="list-style-type: none"> b. Regulatory framework, primary and secondary, concerning the competence and functioning of Croatian Bank for Reconstruction and Development, Environmental protection and Energy efficiency Fund and other bank institutions are established. c. The importance and possibilities of district heating are not fully recognized; (see http://ecoheat4.eu/en/Country-by-country-db/Croatia/Support-Measures-For-DHC/). d. Environmental protection and Energy efficiency Fund; Croatian Bank for Reconstruction and Development; Government; Ministry of Economy, Labour and Entrepreneurship; Ministry of Finance; e. Development and expansion of district heating schemes
<p>Support 8. Investment grant, CHP</p>	<ul style="list-style-type: none"> a. This measure is considered applicable. b. Regulatory framework for encouraging of electricity production from CHP is established and implemented as well as regulatory framework for state subsidies. The national energy legislation emphasizes the importance of CHP. Currently there is no direct financial support through grants for CHP from government. However, through particular programmes and tenders, Croatian Bank for Reconstruction and Development and Environmental protection and Energy efficiency Fund finance CHP projects. Certain investments are financed through grants from international financial institutions (WB, EBRD, Kfw...). c. Lack of funds; d. Government; Ministry of Economy, Labour and Entrepreneurship; Croatian bank for Reconstruction and Development; Environmental protection and Energy efficiency Fund; e. Development of district heating sector, new investments, reconstruction and improvement of existing facilities, introducing of new technology, etc.
<p>Support 9. Tax deduction, DH</p>	<ul style="list-style-type: none"> a. The measure is considered theoretically applicable. b. There are already other tax deduction schemes present in the national tax code. Therefore, this scheme could also be implemented. c. A tax deduction scheme for a narrow group of beneficiaries will be difficult to justify. Furthermore, given the current financial situation in Croatia, it is very unlikely that the government has financial strength to support it. Overall, this measure does not seem to be a priority for

	<p>the country; therefore, it seems very unlikely it would be introduced in the near future.</p> <p>d. Ministry of Economy, Labour and Entrepreneurship would be the most likely authority to initiate the measure. Ministry of Finance is responsible for evaluating the impact of such scheme on the national budget. Final approval is given by the Government.</p> <p>e. On a general level it is difficult to say what would be the impact of this measure as it would depend on the exact details of the scheme.</p>
<p>Planning 10. Building regulations</p>	<p>a. This measure is considered applicable. It is partially already applied but with no impact on DH. As mentioned under http://ecoheat4.eu/en/Country-by-country-db/Croatia/Implementation-of-EC-Directives/ the legislative framework needs to be further developed.</p> <p>b. DH schemes are, generally mentioned in Technical regulation concerning energy economy and thermal protection in buildings as a recommended energy source if available. The legislation needs to be further developed.</p> <p>c. Lack of supportive legislative environment; insufficient promotion of successful examples. In the Study of applicability of alternative energy systems in buildings, DHC should be analysed (where available) considering energy, economy and environment savings; the study is still not in implementation.</p> <p>d. Ministry of Economy, Labour and Entrepreneurship; Ministry of Environmental Protection, Physical Planning and Construction; regional and local governments; Environmental protection and Energy efficiency Fund; DH companies</p> <p>e. Development of new DH schemes, reconstruction and improvement of existing facilities, development of decentralised networks, rational use of energy etc.</p>
<p>Support 11. Investment grant, renewables</p>	<p>a. This measure is considered applicable.</p> <p>b. Regulatory framework for encouraging of heat production from renewables is under preparation. The national strategic documents and energy legislation emphasize the importance of usage of renewables. There is no direct financial support through grants for RES from the government. However, through particular programmes and tenders, Croatian Bank for Reconstruction and Development and Environmental protection and Energy efficiency Fund provide</p>

	<p>financing for RES projects. Certain investments are also financed through grants from international financial institutions (WB, EBRD, GEF, KfW...). The regulatory framework for state subsidies is established.</p> <ul style="list-style-type: none"> c. Lack of appropriate legislation; lack of funds d. Government; Ministry of Economy, Labour and Entrepreneurship; Croatian bank for Reconstruction and Development; Environmental protection and Energy efficiency Fund; EU programmes e. Development of district heating sector, new investments, reconstruction and improvement of existing facilities, introduction of new technologies etc.
<p>Planning 12. Waste planning & landfill bans</p>	<ul style="list-style-type: none"> a. This measure may be considered already partially applied. b. The basic framework for this measure is in force; however it has thus far had no impact on DH. According to the Waste Management Strategy of Republic of Croatia and Waste Management Plan in Croatia (2007 – 2015) recovery and closing of the existing small landfills is planned as well as the opening of waste management centres that will use waste for generation of electricity and heat. Communal and industrial waste is also considered in the Strategy of Energy Development of the Republic of Croatia. c. Distance of future waste management centres from heat demand; opposition of local communities for the waste management centres in their vicinity (NIMBY effect). d. Local governments; Ministry of Environmental Protection, Physical Planning and Construction; Environmental protection and Energy efficiency Fund; e. It can be expected that improved coordination and closer cooperation of waste and energy sectors will result in the promotion of waste as energy source in future district heating schemes.

Czech Republic

<p>Top 12 support measures</p>	<p>Analysis for:</p> <ul style="list-style-type: none"> a. Applicability in the country? b. Fitness into the national regulatory frame? c. The barriers for the uptake on the measure in the country (if any)? d. Relevant stakeholder(s) who would be responsible to bring the measure into effect? e. Expected result if the measure is used in the country?
<p>Planning 1. Heat planning and/or zoning</p>	<ul style="list-style-type: none"> a) this measure could be applied and quite easy could help to shift a decision making process established in the present legislative frame to a more binding, more coordinated and better quality level b) the present frame – Energy Act (obligatory assessment of technical and economy conditions of connection to DH; from the Act on Air pollution protection the resulting competence of municipalities in combustion sources regulation, Territorial planning documentation (municipalities decide on possible involvement (energy concept) into its mandatory part; resulting requests in Build offices decisions (given by the Building Act, dealing with application for disconnection from DH). c) a barrier is in a disuse of principles of competitive environment (against „DH monopoly“), often even infringed valid (in force) conceptions/policies; some decision-making processes of Build offices are non-conceptual or even individual (their decision on application for DH disconnection, construction of new emission sources etc.). d) responsibility to bring this measure into effect should result from SEP (government) and binding introduction and fulfilment of Territorial development plans (regional governments). e) established a more binding, more coordinated and quality level of decision making process in a frame of approved conceptions/policies (SEP – a structure of fuel and energy mix, Energy Act and Energy Management Act (energy efficiency), environment protection) and resulting effective use of DH plants and networks especially in urban areas, including DH opportunities in use of recovery and renewable energy sources

<p>Support 2. Investment grant, DH distribution</p>	<p>a) this measure is even requested by the DH sector</p> <p>b) possible grants for investments into DH networks is by DH sector requested to be involved at list into Axe 2 of the Operational Program of the Ministry of the Environment; an indirect grant could be also saved finances from free emissions allowances – submitted applications of „greening projects“ in their present version cover also projects in DH networks)</p> <p>c) the main barrier is neglecting of DH benefits and though also neglecting of DH needs – especially needed investments into DH networks improvement; DH networks are on a competitive market an investment costly handicap. Requests on ensurance of energy savings/efficiency were targeted on sources and from another view on consumer side and these both done in approaches not timely and conceptually integrated. At highly developed DH systems in the Czech Republic (in comparison with other states and the EU average) by this approach a problem appeared and a request for solution – to ensure an optimisation of capacities/loads of sources and especially DH networks renovation (replacement of steam networks, which lost their foundation for a reason of a downcome of technological steam demand; replacement of outdated DH networks with higher heat losses) and their development (concentration of DH networks, new DH supplied areas connection).</p> <p>d) Ministry of the Environment Operational Program Axe 2</p> <p>e) it would enable DH networks renovations (replacement of steam and outdated ones) and their development (concentration, new areas connections), more effective use of DH (sources and networks) and to keep competitiveness of recovery heat (from CHP, industrial processes, “waste to energy“ processes and RES). By this would be mitigated a thread of DH dismantling with emergence of individual emission/heat sources.</p>
<p>Planning 3. National energy policy</p>	<p>a) this measure is already applied – nevertheless disputes especially about a valid SEP (in force since 2004) and already several new governments proclamation (after 2007 elections, 2009 caretaker government and 2010 new elections) have not led to fulfilment of the valid SEP; the basic dispute - and a crucial one for DH sector - lies in a decision on break of territorial coal mines limits in protected localities (inhabited area). Another dispute – further use of nuclear energy has been in general already solved in favour of it.</p> <p>b) this measure is applied (however it is not fulfilled); formally it is</p>

	<p>a top document and in the past appointed basic principles (utmost a self-sufficiency in energy supply from domestic sources, a long term outlook on a fuel and technology mix for security of energy supply) were followed up by secondary and primary legislative. An obligation to elaborate territorial energy concepts/policies is imposed only on districts and statutory towns (these concepts are rather general ones), it was not a request imposed on other towns/municipality and community level. As a positive contribution of this measure it would be this obligation (territorial energy conception elaboration) imposed on towns with 10 thousand of inhabitants.</p> <p>c) a barrier of SEP functionality is decision making process of politicians about professional matters of energy supply security.</p> <p>d) government</p> <p>e) already for a short term outlook (2015) it would be very significant to make a decision about further use/unuse of domestic coal resources, eventually on a higher dependence on imported energy (natural gas); following this decision it would be expected by the DH sector a statement on priorities – to ensure efficiency of electricity production and heat supply from a view of DH in relation with CHP, use of recovery heat and RES; priorities statement in terms of energy (electricity and heat) supply security with regard to environment protection. Because this relates with an effective use of DH systems in the Czech Republic – it would be also expected a statement/eventually affiliation of measures to keep a competitiveness/customers of DH at a forced switched-over to other fuels (mostly natural gas).</p> <p>A really expected result would be to secure energy supply in the Czech Republic without a significant and unnecessary increase of energy import (natural gas), forced investments in DH at switched-over to other fuel (mostly natural gas – there we do not mention less significant possibilities of RES) to ensure effective DH systems, meeting of a large share of heat demand of inhabitants, services and industry, especially by means of CHP, recovery and renewable energy sources.</p>
<p>Support 4. Operation support for CHP, incl Feed-in-tariffs</p>	<p>a) CHP electricity support is applied; this support does not mean a state support, there is a principle of an obligatory purchase of CHP electricity and heat for market prices with regulated complementary price set by the ERO (a bonus for decentralisation). This support is however lowered and in a comparison with RES support is inadequate; CHP plants ensures benefits for DH systems providing</p>

