

## 50 WAYS TO BOOST CHP!

### CHPA Policy Briefing

June 2005

*“CHP “the single biggest EU solution to the Kyoto targets”.*

EU Environment Ministers Council commissioned report. Summer 2004

*“CHP [is] the most cost-effective single non-transport measure in the Climate Change Programme”*

DEFRA Draft CHP Strategy

*“CHP is struggling...critically, because of the absence of strong Government support for CHP. But if the Government wishes to make its target for CHP real, as distinct from merely declaratory, it must make some real decisions for CHP, as it has for renewables.”*

Director-General OFGEM 2002

## INTRODUCTION

High efficiency Combined Heat and Power (CHP) cuts consumers' energy bills, tackles climate change, provides affordable warmth and boosts the UK's competitiveness and security of supply. Yet it remains the poor relation of the Government's energy strategy.

The Government has said that:

*"CHP [is] the most cost-effective single non-transport measure in the Climate Change Programme"*<sup>1</sup>

This view was supported at last Summer's EU Environment Minister's meeting, where CHP was described as

*"the single biggest EU solution to the Kyoto targets".*<sup>2</sup>

Every 1 MW of CHP operating in the UK helps reduce carbon emissions by up to 900 tonnes of carbon every year<sup>3</sup>. Current CHP capacity of approximately 5000 MW is already helping deliver savings of over 4 million tonnes of carbon annually, one of the largest single carbon reduction measures.

The Prime Minister has made clear his commitment to significantly reduce emissions of the main global warming gas carbon dioxide (CO<sub>2</sub>). However, Government is belatedly acknowledging that many of its climate change policies are not delivering the real level of cuts in carbon emissions required, and that it is now significantly off-track in achieving its domestic target of a 20% cut in carbon emissions by 2010.

There remains huge potential for CHP in the UK. However, over the past few years, Government has not only helped create a hostile environment for customers and developers to invest in CHP but has also, for the most part, simply been an observer as the industry has contracted and declined. The situation is best summarised by the Institute for Public Policy Research (IPPR) who have commented that:

*"CHP is the poor relation of low carbon generation and the Government has so far failed to tackle the problem of low implementation of CHP, despite its many promises to do so."*<sup>4</sup>

Over the past few years the Government has failed to effectively support or bring forward any significant new policies to boost the use of CHP, particularly in industry.

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<sup>1</sup> DEFRA *Draft CHP Strategy* May 2002

<sup>2</sup> *Examples of eco efficient innovations, Final Report*, May 2004 PricewaterhouseCoopers study for the Dutch Ministry of Housing, Spatial Planning and Environment

<sup>3</sup> p29 *Savings in carbon emissions resulting from the use of Combined Heat and Power*, DTI Energy Trends June 2003

<sup>4</sup> *The Burning Question*, November 2004 IPPR

To break out of this state of neglect, in this paper the Association puts forward 50 recommendations to Government. The introduction of a mixture of effective support mechanisms and policies to stimulate market demand will not only help the Government realise its 2010 CHP target, but will also work to achieve a wider CHP potential of 20,000 MW by 2020. Together they will help set the UK on the path to achieving the Prime Minister's longer term 60% carbon reduction target.

### **CHP: The Benefits**

CHP currently operates on over 1500 schemes across the country, ranging from sheltered housing projects and hospitals to city-wide district energy networks and major industrial schemes.

CHP is at work helping to reduce energy costs at Buckingham Palace, and the Houses of Parliament, as well at DEFRA, ODPM's and OFGEM's main offices.

The greater use of CHP contributes to all four pillars of the Government's energy policy goals:

- *reducing carbon emissions*

Every 1 MW of CHP operating in the UK helps reduce carbon emissions by 700-900 tonnes of carbon every year<sup>5</sup> After basic energy efficiency measures, CHP has been recognised as the most cost-effective carbon abatement measure.<sup>6</sup>

The then Conservative Government realised the carbon-saving potential of CHP early into discussions on climate change. Following the first Earth Summit negotiations in 1992, the Government quickly established the first target for CHP use in 1993 of 4 GW<sup>7</sup> by 2000; with the rapid development of schemes at this time, this target was raised the following year to 5 GW. The present Government increased this in 2000, establishing the current 10,000 MW 2010 target.

