Giving the Green Light

Policy Ideas for a Model Environmentally Sustainable Council

Tom Shakespeare

LOCALIS

About Localis

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Localis is an independent think-tank dedicated to issues related to local government and localism. We carry out innovative research, hold a calendar of events and facilitate an ever growing network of members to stimulate and challenge the current orthodoxy of the governance of the UK.

Our philosophy

We believe in a greater devolution of power to the local level. Decisions should be made by those most closely affected, and they should be accountable to the people which they serve. Services should be delivered effectively. People should be given a greater choice of services and the means to influence the ways in which these are delivered.

What we do

Localis aims to provide a link between local government and the key figures in business, academia, the third sector, parliament and the media. We aim to influence the debate on localism, providing innovative and fresh thinking on all areas which local government is concerned with. We have a broad events programme, including roundtable discussions, publication launches and an extensive party conference programme.

Find out more

Please either email info@localis.org.uk or call 0207 340 2660 and we will be pleased to tell you more about the range of services which we offer. You can also sign up for updates or register your interest on our website.

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Executive Summary

This report represents the final results of an accumulation of over six months of discussions, workshops and research into the policies of a model environmentally sustainable Council. The process has been unusual in the sense that the policies in this report were chosen by all those people who have been involved, from stage one where the guiding principles were agreed, through to the final stage where the policies were formed and reformed into a coherent set of recommendations. We are now inviting Councils to trial these ideas, and with our support, to make them a real success. The main points to tease out of the report are:

- **Local government can and should be doing more** – Councils should learn from other Councils. They should set themselves ambitious targets and meet them. They should enshrine environmental thinking into all that they do.
- **There are examples of good practice in the UK and abroad** – There are examples around the world of where ambitious schemes can be met at little or no cost, or which demonstrate enormous benefits for the sustainability of local areas.
- **Councils have a number of cultural barriers to change** – The environment is not considered broadly within the strategy of the Council in most Councils to a sufficient degree. Especially in the current economic climate, there is a danger that it slips off the political radar.
- **Councils are not using the number of low-cost tools at their disposal to enact change** – These include their communications tools, procurement and commissioning, extensive borrowing powers, reserves, trading powers and ability to partner with neighbouring local authorities.
- **There are six policy recommendations for Councils** – These are:

1. Enshrine eco-budgeting into the usual budgeting process
2. Make environmental performance and costs visible
3. Develop and promote travel networking websites
4. Create a green Council transport fleet
5. Ensure medium/large new developments have CHP facilities ahared with their local communities
6. Encourage the development of eco business parks and eco zones

Councils are invited to trial these policies – Councils should contact us at info@localis.org.uk or 0207 340 2660 to find out more.

Chapter 1
The Challenge for Local Government

Climate change is simply not an issue that can be ignored. Scientists almost unanimously agree that emissions need to be reduced urgently before it becomes too late for the billion or so people globally who are expected to be made homeless because of climate change, or for the flooding, rising food prices and economic instability which will affect billions more. Local Government is on the front line in the UK's battle against climate change. It is responsible for 10% of GDP, giving them a huge scope to have an enormous impact on the environmental and social wellbeing of local areas, as well as shaping local economies and services.

> Scientists almost unanimously agree that emissions need to be reduced urgently before it becomes too late for the billion or so people globally who are expected to be made homeless because of climate change

Many Councils have begun to think seriously about climate change, either in formulating an action plan for dealing with the effects of flooding and changing weather conditions or by dealing directly with the problem at hand by acting to reduce emissions across the whole area. Indeed, 90% of all Councils have selected National Indicators 185 and 186 which are specifically designed to address climate change in local areas. Some Councils have been particularly innovative in their approach. For example, Kirklees Council has rolled out free (Council tax rises offset by efficiency savings) home insulation by working with businesses and local residents. Or the Manchester city region which has created a 'Mini-Stern for Manchester' – a groundbreaking approach to plan where resources should be spent to deal with climate change. Or Southampton City Council which has embarked on an ambitious project to construct a district heating scheme linked to geothermal

power and CHP (Combined heat and power). Or Clackmannanshire Council which has explored the potential to build wind turbines on Council-owned land.

What these schemes and others across the country have shown is that Councils really can do something about climate change, and often cost effectively, or even with a financial return to the Council. Each Council area is different, and the approach to dealing with climate change should reflect the individual geography, climate and demographics of the area. But what is clear is that ALL Councils can go much further. There are numerous examples from the UK and around the world of where best practice far outstrips the performance of most Councils. These include:

The Challenge

- **Flanders, Belgium** – Variable charging for collection of household waste has led to 73% recycling rates
- **Kirklees, UK** – Eco-budgeting enshrined into their budget to align with decision making – saving £1million/year
- **Oslo, Norway** – Bio-methane public transport powered by sewage, saving €0.40 per little of fuel
- **Southampton, UK** – District heating scheme powered by geothermal and CHP which is 85% efficient
- **Kalundborg Eco-Industrial Park, Denmark** – A power plant linked to local homes and businesses

Although targets may go some way of enshrining environmental thinking in local government, they will not alone solve the problems which prevent significant action on climate change. Indeed, some would argue, the target culture prevalent in UK local government can actually inhibit real and lasting change as it distorts the actions of the Council and creates a culture of box ticking. We believe that Councils should be both ambitious in their targets for emission cuts,

but should also look to engrain a culture of environmental sustainability in their local areas in order to get to the roots of the problems. We suggest that some of the problems for most Councils are:

The Problems

- **Enshrining eco-thinking** – There is little thought to about climate change and environmental sustainability in major Council decisions and investments (eg PFI, new developments, commissioning, procurement etc)
- **Use of tools** – There is a lack of ambition/knowledge amongst Council leadership about how to use existing powers and tools to deliver low-cost solutions to tackle climate change
- **Sharing best practice** – The transfer of policy ideas between Councils about how to deal with climate change is slow
- **Communication** – Local authorities do not engage sufficiently with local residents on what they can do to make a difference
- **Creating positive price signals** – There are perverse incentives and negative price signals for residents to be more environmentally sustainable
- **Planning** – There is a lack of joined up energy planning to match supply and demand of renewable and efficient energy. Also, most new developments have insufficient regard for environmental goals
- **Community leadership** – Councils do not all lead by example and do not adopt environmentally sustainable behaviour

When formulating the scope and direction of this project, we were keen to ensure that we were not just reiterating the same arguments. Hundreds of reports have be written on the subject of climate change and the role of governments around the world, and we were clear when thinking about how best to approach this project, that we didn't want this to just become another policy document which sits on the shelf being ignored. The process of this project is different in four main ways:

The Process

1. **The principles of the final policies were chosen by the participants in the first session. These were:**
   - Keep it simple, real and relevant
   - Offer opportunities to everyone to improve environmental performance
   - Dare to be different
   - Encourage two way communication between residents and local government
   - Report against environmental goals at all opportunities
   - Balance short term concerns with long-term vision
   - Recognise value and opportunity beyond the obvious
   - Seek meaningful partnerships

2. **The final policies were selected after an innovative process of workshops and discussions**
   - Workshop 1 – What are the principles of a model environmentally sustainable Council
   - Workshop 2 – Experts presented their ideas for policies of a model environmentally sustainable Council
   - Workshop 3 and 4 – Two workshops to discuss the policies of the Council and shape them into a list of 25 policies

3. **The final policies were voted upon by the participants**
   - Votes were collected on each of the 25 policies against environmental benefit, financial implications and the principles which emerged from the first workshop session
   - Six policies emerged

4. **We will be working with Councils in order to help them to trial the policies**
   - Going forward, Councils are invited to implement these ideas
   - We plan to keep track of the process, and are keen for Councils to get in touch to discuss further

In the next chapter we outline the six policy recommendation formed out of the innovative policy development process. This process involved over 50 key thinkers and policy developers from

across local government, business, central government, environmental organisations and think tanks involved in the development of environmental sustainability. Throughout the process we have been very aware of the economic climate in which we find ourselves. We were therefore pleased to see that our final policy recommendations fit nicely within this context, and also that at least two policies emerged which will hopefully ensure that the environmental agenda does not slip off the political radar for local government.

> We were keen to ensure that Councils were made aware of the fairly low-cost or no-cost tools at their disposal in order to meet their environmental targets

We were also keen to ensure that Councils were made aware of the fairly low-cost or no-cost tools at their disposal in order to meet their environmental targets. We have therefore highlighted throughout where these tools can be used to meet the policy objectives. These include:

The Tools

1. **Procurement** – Council procurement provides a massive opportunity for Councils to ensure that all procured services meet green targets. A Council could set a minimum target for all procurement, and make it clear to the private and third sector that they must demonstrate that they meet those targets.
2. **Power of Wellbeing** – The power of wellbeing is a broad reaching power which allows Councils to do anything legal so long as it is in the interests of local residents and their 'wellbeing'. This power is largely unused, but Councils could be more innovative in their use of this power, as well as trading powers and others.
3. **Trading powers** – Councils can begin to charge for services in order to finance schemes which would not otherwise exist. Trading powers may also become significant as Councils begin to move towards making costs of, for example, waste collection visible to local residents, stimulating residents to find more cost effective solutions to waste.

4. **Prudential borrowing** – Councils have access to reserves which most private sector organisations do not. This is potentially an enormous asset for Councils to carry out innovative projects which are of benefit to the local area, with loans paid back through charging powers or low-interest loans. This could be applied to retrofitting projects or community ownership of sustainable energy for example.

5. **Use of reserves** – These could be used to provide low-cost or interest-free loans to encourage retrofitting of existing housing stock, or whatever the Council deems to be appropriate for the environmental benefit of the local area.

6. **Commissioning** – Like procurement, Councils can also use commissioning as a tool to meet environmental targets.

7. **Cross-border collaboration and PFI** – With Council finances set to be hard-hit, the motivation to invest in high-risk projects is likely to be reduced. By working across borders, and with a range of organisations, financial risk can be pooled and spread so as to ensure that investments don't cross the threshold to place Council finances at risk.

8. **Council communications** – The internet is particularly cost effective method of engaging residents with issues to do with climate change, especially with regard to environmental performance in the local area. Council tax bills are another opportunity. One further suggestion would be to ensure that when people move between areas, information about local environmental services is passed onto them, perhaps through an estate agent for example.

9. **Targets** – If used in the right manner, and with the full support of the Council, targets offer an opportunity to demonstrate the commitment of the Council to tackling climate change, and also make it clear to other local industries that they should be expected to meet the same standard, especially through procurement etc.