	<p>heat for a lower price, especially by CHP based on domestic coal.</p> <p>b) this measure is applied, at present there is a change in legislation under processing – CHP electricity support is shifted from the Energy Act to the Act on RES and CHP electricity support (a draft of an amendment of the Act 180/2005 Coll.) for a proposal to cover all supported technologies of electricity production by a common act; subsequently there are expected also resulting decrees amendments.</p> <p>c) this measure is applied; possibilities of a higher evaluation of CHP benefits should result from the present misevaluation of CHP benefits; existing inadequate (much higher) level of RES support and impacts of this support on electricity price prohibit any increase of CHP support.</p> <p>d) existing responsibility is on Energy Regulatory Office</p> <p>e) this measure is applied; a higher evaluation of CHP benefits should have a positive effect on CHP plants stabilisation on the energy market and though a security of heat supply with a high efficiency.</p>
<p>Support 5. Investment grant, DH connection</p>	<p>b) this measure could be applied quite easily in a case of enough financial sources</p> <p>c) Energy Act and Energy Management Act (newly an amendment of the Act on RES and CHP electricity support (under preparation) defines basic conditions for customer connections and in principle obligations of both side – supplier/consumer. Connections construction costs are paid by consumers and this constrains opportunities of connections especially family houses and low consumption consumers. A barrier/question is availability of financial sources.</p> <p>d) Ministry of the Environment</p> <p>e) This support would enable other consumer connections, a significant contribution it would mean especially in areas with a low density of buildings and family houses.</p>
<p>Burden 6. Carbon tax</p>	<p>a) there is applied „energy tax“ - similarly (?) to „carbon tax“ proposal this is imposed with regard on fuel quality; ecological tax is graded by a size and efficiency of installations.</p> <p>b) it could be possible to improve a tax exemptions system and a subsequent obligation of emissions allowances purchase (this is also a carbon tax). In a present frame in the Czech Republic (mostly</p>

	<p>derived and gradually harmonised with the EU provisions) „carbon taxes“ should straightened conditions of heat plants, eg. it should burden also heat sources not covered by ETS, the carbon taxation should not cause disadvantages of DH plants. There is also a question/thread - in a case of a wrong assessment of EU requests – about possible in general a negative impact on the Czech Republic, due to a high share of coal in use.</p> <p>c) probably a barrier of a carbon tax, that could straighten the burden caused by ETS on installations over 20 MW by an adequate burdening of heat sources not covered by ETS is a complicated administration with levies collection from individual heat sources (when a purpose behind is to reach an adequate revenue for the state budget).</p> <p>d) Ministry of Finance</p> <p>e) straightening of heat sources conditions would be expected, eg. burdening of heat sources out of the ETS, this measure should not cause disadvantages of DH and CHP plants based on coal.</p>
<p>Support 7. Favourable loans</p>	<p>a) this measure is in general introduced/proclaimed, a question of a practice deals with conditions offered by individual financial institutions and with accounting principles (including heat price regulation, depreciation of investments etc.)</p> <p>b) within a present frame many measures/factors blend together, which differ in availability of favourite loans by size/own financial power of DH companies. Large companies have usually a lower need to get loans, but with regard to their capitol power they can get a loan easier and „cheaper“. Smaller DH companies complain on limited possibilities and worse conditions offered by financial institutions.</p> <p>c) despite the fact that it was underlined for financial institutions, that DH sector is a stabile and long term business – however with a slower effects for banks – this is probably the aspect decreasing possibilities of favourite loans.</p> <p>d) financial/investments institutions</p> <p>e) favourite loans (but at the same time also necessary changed conditions of DH sector regulation) would enable realisation of needed projects of large DH companies, but especially projects of small DH companies in a needed time and extent, especially projects with increasing efficiency in DH and therefore with a contribution to DH stabilisation on a heat market and to keep</p>

	<p>competitiveness and consumers, eventually to enable further development and by this further stabilisation of the view of regulation purpose.</p>
<p>Support 8. Investment grant, CHP</p>	<p>a) measure is not applied in general; it was enabled to get money from funds (Operational Program of the Ministry of Trade and Industry and State Fund of the Environment (Ministry of the Envir), possibilities were open for small DH companies (excluding municipality owned companies, CO2 emissions reduction needs to be reached)</p> <p>b) new CHP plants financing is in general not treated by an existing frame; the present frame treats obligations to get an approved authorisation for a new CHP installation construction, also non discriminative approach to a relevant transmission grid connection (regarding voltage level), obligatory purchase CHP electricity from CHP - under long term contracts or for a purchased price (market one + a bonus for decentralisation, eventually + „Green bonuses“ in a case of RES electricity).</p> <p>c) a barrier of eventually introduced support – investment grant for CHP - would be a needed condition of heat demand in a locality of a new CHP plant construction, possibilities of DH. An encouraging of new CHP plants constructions must be bonded on heat demand potential. New DH networks constructions are however the main barrier due to high investments costs and competition of existing cheaper heat sources.</p> <p>d) Operational Program of the Ministry of Trade and Industry and State Fund of the Environment (Ministry of the Envir)</p> <p>e) constructions of new CHP plants would be expected in areas with existing heat supply networks (previously supplied heat from heat only boiler houses and islands operated) in a case of CHP investment grant introduction on a condition to assess possibilities of heat potential use in a relevant locality.</p>
<p>Support 9. Tax deduction, DH</p>	<p>a) this measure is applied.</p> <p>a) this measure is applied under an Act on taxations, DH has a reduced VAT (10 % against an ordinary VAT level 20 % by other kinds of energy taxation), similarly RES have a reduced VAT.</p> <p>c) this measure is applied – there is a thread, that due to a shortage of the state budget some intentions appear to reject a reduced VAT level of DH or to unify/bring near VAT levels. A direct support for</p>

	<p>DH would disappear.</p> <p>d) Ministry of Finance and Ministry of the Environment</p> <p>e) this measure is applied; a reduced VAT at DH is a direct support taking account DH benefits for the whole society, especially in environment protection, further in effectiveness of energy supply, DH opportunities in fuels diversification and RES integration.</p>
<p>Planning 10. Building regulations</p>	<p>a) “planning - building regulations” – is not in this sense applied; opportunities to use existing frame of building regulations for encouraging of development and for dismantling of unnecessary barriers of DHC would be difficult to enforce in a strong competitive environment.</p> <p>b) general measures to assess technical and economy conditions for DH connection is given by the Energy Act. EPB Directive principles are implemented by Energy Management Act, resulting Decree is at present under amendments to get closer to the EU requests. An existing regulation frame (from EPBD) does not shift measures in the Czech Republic to encourage DH development and dismantling barriers; EPBD implementation in this sense (for promotion/support of DH development) is not applied in the Czech Republic.</p> <p>c) a barrier is a strong competitive environment, natural gas is available everywhere. New housing constructions take place much more in suburb areas of towns, family houses (terraced) are predominant, mostly in areas out of DH systems. Where technical and economical possibilities exist by a low consumption and high investment intensity of new DH networks, new area is connected to DH supply, if a competitive heat source does not win with its parameters. A question of possible application of DH lays in expression of a priority of DH – to this aim however do not lead existing measures in the Czech Republic – by implementation of EPB Directive there appear much more encouraging measures for RES, which are often unconceptually designed and partially foil CHP and DH possible benefits.</p> <p>d) Ministry of the Environment</p> <p>e) by „planning – build regulation“ introduction and utilisation of existing frame of buildings for DHC encouraging and unnecessary barriers clearing - it would be expected, that DH benefits are taken into account (utilisation of CHP, recovery heat, RES and efficiency of DH sources and networks) at least at a level of “RES-in side” treatment. DH systems could help to reach a more effective use of</p>

	<p>RES share in heat supply of buildings than it could be ensure by individual RES use support. At the same time en effect there will be from CHP and RES electricity production.</p>
<p>Support 11. Investment grant, renewables</p>	<p>a) this measure is applied.</p> <p>b) it is enabled to use investment grants from the Green Savings Program (for households only) or from the State Fund of the Environment or the Ministry of Trade and Industry Operational Program (for towns and communities and business entities).</p> <p>c) A principal of operational grant (green bonuses, stated purchased prices) is in general applied in the Czech Republic at large sources (deals with DH) and investments grants at small plants (where operational results are not reported on sheets). Problems caused by underestimation of photovoltaic boom (electricity production) are at present under solutions by some changes in legislation. In the field of heat production from RES are more significant only – biomass (forest/dendro biomass, biomass from agriculture/agriculture by-products (straw) and targeted growth of biomass) and solar thermal energy. Biomass potential is limited in the Czech Republic and for that reason its utilisation is requested with higher efficiency (in CHP). Resulting from expert studies the biomass potential will be exploited already in existing CHP plants and these projects under preparation, for that reason operational support – not an investment one – is advocated by experts.</p> <p>Solar thermal energy use is encouraged by the Green Savings Program, which cannot be used by DH companies. By this way this support counteracts DH deliveries and makes worse the operational economy of CHP plants especially in summer season.</p> <p>d) Ministry of the Environment (the State Fund), Ministry of Trade and Industry</p> <p>e) This measure is not advocated by experts in the Czech Republic.</p>
<p>Planning 12. Waste planning & landfill bans</p>	<p>a) this measure is at present under consideration and „observed“ by DH sector with a professional interest in „waste to energy“ opportunities (3 waste incineration plants with heat delivery for DH systems are under operation). In a case of more positive assessment of „waste to energy“ (by decision makers, professional and general public) there would be a more active approach for a proposal of fuels savings/replacement. At present there is an interest of DH sector in this field lowered also by a general surplus of heat</p>

	<p>available for DH.</p> <p>b) there is no framework – there are obligations and requests on waste management side (99/31/ES – 25 % less disposed of biodegradable wastes in 2010 comparing 1995, 2013/50 % and 2020/65 %; priority to utilise materials and energy of wastes), which cannot be fulfilled by present approach in the Czech Republic, on the other hand the strongest request on energy efficiency of waste to energy processes means that only CHP with whole year heat delivery would be an opportunity for successful projects, but due to the existing surplus heat at DH systems this problematic potential is off an interest.</p> <p>c) barriers are mainly in negative assessments of waste to energy in the Czech Republic (by decision makers, professional and general public), conflict of interests at municipality levels – an obligation to terminate waste disposal with a financial impact on waste lands operators (municipality or private companies). Barriers on DH sector side lays in existing surplus heat at DH systems, problems dealing with assessment of waste to energy technology, environmental aspects – experts discrepancies and general and professional public negative assessment (dimensioning, local impacts of waste transport and other burdens). A technical problem deals with necessary changes of existing CHP plants installations for waste to energy efficient and ecological operation (problems of mechanical-thermal treatment of wastes).</p> <p>d) Ministry of the Environment</p> <p>e) an effective and ecological friendly solution of waste problems would be expected with an opportunity at DH systems to replace/lower fuels consumption at the same time with an efficient heat supply and electricity production in CHP on wastes.</p>
--	--