- *maintaining the reliability of our energy supplies*

CHP is an example of distributed generation. By generating power onsite where the energy is needed, CHP helps avoid the transmission and distribution losses experienced by larger generating plant.<sup>8</sup> Also,

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<sup>5</sup> p29 *Savings in carbon emissions resulting from the use of Combined Heat and Power*, DTI Energy Trends June 2003

<sup>6</sup> Table 6.1 Carbon Abatement Costs, *The Energy Review*, Cabinet Office, 2002

<sup>7</sup> 1 GW (gigawatt) = 1000 MW (megawatt)

<sup>8</sup> Approximately 7.5% of total electricity supplied in the UK is wasted every year due to the delivery of electricity over the electricity transmission and distribution grids – approximately 28,000 GWh.

by being close to the consumer , CHP can put what is otherwise wasted heat to work. CHP's overall fuel efficiency is around 70-90%<sup>9</sup>, compared with levels of 35% and 45% for coal and Combined Cycle Gas Turbine (CCGT) plant.

As natural gas is increasingly imported to the UK, this higher level of conversion efficiency in CHP plant will ensure that the fuel is used most effectively, minimising waste and thereby improving the UK's security of supply.

- *promoting competitive energy markets*

CHP provides customers with a powerful cost-saving opportunity. Existing users of CHP typically save around 20% of their energy costs, a total saving of over £650 million per year across all UK CHP schemes<sup>10</sup>. For many organisations, CHP is the measure that offers the most significant single opportunity to reduce costs as well as improve environmental performance.

- *ensuring that every home is adequately and affordably heated*

Savings from higher efficiency CHP can be passed on through lower charges to consumers. CHP's delivery of affordable warmth reduces fuel poverty, improves comfort standards and reduces the incidence of cold-related and respiratory illnesses such as hypothermia and asthma. The potential for community heating as a solution to 'hard to treat homes' has now been highlighted by the Government's Fuel Poverty Advisory Group.<sup>11</sup>

## **CHP : The UK Potential**

The UK has the widest range of CHP plant operating: from the innovative 1 kW residential micro-CHP unit (where the UK is taking a world lead) now being rolled-out by Powergen, to the largest single CHP plant in Europe, operated by ConocoPhillips, at 740 MW, which provides major quantities of heat and power to a large chemicals complex in Humberside.

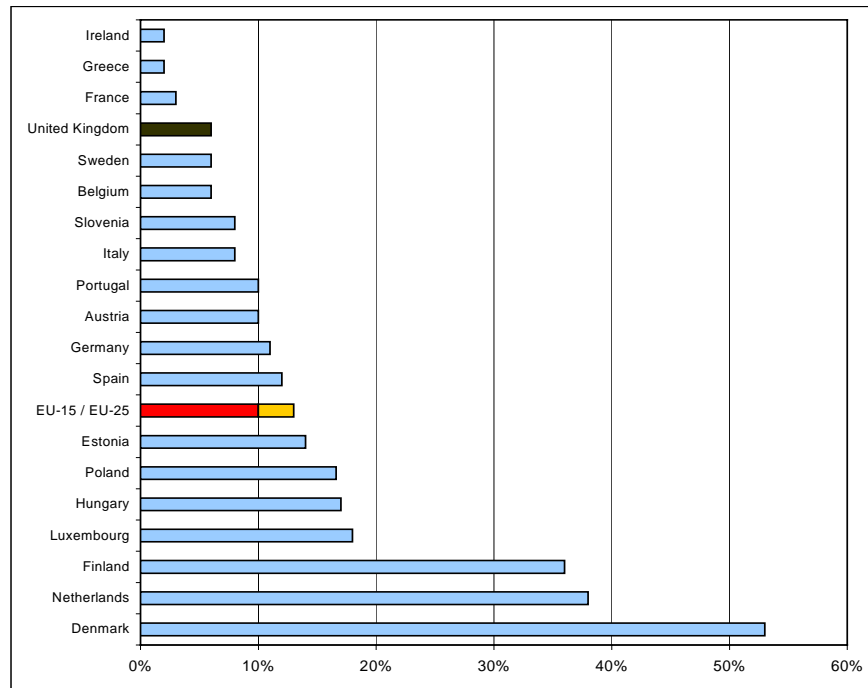
UK CHP use has remained at approximately 6% of total electricity supplied for the past 10 years. This is well below the EU average and compares poorly with other Members States who have achieved levels as high as 40% (see Graph 1 below).