These tools should form the cornerstone to improve environmental performance. There are a whole range of policies which Councils could adopt, and with these tools, could be both financially sound and environmentally friendly. The full list of policies which have emerged from the discussions is in Appendix 1. The six policies which have been selected so far are outlined below.

Chapter 2
Recommendations for a Model Environmentally Sustainable Council

1. Ingraining eco-budgeting into the usual budgeting process for Council operations

Description

This policy is designed to link the financial planning and investments of a Council to its environmental performance and impact. Most often, the eco-budgeting process involves an analysis of greenhouse gas emissions of each policy or project in terms of kg of CO_2, but it can also include other environmental factors such as water pollution or flooding impact prevention which are directly relevant to the local and surrounding areas. It is designed to be a practical approach to meeting environmental targets which force consideration of strategic issues beyond pure financial concerns. Such areas to address include Council services, public transport, building energy, fleet transport, and others.

> It is a practical approach to engraining national and local targets into the operations of the Council, rather than snapshot targets

What problems does it solve?

- It raises awareness among key decision makers about the environmental impact of their operations
- It creates a clear direction and certainty for planning and procurement to the local area and local businesses
- It is a practical approach to engraining national and local targets into the operations of the Council, rather than snapshot targets which give no indication of the full cumulative environmental impact.

Secondary advantages/opportunities

- It sets the standard for the local area so that local businesses and people begin to think in terms of their environmental impact
- It is also a framework upon which a carbon trading system could be built, which has a number of advantages for extending beyond the public sector to other local organisations
- It provides an opportunity for existing businesses to improve their performance, and for new businesses to emerge to support and supplement existing business
- Participatory carbon budgeting is an idea which could extend the deliberative process of the Council in meeting various trade-offs with collaboration with local residents in meeting their priorities. The idea works by putting a number of options to local residents which they can then vote on based on their priorities
- Publicly releasing the eco-performance information of the Council will also stimulate debate and action from local residents and businesses. For example, the environmental impact of recycling over landfill may help to stimulate and change behaviours among residents, and may make the case stronger for separating eco charges from Council tax so as to send positive price signals to the end user.
- There is also the potential to reduce long-term or large one-off costs associated with environmental damage (eg flooding) as considerations are made as to the potential environmental impact

Considerations

- Cost – It has to be a cost effective policy option. The process itself is not massively dissimilar to the current budgeting process and should be fairly simple to administer. However, there may be some initial administrative work in establishing the carbon impact of certain processes. Once these have been established, these should be publically shared and made accessible to other bodies. The cost of engraining this into the current budgeting process will vary by

Council, but initial trials show that savings can actually be made – especially if they focus on those areas most in need of efficiency savings (fleet operations, business operations and stationary sources)

- Bureaucracy – It must avoid the duplication of current processes
- Certainty to business – The remit of the budget must not fluctuate too wildly over short periods of time, and the business community must understand what it is the Council is trying to achieve so as to avoid confusion and unclear signals to the business community

How it would work

- The Council would set, in collaboration with other bodies, a target which is appropriate for the area, which is also in line with national and international targets.
- The eco-budget is most likely to focus on, at least initially, emissions of the most notable gases, namely CO_2, CH_4, N_2O, SF_6, HFCs and PFCs
- Information is gathered on the emissions for the common processes of the Council, and calculated for the process and lifespan of operations
- The project or policy is regularly updated to ensure that the performance is on track with the original eco-budget
- At the end of the year, as with financial accounts, a statement of environmental accounts is prepared
- These accounts should also be deposited in a single place to ensure that they are compared with other Council areas to ensure full accountability

Case study/examples/evidence of success

Kirklees – Carbon budgets are now fairly common around the world. However, very few organisations in the UK have taken on full scale carbon-budgeting. One example of where it appears to have worked is Kirklees Council, who have set a carbon budget of a 3% reduction per

annum. It is also estimated that by keeping within the carbon budget, the Council will actually save up to £1million in the 09/10 budget.[1]

2. Make environmental performance and costs visible to households on Council tax bills and online

Description

This policy is designed to address the lack of citizen engagement in the environmental performance of the Council. The visibility of environmental performance and costs on residents' Council tax bills would send a message to residents as to the cost of collecting waste as well as the environmental impact of not recycling, for example. It would encourage people to hold the Council to account over their environmental performance, and set the ground for the separation of elements of the Council tax bill to move towards more positive price signals. Other areas to report could include energy and carbon usage.

> This policy would encourage people to hold the Council to account over their environmental performance

What problems does it solve?

- It directly involves local residents in holding the Council to account
- It informs residents about the level of environmental impact, and makes them more aware about their role in achieving CO_2 reductions.
- It informs residents about the cost of various environmental services, and creates a market to reduce cost and improve environmental performance

Secondary advantages/opportunities

- It sets the ground to create positive price signals to test separation of Council tax and charging – opening up market to reduce costs. The Council would need to ensure that price signals were in the right direction.