Lithuania

<p>Top 12 support measures</p>	<p>Analysis for:</p> <ul style="list-style-type: none"> a. Applicability in the country? b. Fitness into the national regulatory frame? c. The barriers for the uptake on the measure in the country (if any)? d. Relevant stakeholder(s) who would be responsible to bring the measure into effect? e. Expected result if the measure is used in the country?
<p>Planning 1. Heat planning and/or zoning</p>	<p>The measure is implemented in Lithuania by Heat law requirement for municipalities to prepare and systematically review of special heat supply plans. Such plans include town territories (zones) where certain heat production/supply or fuel is set as main option. The decision on heat provision option is carried out based on environmental and economic considerations taking into account existing infrastructure, foreseen town development and remarks of all interesting parties during public discussion.</p> <p>Planning process is initiated by municipality administration. Participants of the planning process are regional environment protection department, public health centres, DH companies, gas and electricity utilities, society.</p> <p>The measure have proved as useful tool for planned and optimal heating sector development ensuring environmental standards in densely populated towns zones and removing uncertainties for investors into heat supply infrastructure.</p>
<p>Support 2. Investment grant, DH distribution</p>	<p>The measure is widely used in Lithuania in the framework of European Structural funds support program under the measure “Heat supply systems modernization and development”. There are no barriers for the measure implementing and DH companies launched a number of pipeline renovation projects. Sometimes there are difficulties related to own financing required by support rules. Applicants for financing are owners of DH networks. The measure is very important for enlarging renovation scope of worn-out and poorly insulated pipelines.</p>
<p>Planning 3. National energy policy</p>	<p>The Lithuanian National Energy Strategy and plan of its implementing measures are the main political documents for energy strategy. Main barriers for implementing NES measures and projects are lack of financing and rapid changes of economic environment. Particularly, implementation of waste to energy project in Vilnius failed to be implemented due to negative public opinion, and is postponed for later</p>

	<p>time. The NES is elaborated by the Government with participation of research institutions, consultants and energy experts and adopted by Parliament. Implementation plan is prepared by the Energy Ministry and adopted by the Government. The measure allows more rational use of available financial resources for investments devoted to the main goals of energy policy – security of supply, minimizing impact on environment and raising energy efficiency.</p>
<p>Support 4. Operation support for CHP, incl Feed-in-tariffs</p>	<p>CHP support in Lithuania is implemented by fixing feed in tariff and amount (quota) of power generated in CHP plants supplying heat to DH systems. After the closure of Ignalina nuclear power station significant electricity amount is imported from Russia at lower prices than generation costs in local CHP plants. Thus Lithuania is in the situation, when all electricity consumers support DH sector and heat consumers via Public service obligations. Enlarging of electricity amounts purchased from local CHP producers would increase electricity price. Therefore some “balancing” approach is used to regulate imported and in country produced electricity amounts allowing survival of the latest and reducing electricity price due to cheaper imported electricity. Full import is unacceptable because of supply safety reasons.</p>
<p>Support 5. Investment grant, DH connection</p>	<p>Customer bears all building connecting to DH expenses following present regulations in Lithuania, if heat supplier and customer do not agreed to share the costs. From the other hand, heat supply licensing rules says that license owner is obliged to connect all willing consumers in the territory. Connecting new consumers may be positive regarding overall DH supply costs or negative when small remote consumers are connected. Therefore, such support should be based on economic considerations. At present hard economic situation the Government is unable provide such support because of the lack of financial resources. DH companies can provide support or share connecting costs when new customer reduces overall DH supply costs.</p>
<p>Burden 6. Carbon tax</p>	<p>At present there is no Carbon tax applied beyond ETS. The main alternative to DH supply is individual heating using natural gas or wood fuel. Also a number of geothermal (heat pumps) are installed in newly built individual houses. Carbon tax might be introduced on the basis of purchased fuels as kind of excess tax now being applied to transport fuels.</p> <p>Other carbon tax scheme based on actual CO₂ emissions seems to be difficult to manage and administrate because of big number of small pollution sources.</p> <p>Implementing penalties for carbon emissions will require amend the Tax law and is under competence of the Parliament. Introducing of new taxes would be very unattractive politically, taking into account low income level and high share of expenses passing to energy bills in household</p>

	<p>expenditures. From the other hand DH companies having big boiler houses have GHG emission allowances according to ETS directive.</p> <p>Carbon tax introducing will positively affect competitiveness of DH supply however will bring burden to consumers also those who have no possibilities or cannot be connected by economic reasons to DH system.</p>
<p>Support 7. Favourable loans</p>	<p>There is no such support measure employed in Lithuania. Providing such low interest loans means presence of relevant financing institution (fund) or governmental support scheme compensating part of interest of commercial bank loan. Partially such aid earlier was provided by Lithuanian Environmental Investment Fund for the projects related to environmental benefits. Nevertheless, approved financing priorities for 2010-2013 exclude renewable fuel use (wood) projects and are directed towards water and waste issues.</p> <p>It is hardly possible providing financial support from the Government with regard to budget problems which have and will have significant deficit during coming few years.</p> <p>The measure definitely can be considered as way to get benefit for society (lower pollution, heating cost optimization, development of energy infrastructure) by using taxpayer's money. Also other similar activities can require the same support, as example, building renovation.</p>
<p>Support 8. Investment grant, CHP</p>	<p>There is no financial support for investments into CHP applied in Lithuania. First of all because of surplus electricity generating capacities in the country. Already existing plants have no enough quotas for electricity production and delivery into the National grid, because cheaper electricity is imported from Russia.</p> <p>Such scheme has sense when big part of electricity is generated in condensing power plants. In Lithuania all plants (excluding using renewable sources) have their electricity production quotas.</p> <p>Lithuania is going to build the new nuclear power plant, which is considered as better option for power production from environmental point of view.</p>
<p>Support 9. Tax deduction, DH</p>	<p>Value added tax deduction by 50% for DH supply is applied in Lithuania. Though the Government policy is against VAT exemptions, however the reduced VAT tariff will be applied – until September 2011 because of social reasons. The measure is considered as constrained and it is planned to abolish it in the future.</p> <p>Tax issues are under responsibility of the Government (incentives) and Parliament (Tax law amendments).</p>

	<p>The measure increases competitiveness of DH supply against other heating options, however introduces some market distortions and reduces budget revenues. From the another hand higher VAT tax and higher heating costs as consequence, at present social support scheme would increase amount of money necessary for compensating heating expenditures of low-income families.</p>
<p>Planning 10. Building regulations</p>	<p>Deployment of DH infrastructure is encouraged during heat supply planning process in municipalities. There are no evident legal barriers for DH expansion. In fact, the new buildings must be connected to DH network in zones where DH supply exists. New building areas are regarded as competition zones where both centralized and individual heat supply options are considered and chosen by economic and environmental issues. Densely populated areas with block apartment houses typically are included into DH zones.</p>
<p>Support 11. Investment grant, renewables</p>	<p>Investment grants for renewables are not available from the Government. Some small grants used to be available from the Lithuanian Environmental Investment Fund limited to project assessment and setting. The main barrier for the Governmental support is gap in budget and such situation likely will stay for several next years. As investment grant financial support from EU Structural and Cohesion funds can be considered. Such funds are available for DH companies and are used for network renovation and biomass boilers installations.</p>
<p>Planning 12. Waste planning & landfill bans</p>	<p>Energy recovery from combustible municipal wastes is one of waste management options in the Lithuanian Waste management strategy. However at present only wood waste and some industrial waste types (used oils, tyres) are used for energy production. A ban to dispose combustible waste in landfills probably will be inevitable in future, however today there are no real alternatives for landfills, because no municipal waste burning plants exist in the country. The main barrier for waste-to-energy plants is negative public opinion. Already prepared project for MSW incinerating plant in Vilnius is postponed because of public protests.</p> <p>Forbidding of combustible waste landfills is under responsibility of the Ministry for Environment. Waste management is directly implemented by 10 Regional waste Management Centres, waste collection and primary sorting is under responsibility of municipalities.</p> <p>Construction of the first municipal waste and biomass CHP plant should start this year already in Klaipėda city. Hopefully, combustible municipal waste will take significant part in future energy mix used for DHC and simultaneously will reduce waste stream to landfills.</p>

Romania

<p>Top 12 support measures</p>	<p>Analysis for:</p> <ul style="list-style-type: none"> a. Applicability in the country? b. Fitness into the national regulatory frame? c. The barriers for the uptake on the measure in the country (if any)? d. Relevant stakeholder(s) who would be responsible to bring the measure into effect? e. Expected result if the measure is used in the country?
<p>Planning 1. Heat planning and/or zoning</p>	<p>Heat planning and zoning are not effective in Romania right now. Zoning is mentioned in the legislation but not explicitly enforced. Heating using power is not economically feasible but the alternative of using natural gas for individual boilers resulted in a very fragmented market for DH in a lot of cities. Especially having two or three methods of heating in a condominium is altering the economics of DH systems. Politically the heat zoning is not on the agenda up to now. In case a revised energy strategy will be concluded, zoning can become a strong point for DH.</p> <p>Strategic energy planning, probably at municipality level. May include encouraging or even enforcing particular energy solutions (zoning)</p>
<p>Support 2. Investment grant, DH distribution</p>	<p>As the financial constrictions are very tight on DH, investment grants are evaluated as being one of the most beneficial measures in modernizing and adapting to current situation the DH systems. Heat producing capacities also lacking investments.</p> <p>Financial support for district heating pipes through provision of grant, probably from the state budget, but other sources also possible. The actual budget deficit is not helping in using this lever.</p>
<p>Planning 3. National energy policy</p>	<p>The existing national energy policy is trying to cover all the aspects regarding energy and is very generous in establishing targets. The weak part is that is not best suited and structured as to achieve all these targets. For DH is mentioned an effort of 2.7 billions euros in modernizing and adapting without mentioning the most important steps to be taken in this respect. Previous ambitious programs were left without adequate financing thus resulting in lack of results.</p> <p>Instead of summarizing all the possible goals regarding energy, the strategy needs to be more focused on the most important</p>

	aspects that can drive to a increased interest for investments in the energy sector, not based on the state budget.
Support 4. Operation support for CHP, incl Feed-in-tariffs	<p>Rather than feed-in tariffs, Romania has opted for a system of tradable 'green certificates' awarded for power produced and delivered to the distribution network from renewable sources. Power suppliers are obliged to meet annual quotas for the purchase of green certificates related to the percentage of renewables in their total supply mix. The grid operator issues green certificates for renewable generation, ensuring that producers benefit both from the sale of the power itself and the value of the accompanying certificate.</p> <p>The certificates can be traded on a platform run by Opcom, the national energy market operator. The law sets a minimum value of €27 per certificate and a ceiling of €55 (US\$35—\$72), index-linked to inflation and guaranteed until 2025.</p> <p>The origin certificate system is also used and has more to do with the energy produced through cogeneration.</p> <p>In case of using cogeneration and renewables, the support can be received just for one, using the support schemes for cogeneration or renewables. In case of old technology and old installations, the criterion of high efficiency cogeneration is not met.</p>
Support 5. Investment grant, DH connection	<p>Presently there is no such a scheme in place.</p> <p>DH connection is free for clients (no charge for connection to the DH piping) in case the DH operator is using this method to aquire new clients, but there is no compensation from other sources.</p> <p>Support is provided according to legislation for people that are starting to use renewables (solar, wind, heat pumps) to lower the energy consumption of houses connected to the power grid.</p>
Burden 6. Carbon tax	<p>The carbon tax is affecting the large heat producers and is not affecting individual/small boilers. Small pollutants sources in densely populated areas are not subject to this tax but accounts for a sensible part of the emissions, as well as the transportation sector.</p>
Support 7. Favourable loans	<p>Very desirable for the DH systems that are facing difficulties in order to improve their performances.</p> <p>In the past years, we can count as favourable loans the loans that were guaranteed by the Ministry of Finance. (Used mostly to cover acquisitions of fuel for the incoming cool season). Difficult to</p>