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<sup>9</sup> P 47, *Energy White Paper*, DTI

<sup>10</sup> *Manager's Guide to Packaged CHP Systems*, DEFRA/CHPClub 2001

<sup>11</sup> *Fuel Poverty Advisory Group (for England)*, Third Annual Report, 2004/5



Graph 1: Share of cogenerated electricity across Europe<sup>12</sup>

The scope for CHP in the UK is large: current CHP capacity is around 5,000 MW however Government has outlined a potential for up to six times this amount across industrial, commercial and residential applications, as detailed below:

- Industrial Sector & Commercial sector

The potential for further growth in CHP capacity in the UK industrial and commercial sectors is substantial. The last Government analysis undertaken has highlighted that up to a further 17,000 MW<sup>13</sup> of CHP capacity is achievable.

The Association's analysis indicates that the level of penetration of CHP engines in building applications (typically leisure centres, hotels, hospitals, universities), remains very low in the UK compared to many other EU members: a vast potential for improving the energy efficiency of both existing and new build installations through the use of CHP remains to be exploited.

- Community Heating

The UK power sector wastes enough heat each year to heat every home in Britain<sup>14</sup>. The UK is at the bottom of the EU table in terms of penetration

<sup>12</sup> COGEN Europe: 2005

<sup>13</sup> *Assessment of CHP Potential*, Report produced for DETR, ETSU 1997

<sup>14</sup> *Energy – the Changing Climate*, Royal Commission on Environmental Pollution, 2000

of community heating in the national building stock, despite extremely suitable urban environments with high levels of building density.

The Royal Commission on Environmental Pollution's influential climate change report of 2000, highlighted that the UK has given little consideration to the efficient use of heat. However, the huge potential for community heating schemes was recently determined in a study commissioned by the Carbon Trust. Compared with the 44 MW of CHP currently operating in residential group heating schemes, this report indicated a UK potential for community heating of over 18,000 MW of CHP<sup>15</sup> (using public sector capital at a discount rate of 6%), with London, Birmingham, Manchester, Newcastle and Sheffield identified as key development areas.

- **MicroCHP**

Micro CHP is an innovative new technology, which has been identified as having significant potential towards reducing carbon emissions. A unit would replace a conventional boiler, which have a current replacement rate of approximately 1.3 million units per year. Key developers believe that by capturing even a small proportion of this market would deliver up to 400 MW within a decade of the units being fully available in the market.

It is clear that across the range of technologies and generation sizes available, the UK has scarcely tapped the level of potential for CHP that exists. This is without consideration of further opportunities which will arise as new technology options become available: these could include biomass fired CHP, fuel cells, anaerobic digestion, greater demand for cooling (trigeneration) and geothermal based schemes.

### **CHP: What's gone wrong?**

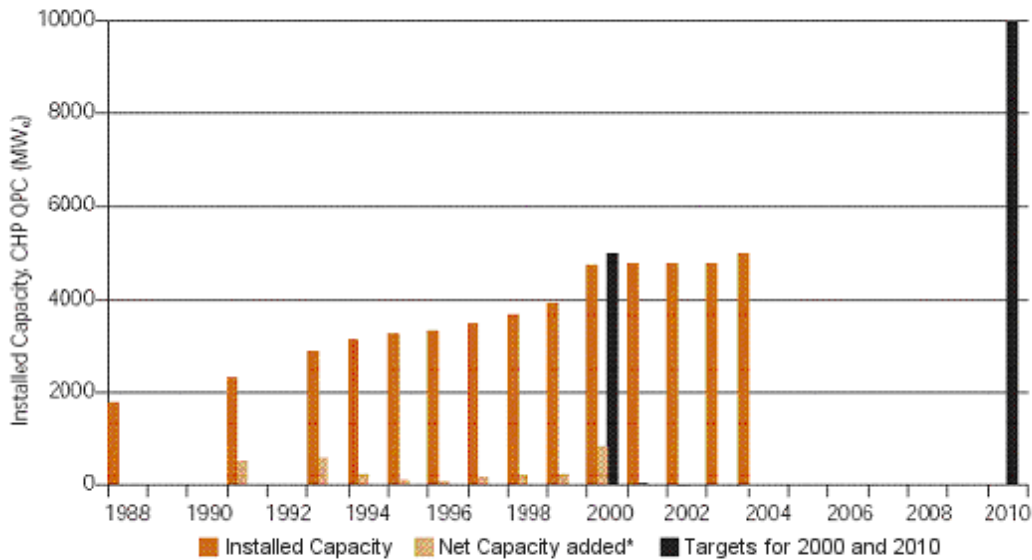
Despite CHP's significant benefits, the industry has suffered a severe downturn over the past four years. The Government, through the annual statistics it publishes, has reported a stagnation of CHP capacity from a net additional annual increase of 818 MW in 2000, down to 2 MW, 113 MW and 30 MW for the years 2001 – 03 respectively.