- Disaggregating the Council tax bill also leaves open the opportunity to begin to provide the public with choices to reduce costs and enable the political will to enable reform
- There is a good linkage with this policy with Conservative party policy on releasing account information to residents. The opportunities to save money on joint reporting through a website or other means are also available
- There is also the opportunity to encourage businesses to release information on their environmental performance in order to engage residents
- According to work carried out by Ipsos Mori[2], Councils do not advertise the work they do sufficiently well. Advertising the work of the Council is shown to actually increase citizen satisfaction with the performance of the Council. This is a good opportunity for Councils to advertise the good work they do, and also increase satisfaction.
- Active communication need not stop at costs and environmental performance. One good idea for active communication is to provide new residents with an information pack about all the local services in the area (including environmental services). This could even operate through estate agents or other operator to save on costs.

Considerations

- Cost – Some extra work in printing and preparing Bills and uploading onto website. It is unlikely to be enormous though
- Political repercussions – People are likely to be surprised about the expenditure of the Council, and the Council may receive increased numbers of increased enquiries. This can only be good for political engagement though

How it would work

- The price of environmental services (amongst others) would be published with a residents Council tax bill

- Carbon budget reporting would be published with the Council tax Bill, including historical performance to track improvement
- Residents would complain/take interest in the cost and performance of the Council
- The Council would reduce the Council tax Bill and pass the charges directly onto the end user
- Thus a new positively price signalled market is created, and environmental performance is improved

Case study/examples/evidence of success

Flanders – Variable charging for collection of household waste has led to 73% recycling rates and shifted the focus onto prevention and reduction. The system works by volume through pre-paid bags or by weight and volume with bins. Municipalities are rewarded for exceeding their targets, and costs are directed back to the producer wherever possible.

Northern Ireland – Government reforms mean households will pay directly for water and sewerage services. Domestic bills will be made up of a fixed charged and a variable charge that according to the government will encourage consumers to use water wisely.

3. Develop and promote travel networking websites
Description

The aim of this policy is to ensure that as few journeys as possible are replicated. Linking and developing existing travel website would link all potential means of travel so that an individual does not have to drive unnecessarily if they do not want to. This may involve creating new sites to pull in various strands of information. This would include car sharing, car club cars, public transport routes, bicycle routes (plus hire points) and other types of transport. This minimises the number of cars on the road, reduces emissions and saves money for travellers. A networked travel map of the local area should gradually emerge – better linking

demand to supply. An important aspect of this policy is the need to publicise the website, and make it accessible to everybody.

What problems does it solve?

- It reduces congestion by reducing the number of cars on the road, and potentially makes public transport more effective by matching supply and demand
- It potentially helps to provide transport solutions to those people who do not usually have access to transport, for example in rural communities.
- It reduces emissions as the number of vehicles on the road are reduced

Secondary advantages/opportunities

- Going forward, there is the potential to link different websites so that longer journeys can be planned, and data shared between different areas
- Show demand on website as well as supply – this could allow new transport systems to emerge, such as a 'bus taxi' which have no formal route, just a standard start and end point. It could also encourage existing public transport providers to develop to meet the needs of the passengers.
- Potential cost savings for passenger and revenue for driver (win-win) by incorporating a payment system into the website. There is therefore potential for this to be run as a business
- There is also the potential to consider creating effective incentive signals to encourage environmentally desirable types of behaviour. For example, bus lanes could be used by car sharers, or parking rates could be reduced for registered regular users of car share schemes, or increased for non-users. Or there could be exemption or reduced rates from congestion charging for car sharers
- There is the potential to link transport interchanges and the planning of new transport needs based on the demand from local residents

- Live transport feeds – With all information in one place it would be easy to have live transport feeds, as with trains, straight to a computer or phone.

Considerations

- Cost – both to develop a new site if it is deemed appropriate, and to promote it. In the long run this cost could be offset by creating the right price signals. Costs could also be offset by introducing a small charge.
- Duplication – There is a concern that by creating a new website which replicates what other sites do to a lesser or greater degree, it is both stepping on the toes of some successful initiatives and not capitalising on their best traits. Where possible, the Council should make the most of existing websites and data and incorporate all their best elements. The duplication is also increased by the fact that Council borders do not neatly align with transport routes, and Councils would have to work with their neighbours to deliver the most effective solution.
- Behavioural change – Getting car users to change their behaviour is likely to be a challenge, although publicity and a user friendly website may go some way. Price signals may also help.
- Responsibility – Some would argue that it is not the responsibility of the Council to be involved in this, and that businesses or enterprises are best placed to take on the challenge. This is perfectly feasible, and could easily be run as an environmental enterprise or business

How it would work

- The Council (probably upper tier) would examine what transport services are already provided in the area
- They would examine what existing transport linkage services and websites are provided in the area
- Commission a new or existing company to build and run a website which links all the existing transport websites so as to

provide a seamless service to residents, and/or promote existing websites

- Provide financial resources to regularly improve the service provided
- Look to find ways of receiving a return for investment
- Look to work with other local authorities and organisations to provide an integrated transport service

Case study/examples/evidence of success

Carshare, UK – There is a Uk website (www.carshare.com) which links to all other sites in the country which help to link people to other people in their area.

Streetcar, UK – A private company which provides car club cars in a handful of UK cities, minimising the need for car ownership, but charging for per hour usage. Generally conveniently located near.

Schoolrun, UK – A website linking parents and children with others who are doing the same school run.

Bus taxis in Latin American Countries and South Africa – A mix of both private and conventional bus transport often with a fixed or semifixed route but that stops anywhere to pick up or drop off passengers. It frequently does not have fixed time schedules but is a cheap and efficient way of transportation. They tend to work well in cities, but could be extended with sufficient thought to more rural areas too.