	judge if a certain DH system is entitled to receive such a loan or not.
Support 8. Investment grant, CHP	CHP is not stimulated through grants, is only treated favourable in case is classified as high efficiency, new capacity. A grant system is perceived as having a great potential to ad new modern capacities among the heat suppliers to DH.
Support 9. Tax deduction, DH	At least for a certain period, the reduced VAT can help the DH sector. As the VAT in Romania was increased in 2010 from 19% to 24% this measure is more than welcomed.
Planning 10. Building regulations	<p>Building regulation focuses on building energy consumption, and does not incorporate the primary energy consumption involved in the various solutions.</p> <p>The main problem in association with the building regulation remains that the code does not operate with primary energy factors (PRFs) when dealing with energy consumption of buildings. This leads to sub-optimal energy solutions, and should be changed.</p>
Support 11. Investment grant, renewables	<p>The main economic support for renewables in heat production is the absence of those energy taxes that are placed on fossil fuels. There is generally only investment support for development of new technologies. The legislation regarding renewables in Romania is one of the most advanced.</p> <p>Investment grants could be applicable for a small number of projects in emerging technologies such as small scale biomass CHP or biogas CHP, where potential operators hesitate until these technologies have proven themselves. Beyond this, the sector believes investments should be made on market terms.</p> <p>A similar issue is investments risks associated with geothermal energy for district heating. If all goes well, geothermal heat could be economically attractive in a number of cases, but the risk of a “dry” or complicated borehole leaves projects of that type outside the reach of many district heating operators. Some form of government involvement/risk sharing setup could facilitate faster development of this resource. Technology for drilling is available and wells for geothermal are in production for years, supplying heat to hotels, homes and pools.</p>
Planning 12. Waste planning & landfill bans	A waste policy exists already and is tailored to the European legislation. Recent legislation is applicable to gas produced from sewage sediments and waste and can help in developing new capacities for DH heat supply. Some waste fractions are still land

	<p>filled, but are maybe better suited for recycling than incineration.</p> <p>Main challenge is to ensure that partial liberalizations in waste policy do not lead to waste trafficking, which could make waste an unreliable fuel for district heating/CHP. This problem is made even more challenging by the fact that EU member states operate with different taxation levels on waste, thereby increasing incentives to transport waste. Harmonization of waste taxes could be desirable, but requires EU action.</p>
--	--

Expansion countries

France

<p>Top 12 support measures</p>	<p>Analysis for:</p> <ul style="list-style-type: none"> a. Applicability in the country? b. Fitness into the national regulatory frame? c. The barriers for the uptake on the measure in the country (if any)? d. Relevant stakeholder(s) who would be responsible to bring the measure into effect? e. Expected result if the measure is used in the country?
<p>Planning 1. Heat planning and/or zoning</p>	<ul style="list-style-type: none"> - <u>applicability of the measure</u> <i>A measure of that kind (zoning) has been applicable in France since 1980 but has led to zoning of only one DH network because of the complexity in the procedure. A new, simpler, version of the measure has just been voted in the Grenelle II Law (law n° 2010-788 dated July 12th 2010 and published on July 13th 2010). It will apply to DHC networks using a majority of renewable and recovered energies (R&RE). Some measures regarding planning are also taken in the Law, at a municipal and regional level.</i> - <u>fitting into the national regulatory frame</u> <i>Since the Grenelle II law was voted, these measures should easily fit into the regulatory frame. Implementation decrees are to be taken by the end of 2010; some of them are already in the course of being written.</i> - <u>possible barriers for the uptake of the measure</u> <i>The possible barriers at this stage would be if the decree:</i> <ul style="list-style-type: none"> o <i>(zoning) took too complex and burdening measures (ex: asking the operator to justify its energy supplies for the whole duration of the network depreciation).</i> o <i>(planning): forgot to include the operators in the circle of people to consult before planning energy matters on a given territory (municipal, regional ...)</i> - <u>relevant stakeholder(s) who would be responsible to bring the measure into effect</u> <i>The French Ministry of Environment is in charge of implementing the zoning measure in its principles. Afterwards, local authorities will decide the zoning of a given perimeter and will work together with the local population and DHC companies to organize it. The rules for planning are also decided in the law and will then have to be implemented at a regional or local level.</i>

	<ul style="list-style-type: none"> - <u>result expected if the measure was used</u> <i>If the measure is successfully implemented, DH networks (especially the most efficient ones in terms of R&R energies) will be given a new opportunity to develop themselves.</i>
<p>Support 2. Investment grant, DH distribution</p>	<ul style="list-style-type: none"> - <u>applicability of the measure</u> <i>The Renewable Heat Fund, implemented through the 1st Grenelle Law, has this goal of allowing the lightening of pipe investments for the most “virtuous” networks (or those who commit to improve their share of R&R energies). Any measure of that kind can only be beneficial to developing DHC networks.</i> - <u>fitting into the national regulatory frame</u> <i>Two sets of operating rules have been drafted on the Grenelle I basis. The measure already is in the French regulation.</i> - <u>possible barriers for the uptake of the measure</u> <i>The only barrier to the success of this measure would be if the financial grant levels (already not related to the actual costs) were to be reduced. In that case, many projects could never be carried out. If the levels remain the same as they are (or are reduced), there is no way the DHC networks will be able to comply with their objectives of doubling (or more) DHC length and reaching an average of 50% of R&RE in the fuel mix by 2020.</i> - <u>relevant stakeholder(s) who would be responsible to bring the measure into effect</u> <i>ADEME (French Energy Agency), which decide what rules are to be followed and what amounts are granted to what project is the pillar to the system.</i> - <u>result expected if the measure was used</u> <i>The measure has already been implemented. Rules for 2009 have led to helping financially 114 km of network. Rules for 2010 were published and have not produced any results yet. The results should be positive if the financial levels are increased.</i>
<p>Planning 3. National energy policy</p>	<ul style="list-style-type: none"> - <u>applicability of the measure</u> <i>A framework dedicated to DHC does not exist at the time in France; various regulations, however, allow DHC to be taken into account in different fields: tax regulation, thermal regulation, public contract regulation, environment regulation ... A dedicated framework would not, therefore, be a priority in France. Ending the remaining competition inequities would, however.</i> - <u>fitting into the national regulatory frame</u> - <u>possible barriers for the uptake of the measure</u>

	<p><i>Whether established in a dedicated framework or in several general regulations, national policy should end all of the competition distortions that exist against DHC networks. Indeed, some areas are not yet covered by the regulation. For instance:</i></p> <ul style="list-style-type: none"> ○ <i>no measure allows DHC consumers to have access to the energy precariousness measures granted to gas or electricity direct users.</i> ○ <i>no measure either addresses the need to have access to preferential loan rates for DHC investments</i> <p>- <u>relevant stakeholder(s) who would be responsible to bring the measure into effect</u> <i>Each Ministry would be responsible for implementing the measures entering in their authority field.</i></p> <p>- <u>result expected if the measure was used</u></p>
<p>Support 4. Operation support for CHP, incl Feed-in-tariffs</p>	<ul style="list-style-type: none"> - <u>applicability of the measure</u> <i>Already implemented in its principles.</i> - <u>fitting into the national regulatory frame</u> <i>A feed in tariff has been existing for some years now for CHP in France. It has helped develop and then maintain CHP so far.</i> - <u>possible barriers for the uptake of the measure</u> <i>Barriers are of two types:</i> <ul style="list-style-type: none"> ○ <i>on one hand, the level of the tariff, that is barely sufficient.</i> ○ <i>on the other hand, the constant threat on the FIT.</i> - <u>relevant stakeholder(s) who would be responsible to bring the measure into effect</u> <i>The Ministry of Environment and the Electricity Regulation Commission are the main authorities for bringing the measure into effect.</i> - <u>result expected if the measure was used</u> <i>The balance is very fragile and without the FIT, CHP in France will not be able to last, in spite of the fact that CHP is now acknowledge as a very efficient and sound system in Europe.</i>
<p>Support 5. Investment grant, DH connection</p>	<p>See 2), above.</p>
<p>Burden 6. Carbon tax</p>	<ul style="list-style-type: none"> - <u>applicability of the measure</u> <i>An attempt to implement a carbon tax has recently been made by the French government. The first (attempted) version of the Carbon Tax was invalidated by the Constitutional Commission. The measure should be</i>

	<p><i>applicable in its principle and will probably be voted again in the near future.</i></p> <ul style="list-style-type: none"> - <u>fitting into the national regulatory frame</u> <i>A finance law is the logical vehicle for this type of measure.</i> - <u>possible barriers for the uptake of the measure</u> <i>The barrier the measure was confronted to in the past was the fact that part of it was regarded as unconstitutional for lack of equity between citizens. Equity may continue to be a barrier if a new version of the Carbon tax was to be taken regardless of the competition rules between the different forms of energy. For instance: energy sources not subject to ETS, even those all fossil fuel based, could be less burdened than R&RE DHC networks.</i> - <u>relevant stakeholder(s) who would be responsible to bring the measure into effect</u> <i>The Ministry of environment would to the first authority to address the issue and implement the measure when taken.</i> - <u>result expected if the measure was used</u> <i>The results will very much depend on the operating measures that will be taken. A carbon tax can be a very beneficial measure for DHC if it addresses the issue of competition with other forms of energy, less efficient and/or sound.</i>
<p>Support 7. Favourable loans</p>	<ul style="list-style-type: none"> - <u>applicability of the measure</u> <i>Such a measure should be applicable as it already exists for building construction, for instance, as well as for some “environmental” products such as heat pumps (“Eco-loans” with a 0% rate).</i> - <u>fitting into the national regulatory frame</u> <i>The Construction Code could then give the principles of such a measure for DHC networks. This measure should in priority make it compulsory for banks to grant preferential rate loans to DHC network projects.</i> - <u>possible barriers for the uptake of the measure</u> <i>Political will seem to be the main barrier to implementing this measure.</i> - <u>relevant stakeholder(s) who would be responsible to bring the measure into effect</u> <i>The Ministry of Environment (construction and housing department) would be the authority to bring the measure into effect.</i> - <u>result expected if the measure was used</u> <i>Investments are a major burden for whoever wants to implement a DHC network. Either the local authority itself or (mainly) the professional operator is in charge of it; in the second case, financing is even more difficult, since no preferential rate is allowed. In both cases, building a DHC</i>