Of further concern is that generation levels from current CHP plant are depressed: though marginally more plant is installed, operating conditions have reduced the level of CHP output – current reported output from CHP remains below that in 2000, when the energy market “reforms” were factored in to the market.

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<sup>15</sup> Based on the Treasury's Green Book Guidance for evaluation of public sector investment by whole-life costing, accounting for all costs and benefits, including income and expenditure (such as energy maintenance and replacement costs) over a 25 year period, and discounted back to current values using a discount rate of 3.5%.

The progress of Government in achieving its CHP targets is illustrated below in Graph 2.



Graph 2: CHP capacity operating in UK and target level for 2010<sup>16</sup>

It can be seen that the UK will need to add new net CHP capacity, at levels such as that experienced in 2000, for every year until the end of the decade, if the Government is to achieve its CHP target.

The principal reason for this downturn is the failure of Government to effectively support CHP through the introduction of the New Electricity Trading Arrangements (NETA) in 2001. This is despite Government assurances before its introduction that CHP would be “encouraged” as a consequence of the new arrangements. The effect of the combination of NETA and subsequent increased natural gas prices led to the Chief Executive of a major energy company describing the UK generation market as “bust”. The shakeout in the wider electricity-industry has been widely reported, however, the adverse impacts were far more disproportionately felt in the CHP sector. OFGEM’s study at the time reported that CHP output had fallen with export volume down 61%.<sup>17</sup>

The then OFGEM Chief Executive Callum McCarthy, stated at the time:

*“Equally CHP is struggling...critically, because of the absence of strong Government support for CHP. But if the Government wishes to make its*

<sup>16</sup> Source: *Digest of UK Energy Statistics* (DUKES) 2004,DTI

<sup>17</sup> *Report to the DTI on the Review of the Initial Impact of NETA on Smaller Generators*, OFGEM 2001

*target for CHP real, as distinct from merely declaratory, it must make some real decisions for CHP, as it has for renewables.*<sup>18</sup>

This fall in orders for new CHP plant can be most dramatically witnessed in the industrial CHP sector where all major CHP development teams have now been disbanded. No new deals for plant have been signed or turbine orders placed for several years now, hence starving the UK's turbine manufacturers of valuable orders.

At least 1 GW of DTI-consented CHP plant is currently stalled. This in turn means investment of at least £0.5 billion by CHP developers which is not being directed into improving the competitiveness of the UK manufacturing industry.

The new market, with significantly reduced 'spark-spread' (the gap between power prices and gas prices) levels and increased price volatility has greatly increased investment risk. New plant-build has therefore collapsed.

Yet Government **has** intervened ensuring generous support to protect certain sectors of the UK generation market:

- The cost to consumers of the Renewables Obligation (RO) was increased by 50% to cope with the market conditions created by NETA
- The coal and nuclear industries were thrown financial 'lifelines' through significant Government-backed cash investments from 2002 onwards.
- Coal-fired power stations additionally benefited from changes in the RO in 2003 which allowed the co-firing of biomass alongside coal to qualify for Renewable Obligation Certificates (ROCs)

All of these have been driven by the DTI as they also blocked any proposal from DEFRA to revitalise the CHP market.

### **CHP: A Strategic Response?**

The Government first announced the imminent publication of a CHP Strategy in 1998. The Strategy eventually took six years to formulate, finally being released in April 2003. The Strategy also finally confirmed the CHP industry's already long held belief that the Government would significantly miss its 10 GW target by as much as 20% - stating only 8.1 GW would be achieved by 2010. The Association's concern is that even this estimate is over optimistic and that on current trends, and without the implementation of effective policies, the Government will achieve only around 7 GW by the end of the decade.