4. Create a green Council transport fleet

Description

The aim of this policy is to reduce the environmental impact of all transport activity generated by the Council as a whole. This will include journeys to work by staff, travel on Council business and industrial fleet vehicles such as dustcart. The nature of the green Council fleet will be dependent on the local energy source. For example, in areas with high renewable electricity potential, vehicles could run on electricity or in other areas they could run off anaerobic digester facilities linked to fuel production.

What problems does it solve?

- Council staff could use 'Car club' or car sharing schemes instead of fleet cars to minimise cars on the road and pressure on car parking spaces. Or Councils could encourage more staff to use public transport – possibly with incentives. Or staff could even be encouraged to work from home.
- It reduces vehicles on the road and pollution from vehicle exhausts
- Reducing the number of vehicles and using more efficient and environmentally friendly vehicles also improves air quality and reduces noise
- It sets an example to local residents that the Council takes the environment seriously

Secondary advantages/opportunities

- There is an opportunity to link the use of organic waste and sewage to fuel for the transport fleet. This drastically reduces the cost of fuel for the Council, and could save significant sums of money in the longterm
- Depending on the nature of the Council transport fleet, it also has the potential to create an infrastructure which can also be used by local residents eg electric charging points, battery swap stations or bio-methane filling stations.
- This is also an opportunity to rethink the role of the dustcart. This could include looking to minimise the journeys a dustcart makes; including electronic devices to assess a wider street scene which reports back to the Council; or calculating the amount of waste disposed by residents

Considerations

- Cost – Replacing existing Council transport is likely to be expensive, and may need to be phased in. Encouraging carshare schemes and working from home is however likely to save money, and could be implemented immediately

How it would work

- Immediately look to implement low cost or money saving schemes to reduce the environmental impact of Council transport
- Carry out a energy audit for potential sources of renewable energy
- Carry out a plan to match the potential renewable energy sources to the creation of a green Council transport fleet. Create and plan the infrastructure for the fleet
- Phase in green fleet vehicles

Case study/examples/evidence of success

Swansea – They have new slimline and hybrid buses. Swansea was named "Welsh Local Authority of the Year" at the National Transport Awards for its Local Transport Plan that included the Park and Ride (that provides 3 different locations for commuters to leave their vehicles and other means of transport into the city centre relieving congestion) and the Swansea Metro scheme, a £2.2 million pound investment to run new slimline and hybrid buses that are environmentally friendly.

Oslo – The city of Oslo through their Department of Environment and Transport has introduced environmental management and efficiency into the whole municipal organisation, environmentally certifying all agencies and units and practicing green purchase. The city's public buses will have their engines modified to run on biomethane (a by-product of raw sewage) that is estimated to save €0,40 per litre of fuel. The buses will also be quieter thus reducing noise pollution in the city.

Iceland – Is planning to become entirely fossil-fuel free by 2050 converting the country to a hydrogen economy. As part of a wider project called Clean Urban Transport for Europe (Cute), an EU-funded, £35m, two-year trial backed by BP and Shell they have started introducing hydrogen powered buses fuelled with liquid hydrogen that is stored on the roof beneath the bulk of a fibreglass cowling. There it is mixed with oxygen to produce the electricity that drives the vehicle.

5. Ensure medium/large new developments have CHP facilities shared with local communities

Description

This policy is about ensuring that new developments are fitted with efficient heat and power sources which can potentially be shared with local areas in order to make the most of potential energy savings and therefore cut carbon emissions. Power stations, for example, throw away the same amount of heat as is needed to provide hot water and heating for every building in the UK. If power stations were sited close to where heat is needed – say, near towns and villages or on industrial sites – then this heat can be captured and supplied to homes and businesses or used in industrial processes. This could also be applied to other industries located near other homes. The heat capture technology exists it is called Combined Heat and Power (or CHP), and CHP plants can be as much as 95 per cent efficient, compared to the old fashioned power plants we presently use, which are, on average, 38 per cent efficient.

> Power stations, for example, throw away the same amount of heat as is needed to provide hot water and heating for every building in the UK

In the UK, CHP has enormous potential. On industrial sites where huge quantities of heat are needed, CHP plants can be similarly big. Vast untapped potential remains. On a relatively small number of industrial sites in the UK, there's enough CHP potential to provide the same electricity generating capacity as the whole of the proposed new generation of nuclear reactors combined. Such plants would take only a few years to build, would provide heat as well as electricity and, according to studies, would cost a fraction of the price.

What problems does it solve?

- Piping heat from a smaller, ultra-efficient CHP unit within a town cuts consumers heating bills and provides a local source of heating and electricity in the most efficient way possible.

- It cuts emissions and reduces fuel dependency immediately.
- Secondary advantages/opportunities
- In addition to industrial sites, CHP works well in communities (especially cities) where CHP plants can be much smaller, and are extremely quiet and unobtrusive
- Generates more than double the expected output of electricity from the proposed nuclear programme – in the same time frame, for less money and without the legacy of nuclear waste.
- CHP can use diverse fuels in the same boilers. This means that, as more greener fuels like biomass become available, they can be used in the CHP plants instead - with no need to refit the equipment, but with an immediate reduction in CO_2 emissions and with the knowledge that these precious green fuels are also being used in the most efficient way possible.
- Smart metering also allows the potential to match local heat and power demand. For example, matching load power demand of a school which is closed at night to the requirements of housing when demand is high would be a sensible solution. Smart meters also allow homes to directly view their energy usage and to act upon it, thus reducing the need to aggregate energy bills and incentivise less usage.
- This is also an opportunity to begin to roll out the retrofitting of renewable energy through low-cost loans, and begin to create the infrastructure to buy or sell surplus heat and energy.