	<p><i>network is a financial challenge many do not dare to take up. Favorable loans would allow those, although very much attracted to the DHC advantages, but for whom the investment represents too heavy a charge, to start up a project.</i></p>
<p>Support 8. Investment grant, CHP</p>	<ul style="list-style-type: none"> - <u>applicability of the measure</u> <i>Investments grants already exist in France for Biomass CHP. Those are held in the form of tenders. No investment grants exist at the moment for gas or other energy based CHP and it is very unlikely it can be implemented soon, given the current context.</i> - <u>fitting into the national regulatory frame</u> <i>The Commission for Energy regulation is in charge of conducting the Biomass CHP tenders.</i> - <u>possible barriers for the uptake of the measure</u> <i>CHP faces great difficulties in France. Apart from the barriers pointed at in 4), the possibility of implementing investment grants for (all) CHP face:</i> <ul style="list-style-type: none"> o <i>the strong presence of nuclear power in France</i> o <i>recommendations recently made in a congressmen's report, saying that no feed in tariff contract should be renewed for gas CHP.</i> - <u>relevant stakeholder(s) who would be responsible to bring the measure into effect</u> <i>The ministry of environment would be the main stakeholder for deciding and implementing such a measure.</i> - <u>result expected if the measure was used</u> <i>CHP is currently in great danger in France. Investment grants would constitute a major shift in policy that would allow French CHP not to disappear completely in the months to come.</i>
<p>Support 9. Tax deduction, DH</p>	<ul style="list-style-type: none"> - <u>applicability of the measure</u> <i>There is no tax deduction per se, but a reduced VAT has been implemented in France for DHC networks using 50% or more of R&RE in their fuel mix (60% originally, in 2006). It was drafted to end a competition imbalance with gas and electricity, which already benefited from such a measure. It consists in applying a reduced VAT rate for:</i> <ul style="list-style-type: none"> o <i>the subscription part of the DHC invoice, whatever the fuel mix</i> o <i>the part of the invoice that varies according to energy consumption, IF the DHC networks uses a 50% share (or more) of R&RE.</i> - <u>fitting into the national regulatory frame</u> <i>The measure was implemented in a finance law.</i> - <u>possible barriers for the uptake of the measure</u>

	<p><i>The main barriers for correctly applying the regulation seem to have been removed since SNCU has drafted a definition for DHC networks eligible to reduced VAT and a method for calculating the fuel mix. Both documents were approved by the Finance and the Environment Ministries. The one barrier remaining, it seems, is the fact that the heat produced through CHP is not regarded as recovered energy and therefore does not count as such in the fuel mix.</i></p> <ul style="list-style-type: none"> - <u>relevant stakeholder(s) who would be responsible to bring the measure into effect</u> <i>The stakeholders responsible for applying the measure are the Tax authorities.</i> - <u>result expected if the measure was used</u> <i>The measure has already proven to be successful, in a sense that it puts an end to a competition distortion.</i>
<p>Planning 10. Building regulations</p>	<ul style="list-style-type: none"> - <u>applicability of the measure</u> <i>Building regulation is one main challenge in French regulation. The 2005 thermal regulation was very detrimental to the DHC sector as it did not allow a R&RE based DHC network to benefit from the efficiency labels. The 2012 thermal regulation should overcome this barrier but is not soon applicable.</i> - <u>fitting into the national regulatory frame</u> <i>Thermal regulation – Ministry of Environment</i> - <u>possible barriers for the uptake of the measure</u> <i>Several barriers remain to be tackled before the regulation can be considered as fit:</i> <ul style="list-style-type: none"> o <i>measures should prevail on theoretical energy savings</i> o <i>the carbon footprint calculation method for DHC, used to adjust the maximum energy consumption allowed, has not been stabilized yet.</i> o <i>the 2012 thermal regulation only applies in 2011 and in 2013 no transition measures have been planned for DHC using R&RE.</i> - <u>relevant stakeholder(s) who would be responsible to bring the measure into effect</u> <i>The main stakeholder responsible for implementing the measure is the Ministry of environment (construction and housing department).</i> - <u>result expected if the measure was used</u> <i>If the measure (2012 regulation) is quickly implemented without the flaws mentioned above, chances are that the DHC networks will get rid of another competition distortion.</i>
<p>Support</p>	<ul style="list-style-type: none"> - <u>applicability of the measure</u>

<p>11. Investment grant, renewables</p>	<p><i>Investment grant for renewables (apart from the renewable heat fund, see 2), above) could be reinforced in French regulation but also reserved to the more efficient solutions.</i></p> <ul style="list-style-type: none"> - <u>fitting into the national regulatory frame</u> <i>The existing regulation could be revised so that the rules give less incentive to individual energy solutions where collective energy solutions are more relevant.</i> - <u>possible barriers for the uptake of the measure</u> <i>Renewable grants are given without regard to the efficiency of a solution as compared as to another one.</i> - <u>relevant stakeholder(s) who would be responsible to bring the measure into effect</u> <i>The Ministry of environment would be in charge of implementing such measures.</i> - <u>result expected if the measure was used</u> <i>If a proper measure was implemented, another imbalance in competition that prejudices against DHC networks would be ruled out.</i>
<p>Planning 12. Waste planning & landfill bans</p>	<ul style="list-style-type: none"> - <u>applicability of the measure</u> <i>Waste planning is already in place. Unfortunately, latest laws plan that waste incineration and landfill capacities should be reduced by 15% by 2012; landfill is not banned. A measure favoring waste incineration over landfill is not likely to be implemented soon, as waste incineration still suffers from a bad image. The renewable heat fund, however, supports financially the connection of a DHC to an existing waste incineration plant for recovering heat. In France, policy makers fear that maintaining waste incineration will prevent the use of the other, ways of dealing with waste that should have priority (prevent, recycle ...)</i> - <u>fitting into the national regulatory frame</u> <i>Environmental regulation should revise its way of addressing waste incineration, so that (after respecting the priorities given by the Waste Directive in terms of preventing, recycling ...), waste incineration with heat recovery is favored over any other solution that does not allow to recover energy.</i> - <u>possible barriers for the uptake of the measure</u> <i>The lack of political will facing public opinion, poorly informed, is the main barrier.</i> - <u>relevant stakeholder(s) who would be responsible to bring the measure into effect</u> <i>The Ministry of environment, together with ADEME are the main stakeholders in that area.</i> - <u>result expected if the measure was used</u> <i>If such a measure was to be taken, it would allow more recovered heat to be used instead of wasted.</i>

Germany

<p>Top 12 support measures</p>	<p>Analysis for:</p> <ul style="list-style-type: none"> a. Applicability in the country? b. Fitness into the national regulatory frame? c. The barriers for the uptake on the measure in the country (if any)? d. Relevant stakeholder(s) who would be responsible to bring the measure into effect? e. Expected result if the measure is used in the country?
<p>Planning 1. Heat planning and/or zoning</p>	<p>Mandatory heat planning for district heating on the local level is already a possibility in Germany. Municipalities can chose to force building owners to connect to and use district heating in their city are or parts thereof. But as only 9 % of the district heat is delivered to such areas, mandatory heat planning can not be considered an option which is widely put into use in Germany. There is also no possibility for overarching heat planning in a broader sense.</p> <p>The reasons for the relative unpopularity of this measure are widely spread. In general, the idea of heat planning is controversial and in a lot of cases not well received by the local inhabitants. Furthermore in the public discussion the possibility of mandatory heat planning for district heating is used as an argument against district heating in general. Therefore municipalities and companies supplying the district heating alike may shy away from establishing mandatory heat planning in fear of bad publicity. Since the mandatory heat planning for district heating is done by the municipality in the form of byelaws there are also certain requirements which have to be met in case the company providing the district heating is not run and owned by the municipality itself, making it a rather complicated matter in terms of controlling and other issues related to other legal issues and administration among others.</p> <p>So while the possibility for mandatory heat planning for district heating already exists in Germany it is not done on a federal level, nor is it widely used by municipalities in conjunction with district heating suppliers. Because of the aforementioned barriers establishing heat planning on a broader scale would be problematic, even when not factoring in possible legal issues.</p>
<p>Support 2. Investment grant, DH distribution</p>	<p>A support system for district heating distribution was implemented with the KWKModG 2009, granting support to densification of existing and building of new district heating grids. This support measure was introduced to encourage the</p>

	<p>building of district heating grids as heat sinks for the CHP plants. In general this is an approach that is aiming in the right direction since it tackles one of the barriers of district heating expansions, the high costs for distribution infrastructure. This makes district heating grids a long term investment with corresponding longer time to make return on investments. Such long term investments are not favoured by the current market situation.</p> <p>Experiences with the first round of applications however have revealed that the administrative burden is too high and that the theoretical maximum limit of 20 % for the support is in reality significantly lower. Therefore both the limit and the administrative process needs to be altered to use the support in the most efficient way possible and to realize more of the yet untapped potential for district heating in Germany.</p> <p>Support should also be extended to district cooling grids utilizing heat from CHP to produce cold. These grids serve as much as a heat sink for CHP as a district heating grid does.</p>
<p>Planning 3. National energy policy</p>	<p>District heating and cooling are in most cases addressed indirectly by the national energy policies. As mentioned before the legislative focus was on the supply side. This has changed with the KWKModG 2009 and the EEWärmeG but with the challenges of the future energy system, namely the balancing of volatile electricity from renewable energy sources, the extensive supply of renewable or recycled heat to the building stock and the continued urbanization of the German population district heating and cooling as an energy efficiency technology and an infrastructure should be one of the key elements of the national energy policy.</p>
<p>Support 4. Operation support for CHP, incl feed-in-tariffs</p>	<p>Operation support for CHP already exists within the framework of the KWKModG 2009. The support is based on a premium for electricity from cogeneration; it is not a system of feed-in-tariffs. The general system is not subject to a substantial debate and is widely accepted. The structure of the support may need adjustment in the light of ambitious political goals and unfavorable market conditions for a significant expansion. The extension of the operating time of nuclear power plants may also have a negative effect on CHP plants as well.</p>
<p>Support 5. Investment grant, DH connection</p>	<p>There is a support for district heating substations in the context of the support scheme for renewable energies in the heating market. This is however restricted to smaller grids that operate on renewable energy sources. There have been local support scheme for the connection to a district heating grid and these have been successful in assisting the expansion of district heating since they directly affect the competitiveness of district</p>

	<p>heating in the heating market and give customers an incentive to switch to district heating.</p> <p>An investment grant for the connection to a district heating grid on a broader scale would therefore have positive effects on the expansion of district heating.</p> <p>In times of austerity measures and budget consolidation financing such a scheme would provide problems though. No budget resources are foreseen for such a support and incorporating it into the framework of the KWKModG 2009 would require further analysis and in all probability a raise of the overall cap for the support under the KWKModG 2009, which is currently at EUR 750 Mio. per calendar year. This cap includes the operating support for CHP plants of all sizes and the support for district heating grids.</p>
<p>Burden 6. Carbon tax</p>	<p>Since district heating and cooling in general operate in a liberal market the sectoral approach of the ETS provides a massive burden for the further expansion of district heating and cooling in Germany. The ETS favours individual installations below 20 MW by not including them in the system. Since these installations still dominate the German market measures to level the playing field have to be taken.</p> <p>A carbon tax at the level of the expected future market price and recalculated accordingly could rebalance the market and result in fairer competition between the different forms of heating and cooling supply. Such a measure would also have the support of the absolute majority of the stakeholders in the sector, making it a very valuable possible measure to support district heating in Germany.</p>
<p>Support 7. Favourable loans</p>	<p>Favorable loans can tackle the problems long term investments face on the market and should therefore be applicable in Germany.</p>
<p>Support 8. Investment grant, CHP</p>	<p>There are investment grants for micro-CHP, though this program has recently been stopped due to austerity measures. There are also programs for installations using renewable energy sources but these are usually focused on smaller installations.</p> <p>An investment grant for CHP installations would help investment in CHP plants but there is already operating support in form of the KWKModG 2009. The operating support is supposed to offset the higher investment costs for CHP plants as opposed to a condensing power plant. Thus there seems little room for further support of CHP. It would probably be more promising to adjust the level of operating support in the framework of the</p>