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<sup>18</sup> Callum McCarthy speech at the 2002 Labour Party Conference

Both the CHP Strategy and the Energy White Paper have failed to address the issues affecting the take-up of CHP. Little support is given to CHP within Government, and there remains a major fissure across Departments in the ability to deliver the 10 GW target. The Government needs to create new mechanisms to help offset the volatile environment for CHP investment it has created over the past 5 years.

The creation of a new full-time energy Minister in the recent reshuffle, and a higher Ministerial level of representation for CHP in DEFRA will create a key opportunity for Government to ensure that CHP policy is, at long last, more effectively handled.

The introduction of effective measures to re-stimulate the industry and ensure that the much wider potential of at least 20 GW of CHP by 2020 is achieved, is the single most important issue for the CHP sector that needs to be firmly, and vigorously addressed in the current Review of the UK Climate Change Programme.

### **CHP: What Government needs to do?**

The current Review of the Climate Change Programme is timely. New generating capacity will imminently be needed to offset the reduction in capacity from nuclear plant closures and the declining use of coal plant anticipated by 2020.

Informed commentators suggest that the UK will shortly enter a new *Dash for Gas* phase, something which has already occurred twice in the 1990s. These phases of 'fuel-switching' have provided the most significant element of the UK's reduction in carbon emissions. The level of reduction observed in the 1990s is however unlikely to be repeated.

A number of key challenges need to be addressed over the remainder of the decade:

- CO<sub>2</sub> emissions have risen considerably over the past few years and are anticipated to increase further
- there are considerable concerns over the UK's security of supply, both in terms of the amount of generation required to satisfy energy demand and also in terms of the increasing emphasis on imported gas
- The Government's statutory targets for eradicating fuel poverty are seriously under threat in a period when gas and electricity prices are not only rising but anticipated to rise further.

The Government needs to act **now** to ensure that when the UK experiences an improved environment for investing in new generation plant, that this plant, where suitable, is CHP. Failing to grasp this key opportunity will effectively 'miss the boat' for CHP investment for a further decade.

In this paper the Association puts forward 50 recommendations to Government. The introduction of a mix of policies and actions to stimulate market demand will not only help the Government realise its 2010 CHP target, but will also work to achieve a wider CHP potential of 20,000 MW by 2020. Together they will help set the UK on the path to achieving the Prime Minister's longer term 60% carbon reduction target.

## **CONCLUSIONS**

The Association, and more importantly the Government, is aware that the significant potential for CHP in the UK has yet to be tapped. On the basis of estimates of CHP potential across all economic sectors, the Association firmly believes that, with appropriate mechanisms in place, a level of CHP penetration similar to a number of other European countries can be achieved in the UK.

Setting a target for 20 GW of CHP capacity in 2020, with appropriate and effective measures to ensure this can be achieved, will ensure that CHP plays its full role in boosting UK competitiveness, delivering affordable warmth, ensuring greater security of supply and, most importantly, helping Government get back on track to both existing and future carbon reduction targets.

The time is now opportune for the Government to use the outcome of the review of the Climate Change Programme to move forward across a range of policies, but in particular how Government will act to secure the delivery of their CHP target.

The Association and the industry will, as ever, be willing partners in this task with an end result of billions of pounds of new business investment in not only a less carbon intensive energy sector, but also a more competitive UK economy.

The challenge for Government is to act and to do so now.

## RECOMMENDATIONS

Government has allowed CHP to become the 'poor relation' of its climate change and energy policies.

Yet the Climate Change Review gives the Government a unique opportunity to make up for lost time.

The Association welcomes Ministers commitments to consider the scope for new measures to boost the take-up of CHP. A range of options exists: all need to be acted upon. The introduction of a mixture of effective support mechanisms and policies to stimulate market demand would create a sea change in the prospects for CHP and with it the delivery of significant carbon saving measures.

### Removing burdens, stimulating growth

#### 1. Extending CHP's exemption under the CCL

The Government should initiate, as soon as possible, its application to the European Commission for a further 10-year exemption for CHP from the Climate Change Levy (CCL) . This is a simple measure that would help reduce market uncertainty about the durability of the current hard-won CCL exemption.