Considerations

- Cost – The capital outlay is likely to be large, whether the cost is met by the private or public sector. Councils will have to be quite innovative in order to match the funding of the project to the potential return. The costs to end users is likely to be dramatically reduced, and perhaps there is scope to levy a small annual charge on them to recoup the outlay.

- Development – There is the potential that by requiring developers to factor in heating and power plans may put some developers off. This needs to be considered by the Council

How it would work

- The Council should explore options for funding and receiving a return for demanding that CHP be installed into new developments
- The Council should create rules to ensure that heat and energy of new developments must be supplied by a significant proportion of renewable energy or have CHP plants, linked to the local community.
- All existing Council buildings should be retrofitted with CHP or renewable energy sources
- The Council should then look to supply low cost loans to new developers and retrofitting through Prudential borrowing powers for example.

Case study/examples/evidence of success

Immingham CHP plant – Europe's largest CHP plant which supplies two refineries in Humberside, with heat, steam and power. It is about to be expanded to reach the same electricity generating capacity as the UK's flagship nuclear power station, Sizewell B.

Southampton – It began pumping heat from the geothermal borehole through a district heating network. It provides heat and cooling to over a thousand residential properties, to several large office buildings, a hospital, health clinic, etc. The high-demand of its energy has led to the commissioning of a new larger CHP plant in 2008. It saves over 12,000 tonnes of carbon emissions per year and is 85% efficient.

Woking – Since 1990, Woking Borough Council has used CHP as part of the energy efficiency and environmental policies. Its aim is to supply heat, hot water, air conditioning and electricity to the Borough's swimming pool and leisure centre. By using CHP they have reduced Carbon emissions by 649 tonnes per year.

6. Encourage the development of eco-Business Parks and eco-zones

Description

The eco-industrial park concept as an outgrowth of industrial ecology principles in which industrial activities are interconnected with one another and their supporting ecological systems. They can be located on the outskirts of towns, or simply be eco-zones or clusters of businesses within towns. The advantage of such clusters is the ability to share resources and achieve the economies of scale which might not otherwise have been possible. This can apply to waste, transport and energy. An example could be a park that contains a saw mill, a biomass plant and a couple of high energy users. The aim is to minimise waste through the value chain.

What problems does it solve?

- Business derives cost savings and new revenues; shared services; reduced regulatory burden; and increased competitiveness.
- The community enjoys a cleaner, healthier environment; business and job development; an attraction for recruitment; and an end to conflict between the economy and the environment.
- Government receives increased tax revenues; reduced enforcement burden; reduced costs of environmental and health damage; and reduced demand on municipal infrastructure.
- For the environment there is reduced demand on finite resources; decreased local and global pollution; increased use of renewable energy and materials; and an overall renewal of natural systems.

Secondary advantages/opportunities

- The parks could attract companies from all around the UK - particularly in the rapidly growing environmental technologies and services sector.

- This is an opportunity to encourage the growth of new industry to locate and encourage new jobs
- Potential to create 'civic exchange' sites located near such businesses which would also be accessible to residents and other businesses.

Considerations

- **Publicity** – One of the biggest challenges could be in linking businesses together for mutual gain. This may require greater levels of publicity and dialogue with the business community
- **How to align what is needed with what is available** – i.e. will waste products need conditioning before they can be used? Which party pays for this? How does that process affect the viability?
- **How to bring together multiple waste producers to provide the required scale** – i.e. if a restaurant produces enough chip fat every day to provide half a tank of fuel how is the waste of all restaurants combined to viably serve the market?
- **What do councils have that can solve some of these problems** – waste collection fleet, recycling sites, local knowledge etc

How it would work

- Councils should explore the options to encourage businesses to co-locate and use the waste of other organisations, composting, bio-waste CHP etc. This could include preferential business rates, cheap waste collection of even the use of council land or facilities for waste consolidation

Case study/examples/evidence of success

Kalundborg Eco-Industrial Park, Denmark – At the centre is a 1500MW coal fired power plant which has material and energy links with the community and several other companies. Surplus heat from

this power plant is used to heat 3500 local homes in addition to a nearby fish farm, whose sludge is then sold as a fertilizer. Steam from the power plant is sold to Novo Nordisk, a pharmaceutical and enzyme manufacturer, in addition to a Statoil plant. This reuse of heat reduces the amount thermal pollution discharged to a nearby fjord. Additionally, a by-product from the power plant's sulfur dioxide scrubber contains gypsum, which is sold to a wallboard manufacturer. Almost all of the manufacturer's gypsum needs are met this way, which reduces the amount of open-pit mining needed. Furthermore, fly ash and clinker from the power plant is used for road building and cement production

Burnside Industrial Park, Canada – One of the best known industrial parks around the world from an environmental management perspective. It has 1500 companies operating with over 15000 employees that have been improving their environmental performance and developing profitable partnerships. The different businesses cooperate with each other and with the local community in an attempt to reduce waste and pollution, efficiently share resources (such as information, materials, water, energy, infrastructure, and natural resources), and help achieve sustainable development, with the intention of increasing economic gains and improving environmental quality. The park has an Eco-Efficiency Centre (dependent of local Dalhousie University) that is a non-profit, non-government environmental management support centre for small- and medium-sized enterprises. The Centre was founded upon the principles of eco-efficiency, a management philosophy that seeks to achieve strengthened financial performance by minimizing the resources necessary to produce, consume and dispose of a particular product or service. This in turn minimizes the negative environmental impacts.