	KWKModG 2009.
<p>Support 9. Tax deduction, DH</p>	<p>A tax deduction for district heating and cooling for instance in form of a reduced value added tax would strengthen the competitiveness of district heating and cooling on the market. This would also benefit the customer directly. Therefore such a tax deduction could have a very positive effect on district heating.</p> <p>It would however also raise controversy among the public. The German value added tax system foresees a plethora of exceptions and deductions, which was recently singled out in the media. The tax deduction for hotel accommodations, which was decided by the newly formed government coalition of conservatives and liberals, has provoked a heated debate on the feasibility of such tax deductions. In the light of this discussion such a tax deduction could face serious problems in the public debate and this will also have an effect on the feasibility from a political perspective.</p>
<p>Planning 10. Building regulations</p>	<p>Buildings play a big role in combating climate change. In order to lift the potential the energy saving ordinance (EnEV) aims to reduce the primary energy demand of buildings to reduce use of resources and greenhouse gas emissions. The target is to reduce the primary energy demand for heating and warm water consumption by 30 % in the building sector.</p> <p>The ordinance has a holistic approach on the building envelope, the systems engineering and the primary energy sources which are being utilised. Balancing the different measures is possible. For instance the obligations can be fulfilled by either using more insulation or more efficient systems engineering or primary energy sources. The system in general therefore reflects the efficiency benefits of District Heating based on CHP.</p>
<p>Support 11. Investment grant, renewables</p>	<p>The main support for renewable energy sources is the electricity feed in tariff in the act on granting priority to renewable energy sources (EEG). This act also applies to CHP plants that deliver heat to district heating grids. This is encouraged by granting a premium for the use of CHP.</p> <p>There are two main problems in regards to the support by the EEG:</p> <ol style="list-style-type: none"> 1. The exclusivity-criterion, which means that the installation has to use renewable energy sources exclusively in order to apply for support. This is problematic for bigger CHP plants which face logistical and economical problems shifting their fuel to those from renewable energy sources exclusively. It is also

	<p>problematic for installations consisting of different units connected to the same system on a premise. These are treated as one installation even if the CHP unit is operated using renewable energy sources exclusively.</p> <ol style="list-style-type: none">2. The limitation to installations using biomass to 20 MW. In order to supply the building stock with renewable energy sources installations over 20 MW should be treated according to the same rules as smaller installations.3. <p>This applies to operational support. There are different support schemes for renewable energy sources but these usually focus on very small installations. A problem with these schemes is the applicability to district heating and cooling providers and their installations and the scattered nature of the different schemes.</p>
<p>Planning 12. Waste planning & landfill bans</p>	<p>There already is a landfill ban in Germany for untreated municipal solid waste.</p>

Italy

Top 12 support measures	Analysis for: <ol style="list-style-type: none"> a. Applicability in the country? b. Fitness into the national regulatory frame? c. The barriers for the uptake on the measure in the country (if any)? d. Relevant stakeholder(s) who would be responsible to bring the measure into effect? e. Expected result if the measure is used in the country?
Planning 1. Heat planning and/or zoning	
Support 2. Investment grant, DH distribution	
Planning 3. National energy policy	
Support 4. Operation support for CHP, incl Feed-in-tariffs	
Support 5. Investment grant, DH connection	
Burden 6. Carbon tax	
Support 7. Favourable loans	
Support 8. Investment grant, CHP	
Support 9. Tax deduction, DH	
Planning 10. Building regulations	
Support 11. Investment grant, renewables	

Planning 12. Waste planning & landfill bans	
---	--

Recommendations for Italy

Considering that DHC systems have the objective to provide effective energy saving of fossil primary energy sources and to achieve global environmental benefits, their development at a national level will contribute to the 20/20/20 EU targets only if they met high efficiency performances or if they are based on renewable energy sources (biomasses, biodegradable wastes, geothermal and solar heat) and on industrial recovery heat.

Following the stakeholders experience resulting from the recent enquiry, the main measures that could further contribute to the DHC development are here summarised.

- ***National Law acknowledging public utility service nature of DHC distribution grid***

The measure should:

- promote the construction of local heat/cooling grids
 - define clearer and shorter authorization processes
 - define the allowable economic support
- ***Extension of the competences of the Regulatory Authority of Electricity and Gas to the heat energy sector.***

In particular the need arises to have a comprehensive organic regulatory framework, both at technical and economic level, regulating the DHC sector, presently affected by different and complex measures. It should be noted that this framework should also provide the guidelines of the relationship to be established between the heat distributors and the final customers.

- ***Promotion of national/regional action plans on DHC***

This measure will contribute to orient the market and provide the necessary industrial planning information to the stakeholders. The action plan could also play a key role in the definition of the public financial support measures related to the implementation of the DHC system.

▪ ***Best practice support measures***

The guidelines to orient the best practice measures are identified as follows:

- **To support in appropriate way the whole DHC system (heat generating plant, distribution grid, substations and customers connections)**
- **To prioritize generating systems based on renewable energy sources or on recovery heat in respect to high efficiency CHP plants fuelled with fossil sources**
- **To adopt by preference an economic support based on the effectively distributed heat**

▪ ***Focused Research and development support program***

Although DHC technology systems can be considered substantially mature, there are many areas that still require specific R&D effort to rise the system overall efficiency, to increase the system flexibility and to contain the costs of distributed heat (e.g. development of smart grids and grid control; heat storage system; advanced control, monitoring and metering devices).

▪ ***Awareness and information dissemination***

Considering the success stories implemented at EU and national level, a strong action promoted by Public administration is required, at regional and local levels and with the active support of experts, to raise the awareness of a large audience and to provide appropriate technical and economic information on benefits related to DHC systems.

Norway

<p>Top 12 support measures</p>	<p>Analysis for:</p> <ul style="list-style-type: none"> a. Applicability in the country? b. Fitness into the national regulatory frame? c. The barriers for the uptake on the measure in the country (if any)? d. Relevant stakeholder(s) who would be responsible to bring the measure into effect? e. Expected result if the measure is used in the country?
<p>Planning 1. Heat planning and/or zoning</p>	<p>Planning and Building Act, Planning section, (revised 2009) claims that municipalities should prepare zones for local energy supply, and that areas suitable for collective support, should be reserved for DH if possible. (supervised by the ministry of environment)</p> <p>PBA, Building section, gives obligation for connection (ministry of Internal Affairs) for all DH companies having a license for DH production, given by the energy directorate (ministry of energy)</p> <p>There are ongoing discussions on the possibility of planning for the use of DH in new urban areas, when new zero emission buildings get to be standard.</p>
<p>Support 2. Investment grant, DH distribution</p> <p>Support 5. Investment grant, DH connection</p> <p>Support 8. Investment grant, CHP</p> <p>Support 11. Investment grant, renewables</p>	<p>This has been the most important measure for expanding DH. Establishing Enova ruling the energy fund of 25 billion NOK (3,1 billion euro), using the interest of the fund + tax of 1 øre/kWh (0,125 eurocent/kWh) on the grid tariff for households and the service sector, budget 770 mill NOK, 100 mill euro. Total amount about 1,85 billion NOK / 231 mill euro pr year to support renewable energy production, DH infrastructure and energy efficiency. For 2010 especially, there is a budget of 3,2 billion NOK / 400 mill euro.</p> <p>The heat sector is working to get a good part of these grants for DH and local renewable heat.</p>
<p>Planning 3. National energy policy</p>	<p>The early DH period of the 80 'ties was based on energy flexibility and security of supply. The focus on climate challenge made</p>

	renewable DH important, using surplus heat and bio energy. In 2010 the focus has changed again to security of supply, given DH more value for the energy flexibility needed when regional grid problems appears.
Support 4. Operation support for CHP, incl Feed-in-tariffs	
Burden 6. Carbon tax	<p>Electricity tax: 11,21 øre/kWh / 1,4 eurocent/kWh. To small, but still important for getting DH more profitable.</p> <p>Reduced tax for the use in DH and industry: 0,45 øre/kWh / 0,06 eurocent/kWh</p> <p>Electricity grid tax: 1øre/kWh/ 0,125 eurocent/kWh Mineral tax on fuel oil: 0,983 NOK/l=> 11 øre/kWh/ 1,4 eurocent/kWh</p> <p>CO2 tax : fuel oil: 0,59 NOK/l = 6 øre/kWh/ 0,8 eurocent/kWh LNG: 0,44 kr/sm3 = 5 øre/kWh / 0,65 eurocent/kWh LPG: 0,66 kr/sm3 = 7øre/kWh / 0,9 eurocent/kWh</p>
Support 7. Favourable loans	
Support 9. Tax deduction, DH	<p>Waste incineration tax abolished from 1.10.2010 (100NOK/ ton = 13 euro/ton)</p> <p>NOx tax agreement: reduction from 16,43 NOK/kg = 2,1 euro/kg NOx to 0,5 euro/kg for Dh companies, industry and ship that have signed an agreement m\with the government/ ministry of environment, to make measures to reduce the NOx emission voluntary.</p>
Planning 10. Building regulations	
Planning 12. Waste planning & landfill bans	

New development countries

Ireland

<p>Top 12 support measures</p>	<p>Analysis for:</p> <ul style="list-style-type: none"> a. Applicability in the country? b. Fitness into the national regulatory frame? c. The barriers for the uptake on the measure in the country (if any)? d. Relevant stakeholder(s) who would be responsible to bring the measure into effect? e. Expected result if the measure is used in the country?
<p>Planning 1. Heat planning and/or zoning</p>	<ul style="list-style-type: none"> (a) Not currently existing in Ireland. Could be used but currently is not being considered or discussed. Would likely meet some opposition. (b) May contradict Competition Law. (c) Current heat suppliers (gas, oil and electricity) will probably oppose. (d) Local authorities would probably be responsible for implementation. (e) Technically it should work but there would be political obstacles.
<p>Support 2. Investment grant, DH distribution</p>	<ul style="list-style-type: none"> (a) Not currently existing in Ireland, but could be adopted. (b) Could be implemented similarly to CHP and ReHeat Deployment schemes. (c) A decreased capital investment budget for the foreseeable future may prevent new financial support initiatives like this from being established. (d) The DCENR/SEAI would probably be responsible for implementation. (e) Undoubtedly this support would result in the development of new DHC systems and the expansion of existing systems.
<p>Planning 3. National energy policy</p>	<ul style="list-style-type: none"> (a) There are already items of National Energy Policy in place, such as The National Climate Change Strategy, The Bio Energy Action Plan for Ireland and The National Energy Efficiency Action Plan 2009 – 2020. (b) Could be presented as an action plan from the DCENR.