#### 2. Introduce arrangements for CHP similar to those for renewables.

The Government should use the powers it took in the 2000 Utilities Act to introduce arrangements for CHP similar to those for renewables. This would be the most effective way of addressing the market uncertainty the Government has created.

#### 3. Mitigating risk for CHP investors

In the absence of such a measure, a market-based mechanism to guarantee spark spread, was proposed last year by Alan Whitehead MP. This addresses the market risk and uncertainty associated with the Government's delivery of its CHP policy,. It needs to be activated.

#### 4. Creating a CHP Sector under the NAP

This modelling would then be key in helping to establish a *separate* CHP sector under Phase II of the EUETS

#### 5. Exempting CHP from Business Rates

The 2009 rating evaluation of the power sector should deliver the Government's promise in 2000; to fully exempt CHP from business rates.

#### 6. Exempting CHP from the RO

The Government should remove the cost burden that the Renewables Obligation (RO) places upon those consumers who use CHP-generated electricity in the wider energy market.

## **7. Fully rewarding CHP for its carbon saving under the EUETS**

The failure to ensure that CHP was properly rewarded for its carbon saving role in the formulation of the current National Allocation Plan (NAP) was a significant missed opportunity by Government. Several other Members States ensured that CHP's environmental benefits were rewarded through the scheme. With the creation of a distinct CHP sector the Government should ensure that a Phase II NAP delivers the positive boost to all types of CHP plant that Ministers were led to anticipate would occur.

## **8. Delivering on the emissions trading projects mechanism**

The Government have sidelined the UKETS 'projects mechanism' as a consequence of the introduction of the EUETS. This mechanism was stated by Government as a potential route for stimulating new CHP development. Any new projects mechanism developed must ensure that the Government delivers on its original commitment.

## **9. Reviewing NETA's effect on CHP**

The Government should deliver on its commitment<sup>19</sup> in last year's CHP Strategy and set up a joint review with the CHP industry of what further changes to NETA/BETTA are needed to reduce the market impact that the OFGEM/DTI/NETA/BETTA project has had on the CHP sector.

## **10. Recognising CHP's carbon saving potential**

The Association has recently presented Government with a study<sup>20</sup> it has commissioned reviewing the carbon saving potential of CHP. The Calculations for CHP carbon savings from existing schemes is well-supported through data accumulated through the Government's extensive CHPQA (Quality Assurance) programme. Government's estimates of *future CHP carbon savings*, however, is incorrect and, some might suggest, almost deliberately pitched on the particularly low side. This is a fundamental issue affecting all new CHP policy-making decisions. A new and more independent review is needed.

## **11. Rewarding CHP's power export**

CHP generates at the point of use. It can also provide power back to the supply companies right at the point of demand – this should make it highly valuable. However regressive market changes introduced by Government since 1997 has undervalued this power. Action is needed to ensure that where CHP plant supply local customers directly with power, and export any surplus, that they are adequately paid for any export electricity.

## **12. CHP should be made a fundamental element of Power Station Consents**

Planning guidelines for new power plant needs to ensure that developers have fully explored the potential for CHP as Ministers told to Parliament

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<sup>19</sup> para 1.29 *The Government's Strategy for CHP to 2010*, DEFRA, April 2004

<sup>20</sup> *Time to Take a Fresh Look at CHP* CHPA, May2005

would be done. For the UK to move to the 60% cut in carbon emissions required, all new fossil-fuelled generating plant must operate as CHP

**13. Electricity Supply Licenses should be restructured to encourage the development of community based CHP**

The electricity license exemption threshold should be raised and made less onerous in order to overcome the regulatory barriers for local communities wishing to take advantage of CHP.

**14. Restructuring the CEP**

The Community Energy Programme (CEP) should be further extended and restructured, delivering a greater focus on building a sustainable market for district energy.

**15. Rewarding Low-Carbon heat**

The Government should introduce an incentive mechanism which could act as a major stimulus to both biomass heat and heat produced from CHP plant.

**Building and delivering the vision**

**16. Government Industry Taskforce established**

A joint CHP industry/Government Taskforce (akin to the Renewable Energy Advisory Board) should be created as a lead-in to a range of measures to kick-start the CHP market

**17. Committing support to CHP within Government**

DEFRA needs to increase the staffing levels and expertise in its Sustainable Energy Policy section that work on CHP, thereby delivering the pro-active support that the industry had previously experienced throughout the high growth period of the 1990's.