Chapter 3
Going Forward

The aim of this project has been to build some momentum behind some really good ideas for local government to adopt and adapt in order to meet the sustainability criteria for their area. A number of Councils have already expressed an interest in working with us on trialling these ideas, but we would welcome more Councils to work with us to achieve

The scale of the environmental problems we face in the future are likely to be enormous, and the predictions of a number of scientists for the future are frightening. The case to try and reverse some of the impacts of climate change is impressively strong, and local government needs to act now. But with the most serious recession for years firmly upon us, Councils also need to be able to achieve their green agenda for less cost. Even if climate change were an inevitability, the measures and policies that have emerged throughout this project go some way to making local communities more self-sustainable – a desirable end in its own right, which cannot and should not be undervalued.

If any Councils are interested in pursuing these policies, or are already trialling innovative ideas that would like to tell us about, please call 0207 340 2660 or email info@localis.org.uk.

Appendix

Long list of policies which emerged from the discussions and workshops
Theme – Leading by Example

1. Create a green Council transport fleet
- Creating a green transport fleet sets a good public-facing example for the local area.
- It could involve bio-methane or electric vehicles
- The wide coverage of council vehicles and the predictability of routes would allow for creation of new infrastructure. This could include:
    - Battery swap stations or charge points for electric vehicles
    - Food waste collection leading to bio-methane generation
- This is also an opportunity to look again at what a dustcart or fleet car really looks like and has the capacity to do (including a wider 'street-scene' role)
- Council staff could use 'Car club' or car sharing schemes instead of fleet cars to minimise cars on the road. Or encourage more staff to use public transport – possibly with incentives

2. Use a new kind of eco-procurement
- Procurement is one of the most powerful tools that Councils have to ensure a green Council. By inserting clear and stringent sustainability requirements into all procurement processes across services, housing and development, food, energy, packaging will have a massive impact

3. Utilise unused space for green initiatives
- There are vast swathes of unused industrial or scrub land. By bringing unused industrial land into use by creating temporary

green spaces or allotments, it excites interest in natural life by getting schools and community clubs involved, and creates new green spaces

- This is also a chance to think about space in new ways – green walls for example, or perhaps green roofs – which could even be rented out to other organisations to install solar panels or other initiatives.

4. Enshrine eco-budgeting into the usual budgeting process

- By ensuring that CO_2 is factored into any normally commercial decision – it stimulates challenge developers to improve. It also ensures that all financial decisions are considered within an environmental context.
- This will be more powerful if information is released to residents and industry so that they are clear about the expectations of the Council, and where improvements need to be made. By releasing the eco impact of landfill over recycling – this might also change behaviours.
- An analysis of the maximum return vs environmental benefits should be applied to investments and different policy proposals – for example, the eco impact of recycling costs based on tonnage may need to be challenged.

5. Make environmental performance and costs visible and create positive price signals

- By disaggregating the Council tax bill it provides clear political drivers for change. For example, the effect might be to move away from landfill and begin to send the right price signals to the public
- Disaggregating the Council tax bill also leaves open the opportunity to begin to provide the public with choices to reduce costs and enable the political will to enable reform
- Another option would be to release the environmental performance of the Council with the tax bill, which could also extend to businesses too via a website

- By publishing the historical changes of environmental perform-ance, it also begins to set a precedent for business and for competition between Councils. A heat map would also be a good way of analysing this.
- The transparency of information about environmental performance across a whole range of areas could be possible – providing more information in the hands of the public and business to do some-thing about it.
- Active communication to residents could also act as a good way of ensuring that people are more active in achieving environmen-tal targets. This could operate through an estate agent with a 'welcome pack' about the location of recycling sites for example, on what can be recycled and where.

6. Carry out an smart audit and action plan

- A comprehensive audit to match supply and demand of energy, or to establish where improvements are most needed. This may require more smart metering, which would have the added benefit of being able to disaggregate energy bills and make indi-vidual households/properties accountable for their resource usage.
- The audit should be used to form the basis of an action plan Eg Chicago action plan. Targets can be set, and because they are decided locally, they should be realistic
- The plan should also include forward planning with multiple agen-cies to ensure that work is not duplicated eg digging up the road twice for different services twice

Theme – Connecting Interests

7. Create a travel networking website

- The aim is to ensure that as few journeys are replicated as possi-ble by linking people who do the same or similar journey, and can therefore car share.