	<ul style="list-style-type: none"> (c) No barriers. (d) The DCENR would probably be responsible for implementation. (e) There is existing National Energy Policy which is proving successful, for example the Bio Energy Action Plan for Ireland. To assist in the development of waste to energy projects, the Government extended REFIT to allow support for the renewable portion of mixed renewable and non renewable generation.
<p>Support 4. Operation support for CHP, incl Feed-in-tariffs</p>	<ul style="list-style-type: none"> (a) There are already FITs in place, i.e. the Renewable Energy Feed In Tariff (REFIT) scheme. (b) Same as REFIT – but perhaps across the board for all CHP supplying a certain level of DH. (c) Sectors currently benefiting from REFIT would not appreciate increased competition from fossil fuelled CHP. (d) The DCENR is responsible for implementation of the REFIT scheme. (e) I would expect CHP/DH projects to develop at an increased rate. Projects such as wind farms could suffer as a result. Overall there is a limited pool of finance available to develop energy projects.
<p>Support 5. Investment grant, DH connection</p>	<ul style="list-style-type: none"> (a) Not currently existing, but similar schemes do exist, such as ReHEAT and Greener Homes Schemes. (b) Same as ReHEAT and Greener Homes Scheme. (c) A decreased capital investment budget for the foreseeable future may prevent new financial support initiatives like this from being established. (d) SEAI would probably be responsible for implementation. (e) I would expect CHP/DH projects to develop at an increased rate for as long as the grants are offered.
<p>Burden 6. Carbon tax</p>	<ul style="list-style-type: none"> (a) A new Carbon took effect in Ireland from this May 1st 2010 on Kerosene, Marked Gas Oil, Liquid Petroleum Gas (LPG), Fuel Oil and Natural Gas. To illustrate, this has resulted in an increase of about 8.4% on Kerosene home heating oil. DHC systems not fired by the fuels above have now gained an advantage. (b) Could be applied in same manner as other taxes. (c) The majority of consumers of heat derived from the above fuels oppose the introduction of this tax. It effectively

	<p>reduces disposable income.</p> <p>(d) The DCENR and Department of Finance would be responsible for implementation.</p> <p>(e) I would expect renewable CHP/DH projects to develop at a slightly increased rate.</p>
<p>Support 7. Favourable loans</p>	<p>(a) Not currently existing at a National level. It could work.</p> <p>(b) Would not require a specific regulatory framework. Could be operated on same technical basis as other loans, just with lower interest repayments.</p> <p>(c) Who would supply the finance? The current lack of credit could prevent this scheme from becoming established.</p> <p>(d) Some of the national banks would probably be responsible for implementation. Possible the Department of Finance.</p> <p>(e) I would expect CHP/DH projects to develop at a marginally increased rate. The loans still have to be paid back, just on slightly better terms. It depends how ready the finance becomes available. What requirements would there be to qualify for such a loan?</p>
<p>Support 8. Investment grant, CHP</p>	<p>(a) There are existing CHP Investment Grant schemes. Specifically they are the CHP Deployment Programme and the Biomass CHP/Anaerobic Digestion (AD) CHP Deployment Programme.</p> <p>(b) Initiated and managed by SEAI. The Sustainable Energy Act, 2002 established a new body in Ireland to be known as the Sustainable Energy Authority of Ireland (SEAI). This Act lists the following functions of the Authority: (1) to promote and assist environmentally and economically sustainable production, supply and use of energy, (2) to promote and assist energy efficiency and renewable sources of energy, (3) to promote and assist the reduction of greenhouse gas emissions and transboundary air pollutants associated with the production, supply and use of energy, (4) to promote and assist the minimising of the impact on the environment of the production, supply and use of energy, (5) to promote and assist research, development and demonstration of technologies connected with the foregoing paragraphs of this subsection, (6) to provide advice, information and guidance.</p> <p>(c) A decreased capital investment budget for the foreseeable</p>

	<p>future may hinder financial support initiatives like this from continuing.</p> <p>(d) SEAI are responsible for implementation of these grant schemes.</p> <p>(e) CHP/DHC projects have developed at an increased rate since the grants have been established. Ireland's national CHP targets under the National Climate Change Strategy are 400 MW_e by 2010 and 800 MW_e by 2020 of installed CHP capacity. At the end of 2008 the total installed active CHP capacity was 298.7 MW_e.</p>
<p>Support 9. Tax deduction, DH</p>	<p>(a) There is a scheme currently existing, called the Accelerated Capital Allowance (ACA) scheme, which provides a tax incentive for companies paying corporation tax and aims to encourage investment in energy efficient equipment. The ACA allows companies to write off 100% of the purchase value of qualifying energy efficient equipment against their profit in the year of purchase. DHC equipment is not currently on the approved list.</p> <p>(b) Same as current ACA scheme.</p> <p>(c) Suppliers of the technologies already on the approved list may not wish to have DHC added to the list of approved equipment, thereby increasing the competition in attracting customers.</p> <p>(d) SEAI are responsible for implementation of the current ACA scheme.</p> <p>(e) I would expect DHC projects would develop at an increased rate for as long as the tax deductions are available.</p>
<p>Planning 10. Building regulations</p>	<p>(a) Currently Part L of the Building Regulations specifies that a minimum of 10kWh/m²/annum contributing to energy use for domestic hot water heating, space heating or cooling energy be provided from renewable energy technologies. Alternatively 4 kWh/m²/annum of electrical energy, or a combination of these which would have equivalent effect. DH systems which take heat from the following sources are eligible: CHP, biomass and geothermal.</p> <p>(b) Enacted into Irish law under the Building Regulations (Part L Amendment) Regulations 2008.</p> <p>(c) The main barrier is construction firms who do not want the extra capital expense.</p>

	<p>(d) The DCENR are responsible for implementation of the Regulations.</p> <p>(e) DHC projects have developed at an increased rate since these Regulations have been introduced. It has lead to a proliferation of small scale block heating systems.</p>
<p>Support 11. Investment grant, renewables</p>	<p>(a) Not currently included in the Greener Homes Scheme, but DHC seems ideally suited to this scheme. The Greener Homes Scheme currently provides assistance to homeowners who intend to purchase a new renewable energy heating system for existing homes. The current list of eligible technologies are: solar heating, heat pumps, wood chip or pellet stoves, wood chip or pellet boilers and wood gasification boilers.</p> <p>(b) Same as Greener Homes and ReHEAT schemes.</p> <p>(c) A decreased capital investment budget for the foreseeable future may prevent new financial support initiatives like this from being established.</p> <p>(d) SEAI would probably be responsible for implementation.</p> <p>(e) I would expect CHP/DHC projects to develop at an increased rate for as long as the grants were offered.</p>
<p>Planning 12. Waste planning & landfill bans</p>	<p>(a) European and National Waste Policy have already lead to the development of several Waste to Energy projects in Ireland. Construction of the Waste to Energy facility at Poolbeg will commence as soon as it is granted a Foreshore Licence. The waste strategy promoted in Ireland for the past 10 – 15 years has placed recovery (e.g. waste to energy) ahead of disposal (e.g. landfill).</p> <p>(b) Plans for Poolbeg Waste to Energy, for instance, have developed as a direct result of Dublin’s structured waste strategy. The Waste Management Plan for the Dublin Region 2005 – 2010 sets out the regional policy framework for Dublin and the strategy for the sustainable management of waste arisings in the region. The policy in the current plan builds on the long-term regional waste strategy and continues to endorse the EU Waste Management Hierarchy. The strategy aims to deliver maximum recycling and use thermal treatment with energy recovery for the treatment of residual wastes and by doing so minimise the use of landfill disposal.</p> <p>(c) Local interest groups campaigning against Waste to Energy</p>

	<p>facilities in their area. Lack of consistency at a political level regarding ways of avoiding landfill.</p> <p>(d) The Department of the Environment, Heritage and Local Government (DoEHLG) and Local Authorities are responsible for implementation.</p> <p>(e) It will result in small number (probably 2 or 3 only) of relatively large DH systems.</p>
--	--

Spain

<p>Top 12 support measures</p>	<p>Analysis for:</p> <ul style="list-style-type: none"> a. Applicability in the country? b. Fitness into the national regulatory frame? c. The barriers for the uptake on the measure in the country (if any)? d. Relevant stakeholder(s) who would be responsible to bring the measure into effect? e. Expected result if the measure is used in the country?
<p>Planning 1. Heat planning and/or zoning</p>	<ul style="list-style-type: none"> a. Strategic energy planning at municipality level is a measure demanded by most stakeholders. Its applicability will depend on each town's resources but it might be reinforced by means of aids and/or directives from the regional institutions such as energy agencies or even from the state administration. b. The current national regulatory frame is based on RITE, where district heating systems are barely mentioned. Currently, energy strategy planning is mostly leaded by regional institutions. Within this frame, heat planning at municipality could be made to fit regional planning directives and complement them with particular measures for each municipality considered. c. At municipality level, lack of training and funds (on smaller cities) will represent the main barriers. d. Town hall majors and councillors, regional energy agencies, consulting firms. e. A greater concern and diffusion of energy efficiency in general and of DHC systems in particular would be achieved. The measure would encourage the discovery of the potentialities of DHC systems and a greater number of viability studies would be conducted.
<p>Support 2. Investment grant, DH distribution</p>	<ul style="list-style-type: none"> a. Even though this is one of the most demanded measures, its short term applicability is dubious due to lack of funds in the central and regional administrations. b. Currently, there exist subventions granted by the regional

	<p>governments to improve efficiency in already existing installations or to construct new ones. This measure would be analogous to those, and could be conducted again at regional level or even through the central administration.</p> <p>c. Lack of funds would be currently the main barrier. In the long term, there should be enough expertise and knowledge to implement fair eligibility criteria. Lack of training might constitute a barrier for this goal.</p> <p>d. Regional energy agencies and governments, central government.</p> <p>e. An increase in the number of DHC systems built would be the result of this measure, as it would overcome the main barrier that the market has to face, i.e. the lack of economical aids to achieve the initial inversion required.</p>
<p>Planning 3. National energy policy</p>	<p>a. A national energy policy might be difficult to implement in a country like Spain where the regions have many asymmetrical purviews, as well as their own energy agencies and plans. Only a very mild energy policy with recommendations prevailing over enforcement would be possible to apply.</p> <p>b. The national energy policy should be consistent with existing legislation or renewable energy plans such as RITE or PANER. A national energy policy should give general recommendations and limits to parameters in the design and implementation of energetic infrastructures, and as such, it should specifically mention district heating and cooling systems.</p> <p>c. The main barrier would be a collision with other energy policies at regional level.</p> <p>d. Central government, national energy efficiency.</p> <p>e. A better coordination of efficiency measures as well as a major knowledge transference between interested actors in the market.</p>
<p>Support 4. Operation support for CHP,</p>	<p>a. Support to CHP is already at work in Spain with notable success.</p> <p>b. Royal Decree 616/2007 is already existing legislation in Spain</p>

<p>incl Feed-in-tariffs</p>	<p>supporting cogeneration systems, but it lacks economical aids to back it up.</p> <ul style="list-style-type: none"> c. Excessive implementation of CHP may cause instabilities or malfunctioning in the power grid. d. National government, power grid managers, tax policy makers. e. An increase in cogeneration systems, but not necessarily an increase on DHC systems, as heating distribution is a major investment and other simpler cogeneration systems might benefit in a higher degree from the measure.
<p>Support 5. Investment grant, DH connection</p>	<ul style="list-style-type: none"> a. Provided there would be enough government or regional funds, this measure would be straightforward to implement. A consistent and fair eligibility criterion should be designed. b. It could be integrated into the national energy policy or into any of the regional energy plans as a concrete measure. c. Lack of funds. d. Regional governments, national government, energy agencies. e. An increase in the trust of potential clients, as well as of investors, due to a better expectancy of potential connections and thus a shorter return time. If the connections of DHC systems increase in the national current market state, a better efficiency might be acquired.
<p>Burden 6. Carbon tax</p>	<ul style="list-style-type: none"> a. Applicability of this measure is currently low, as a global carbon tax might represent a brake to economy and, in the short term, this is very unwise due to the global economical status. In the long term, a global carbon tax might be implemented on a global scale, so its applicability to Spain will have to be as well considered. b. It should be a measure implemented apart from most energy plans and probably presented as a tax decree. c. Global economical constraints. d. National government, European Policy makers, tax policy makers.

	<p>e. A carbon emissions market might be a helpful tool to help develop systems such as DHC which entail a reduction of emissions from a standard system. This measure might also help to further integrate renewable energies in DHC systems.</p>
<p>Support 7. Favourable loans</p>	<p>a. Considering the current state of affairs regarding credit, the applicability of the measure is very low. Nevertheless, in the long term, it might prove as a very useful and flexible tool to encourage investors.</p> <p>b. It might be part of any of the national or regional energy plans/policies, as a concrete measure, economically supported by the appropriate administration.</p> <p>c. Global credit situation.</p> <p>d. Energy agencies, national and regional governments, credit institutions, investors.</p> <p>e. Private initiative would be encouraged to invest in DHC systems as the measure might reduce the return times of the systems.</p>
<p>Support 8. Investment grant, CHP</p>	<p>a. Its short term applicability is dubious due to lack of funds in the central and regional administrations.</p> <p>b. It should be part of the specific legislation concerning CHP systems, RD-616/2007.</p> <p>c. Lack of funds.</p> <p>d. National government, regional government, energy agencies.</p> <p>e. An increase in cogeneration systems, but not necessarily an increase on DHC systems, as heating distribution is a major investment and other simpler cogeneration systems might benefit in a higher degree from the measure.</p>
<p>Support 9. Tax deduction, DH</p>	<p>a. The applicability of this measure is quite high as a tax reduction for investors is encouraged in the current economical frame.</p> <p>b. It should be a measure implemented apart from most energy plans</p>

	<p>and probably presented as a tax decree.</p> <ul style="list-style-type: none"> c. Lack of attention by the government. d. National government, tax policy makers, town hall authorities. e. An increase in the investor's interest in DHC systems. A major number of systems being constructed.
<p>Planning 10. Building regulations</p>	<ul style="list-style-type: none"> a. A modification of the existing building legislation is possible but its applicability is restricted to the condition that it shouldn't modify requirement to existing buildings, as the deployment of the last legislation to this respect is still in process. b. This measure should be framed within the RITE and the CTE, probably encouraging DHC systems through some bonus on energetic certification. c. CTE and RITE are already complicated measures, whose modification would require sensible consideration. d. National government. e. An increasing interest in DHC systems from the professionals of building, leading to an impulsion and better diffusion of the market.
<p>Support 11. Investment grant, renewables</p>	<ul style="list-style-type: none"> a. Its short term applicability is dubious due to lack of funds in the central and regional administrations. b. It should be included within the PANER, the National Action Plan on Renewable Energies. c. Lack of funds. d. National government, national energy agency. e. An incentive to DHC systems supported by renewable energies, and an important part of the whole system may be funded, especially at smaller scale.
<p>Planning 12. Waste</p>	<ul style="list-style-type: none"> a. Planning of waste disposal should be done and its applicability is thus

planning & landfill bans	<p>very high, as there is currently no specific legislation regarding energetic usage of waste.</p> <ul style="list-style-type: none">b. This measure should be framed probably at a regional level, in close work with the municipalities.c. Lack of available space to place the recovery centrals, social opposition to waste management in the surroundings of cities.d. Regional government, energy agencies, town hall authorities.e. An incentive to DHC systems supported by urban waste, or at least of viability studies and diffusion of this type of solution.
--------------------------	---

United Kingdom

<p>Top 12 support measures</p>	<p>Analysis for:</p> <ul style="list-style-type: none"> a. Applicability in the country? b. Fitness into the national regulatory frame? c. The barriers for the uptake on the measure in the country (if any)? d. Relevant stakeholder(s) who would be responsible to bring the measure into effect? e. Expected result if the measure is used in the country?
<p>Planning 1. Heat planning and/or zoning</p>	<p>This fits with the regulatory system, through PPS1. It is entirely appropriate to the UK situation because there is a need to understand where DH is best applied. It provides the evidence base that drives actual projects. It has been in place with some money made available for carrying out heat mapping.</p> <p>Through the planning system there has been encouragement for DH, and its been focused on new-build. This needs to be extended to existing buildings and with a more balanced focus on commercial and civic buildings rather than just residential. It would clearly have strong relevance to dense urban areas.</p> <p>This approach needs to be mandated by central government to local authorities. However, Regional Spatial Strategies have now been scrapped, and there is an apparent move towards 'localism' – this means its up to the local authority and whether they want to follow such an agenda strongly or not.</p> <p>What is needed is to look beyond heat planning itself, and extend to efficient resource planning that, for example, integrates with (item 12 here) waste planning.</p>
<p>Support 2. Investment grant, DH distribution</p>	<p>Grants fit with the regulatory framework and have been used for district heating specifically, as well as for CHP and renewables.</p> <p>However, it is unlikely that further grant mechanisms will be used in the UK. Not only does the current economic situation preclude the availability of capital grant, but in any case the past record is somewhat mixed because the stop/start nature of grant programmes does not assist the growth of a market. Also, for district heating, the time frame needed is invariably longer than the span of a grant programme.</p> <p>It is also felt that, where the long-term nature of district heating</p>

	<p>initiatives can be fully understood and accounted for, grants are actually not required. As a long-term, low-risk investment it needs <i>underwriting</i>. At public sector interest rates such projects could proceed, but not with private sector rates its difficult.</p>
<p>Planning 3. National energy policy</p>	<p>There has been a substantial amount of government time in recent years devoted to putting in place Energy Policy. This is regarded as very important, with relevance to both national and local tiers of governance. Most recently, attention has been given to heat, as well as electricity.</p> <p>There is still a lack of an overall coherent policy. However, the importance in the UK of National Energy Policy has become increasingly clear. It is no longer regarded as adequate to simply leave it to the market: it has become quite clear from the experience of the electricity market that the market alone does not deliver. It is important that there is consensus about what is to be achieved and how we can get there.</p> <p>Recently, it has become evident that there is a strong move towards decarbonising the grid and using electricity for heating through heat pumps. There also tends to be a focus on renewables, such that technologies that simply use fossil fuels more efficiently tend to be overlooked. This includes district heating because most often in the UK this comprises initiating schemes through island schemes using gas-fired CHP.</p> <p>This is therefore a crucial time for demonstrating through evidence the role of district heating, and the importance of gas-fired CHP should have a significant role at least for the next 30 years.</p>
<p>Support 4. Operation support for CHP, incl feed-in-tariffs</p>	<p>UK regulation already makes some provision for CHP through tax breaks which can be realised through the CHP Quality Assurance programme. These include exemption from the Climate Change Levy for Good Quality CHP.</p> <p>However, latterly FITs for CHP has only been allowed for CHP up to 2kWe, but why not extend too larger plant too?</p> <p>There is a danger in the UK that CHP and DH are regarded merely as transitioning technologies that become obsolete after a while, with consequent stranded assets. It is important that CHP should be seen as a transformational technology that allows the growth of DH networks that can then use any heat source. DH networks outlast their technology heat provider solution.</p>
<p>Support 5. Investment</p>	<p>It is unlikely that grant mechanisms will be used in the UK. Not only does the current economic situation preclude the</p>

grant, DH connection	availability of capital grant, but in any case the past record is somewhat mixed because the stop/start nature of grant programmes does not assist the growth of a market.
Burden 6. Carbon tax	<p>Some carbon tax initiatives are in place, such as the Climate Change Levy. This does not, however, apply to the domestic market where gas prices, for example, benefit from a reduced level of VAT. So the CCL could be extended to cover all; this would require new legislation.</p> <p>In general, at a time of economic hardship, burdens in general may be difficult to implement.</p> <p>In the UK the Carbon Reduction Commitment regards all waste heat as zero carbon.</p>
Support 7. Favourable loans	<p>Does not touch the regulatory system, hence no barriers.</p> <p>It may be an opportune time to consider this approach, perhaps through the newly formed Green Investment Bank. It could be applied to ESCO-led implementation, with the loan perhaps over 25-40 years. As a reliable long-term investment it can now be recognized for its significant merits that may not have been attractive during the period of irresponsible lending for bloated returns.</p>
Support 8. Investment grant, CHP	It is unlikely that grant mechanisms will be used in the UK. Not only does the current economic situation preclude the availability of capital grant, but in any case the past record is somewhat mixed because the stop/start nature of grant programmes does not assist the growth of a market.
Support 9. Tax deduction, DH	There is a tax deduction already in place for DH/CHP and DH/renewables through Climate Change Levy exemptions for those technologies. Can also be vulnerable to political whim.
Planning 10. Building regulations	Building regulations support DH by default because of the Zero Carbon Homes/Buildings with the emphasis on renewables generation. However, the focus is on new-build and does not look beyond the development plot.
Support 11. Investment grant, renewables	It is unlikely that grant mechanisms will be used in the UK. Not only does the current economic situation preclude the availability of capital grant, but in any case the past record is somewhat mixed because the stop/start nature of grant programmes does not assist the growth of a market.
Planning	Government is currently looking at its Waste Strategy, with

<p>12. Waste planning & landfill bans</p>	<p>landfill bans for some materials a distinct possibility. There is a question mark currently over what will happen to local planning, because Regional Spatial Planning has been scrapped in favour of a local basis for type/extent of initiative. If it is localized, local authorities will devise their own plans in the context of the Waste Strategy.</p> <p>Waste needs to be regarded as a valuable asset. It should be linked in with municipal resource planning. It is also important that the facts about modern incineration are realized, in place of mis-information that ends up with incinerators placed remote from population centres, that could benefit from the waste heat. It is important that incentives, currently focused on electrical generation only, are extended to include heat.</p>
---	---