- All transport types could be linked – from car club drivers to people driving to work to public transport with potential money to be saved by all parties. An incentives mechanism would ensure that those people who offered to pick people up were rewarded, and those people who received a lift would be able to travel at lower than their usual cost. This could work for commuters or even for people travelling to school
- It also potentially provides an opportunity for a profit, but also a new industry in 'bus taxis', like those found in South Africa or Latin America which have no formal route but a standard start and destination point. Information would be available to third parties looking to provide such services to those people looking for transport. In short – linking demand with supply.
- Incentives could also be provided to car sharers in congestion zones, such as in New York or LA where there are 'car-share' lanes, or potentially a discount on congestion charges

8. Create civic 'exchange' sites
- The aim of this initiative is to link 'waste' resources on a commercial scale with the demand for such resources. For example – surplus building materials. It would require a site, and a 'gate fee' for maintenance. The gate fee would be lower than the tip to encourage an exchange of goods.
- This could also potentially be applied on a residential level
- Waste contractors could collect reusables and deposit them at the site, and this could be coordinated across Council areas to reduce costs etc
- A similar or complimentary scheme could be an online repository which would again aim to match the supply and demand for resources

9. Share resources with other local authorities or other organisations
- Renewable energy spikes can be met by pooling renewable sources

- Communities could be engaged by linking net user authorities with net consumer authorities. Eg Lancashire County Council (wind production) with Manchester City Council

10. Ensure medium/large new developments have CHP facilities shared with local communities

- Balance of use – schools/hospitals peak use during day. Local domestic use peaks morning and evening. This would potentially reduce the bills of local people, and create a possible revenue stream for the facility

Theme – Incentivising Sustainable behaviour:

11. Provide favourable financial support to improve environmental performance

- Councils can use their borrowing powers and access to loans to fund (through secured or unsecured loans) more efficient and sustainable environmental solutions. This could be applied across a whole range of schemes from bikes to community composters, to smart meters to new boilers or home insulation. It could even be applied to an anaerobic digestion/gasification/pyrolysis facility linked to CHP to provide local energy and power. This would most likely operate through either individual households, or in some cases as a cooperative eg Hackney rocket
- Another approach, as with the Kirklees home insulation scheme would be to have a small increase in Council tax which sees bills reduce overall by £200 – a net win for the Council taxpayer

12. Encourage Car Clubs

- Priority Parking
- Use of bus lanes
- Exemption from congestion charging

13. "Incubate" businesses that solve problems

- If a business has a new technology or an innovative process we will support them with credit, facilities or through procurement
- Examples would include businesses that are net consumers of waste, or businesses with energy-saving technology

14. Link the energy efficiency of a property with cost drivers

- This will require smart meters in buildings in order to assess the energy usage. For those properties which meet certain standards, the Council could provide incentives such as parking concessions, planning permission for improvements, discounts at libraries, gyms etc or a direct financial reward linked to Council tax bills as in Sweden

Theme – Investing in the infrastructure for sustainability

15. Design town centres for pedestrians and cyclists

- This is a 'whole system' approach to the management of streets and roads which, for example make road space to make cycling safer eg Paris – remove parking if necessary, with more areas to store bikes
- Other ideas include controlling distribution (vehicle movements) in cities – managing road space as a commodity, possibly incorporating more underground parking

16. Use planning powers to encourage high quality, high density sustainable communities

- Densification can bring about environmental benefits. Reduced travel, efficient housing, energy distribution etc
- In the last 50 years, densification has been associated with reduced quality of the local environment
- However, Kensington and Chelsea is one of the most densly populated areas in Europe. The Victorian mansion block presents a model for high density, high quality housing

- Homes should not be treated in isolation and should be linked to jobs, shops etc, and integrated transport and energy
- All new builds should also be considered within wider parameters such as a life cycle analysis
- All large scale developments should also include renewable and efficient energy

Theme – Creating New Exemplars

17. Create an Eco-Business Park

- Trialling the concept of "industrial eco-systems" the council would establish a business park in which the incumbents would use each other's by-products. An example could be a park that contains a saw mill, a bio mass plant and a couple of high energy users. The aim is to minimise waste through the value chain.
- Explicit requirements to locate organisations which could utilise the waste of other organisations
- There are further opportunities such as bio-waste CHP, co-ordinated waste collections and on-site composting

18. Create "zero carbon" streets

- Looking for 90+% reduction in carbon use on a very small scale
- Drives best practice, up-skills the community and creates a ripple effect

Theme – Rationalising current systems

19. Rationalise waste collection by combining commercial and domestic rounds

- This would not only make it cheaper and more efficient but would enable "exchange sites" to operate more simply
- Could eventually re-shape into a pick-up and delivery model rather than a pick-up and dump.
- Combine commercial and domestic waste, white good collection

20. Turning off street lights during periods of minimum use

- Save money, save energy, send the right message

21. Work with business to create standardised refillable liquid containers

- Create standard sized containers and subsidise use
- Possibly create a deposit scheme in certain shops or public places whereby containers can be recollected with a small financial return

Theme – Communicating environmental messages

22. Rebranding waste and reuse

- Not waste – resource
- Make recycling fun – 'feed the cow', 'fuel the rocket'

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About the Authors

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Tom joined Localis in June 2008, having previously worked for Policy Exchange where he contributed to a report on party financing called 'Paying for the Party'. He graduated in both Mechanical Engineering (BEng) and Politics (MA) at the University of Nottingham in 2007. His final year dissertation looked into the potential application of the second law of thermodynamics to agent-based models of human action and ethnic conflict. Tom leads on research for Localis, and amongst other things, has written several reports, including 'Information, Information, Information' and 'The Future of Regional Governance'.