**18. Greater joined-up Government on CHP policy**

DTI needs to fully embrace the Government's CHP target, and create a strategy to deliver those elements that clearly fall to it, such as licensing, energy market reform and so on.

**19. Setting a longer term 20 GW CHP 2020 target**

Government should set a target for 20 GW of CHP capacity by 2020 with a clear delivery Strategy and appropriate milestones of achievement. This level of CHP capacity is consistent with the lower end of Government's own analysis.

**20. Setting CHP targets as PSAs**

CHP is a critical element of the UK's Climate Change Programme, delivering some of the most significant and cost-effective carbon savings. As such, both the existing 2010 target and a future 2020 target should be established as Public Service Agreements (PSA) set out in DEFRA's aims and objectives as a key outcome-based target.

**21. The treatment of CHP within the Climate Change Agreement (CCA) sectors needs to be reviewed and acted upon.**

Government stated at the outset that the creation of CCAs would provide a significant incentive for industry to invest in CHP. However, in some instances, it has been reported that CCAs have in fact proved to be a barrier to such investment. The scope for CHP in the CCA target sectors needs to be examined along with a coordinated approach by the relevant sections of DEFRA to overcome barriers identified.

**22. More effective energy modelling of CHP**

Given that the CHP industry is intensively monitored by DEFRA's CHPQA programme, the DTI should use this data, and other work where necessary, to model CHP separately in its future projections work. This analysis should be incorporated in the long awaited energy projections follow-up report to the Energy Paper 68.

**23. Clarifying CHP's role in the Climate Change Programme**

The current treatment of CHP within the Climate Change Programme (CCP) is confusing, with carbon savings from CHP almost 'lost' across the wide range of areas that it actively contributes to. The CCP should give a clearer and more authoritative indication of the role of CHP in terms of carbon savings delivered through the achievement of the 10 GW CHP target.

**24. Heat Map Development**

CHP Assessment work would help to support and build up the soon-to-be-released DTI/DEFRA Heat Maps. The scope of the Heat Maps should not remain static: all CHP study work commissioned would help to update and improve the maps to ensure they evolve as data becomes available.

**25. Strategy for the supply and use of heat.**

Building on this work, the Association supports the Royal Commission on Environmental Pollution's recommendation for Government to create a comprehensive strategy for the supply and use of heat.

**26. The Government's CHP target for its estate should be reviewed and extended to include i. heat and ii. the NHS**

Both of these areas are currently out of the scope of the current legislation. The Association has no knowledge as to how the level and scope of the current 15% electricity target within Government estate, contained within the *Sustainable Energy (CHP Provisions) Order 2003*, was determined. The CHP Provisions order needs to be re-visited and made more ambitious, as some departments have already have either already achieved the this level or can opt out due to purchasing 'green electricity'. Extending the obligation to include heat would ensure that more CHP plant could be introduced and used onsite. Further, NHS Estates (also see below) need to be engaged with in order to realise the significant potential for CHP which exists in this sector. This would help to ensure that

Government's buildings could become the market building 'anchor loads' for major urban CHP schemes.

**27. Ensure ECAs support all elements of CHP systems**

Enhanced Capital Allowances should be extended to include all parts of CHP and district energy systems.

**28. Government need to lead by example**

A far more comprehensive study of energy efficiency saving measures, including the use of CHP, within the Government estate must be made as soon as possible. Government should lead by example. However, departments have still not published their energy efficiency reports, as required in the Government's 2004 *Energy Efficiency Action Plan*.

**29. Recognising the potential for MicroCHP**

MicroCHP has a significant role to play in the delivery of energy efficient heat and power in the residential sector. However, Government needs to work closely with the microCHP community to revise the current projections to determine what likely capacity is to be introduced to 2010 and beyond to 2020.

**30. Formulating an effective Microgeneration Strategy**

The Government's *Microgeneration Strategy*, which is to be finalised by April 2006, should ensure that the full potential of microCHP, and barriers to its uptake, are fully addressed and acted upon.

**31. Ensuring skilled workers are in place**

The Government and the Skills Council should ensure measures are in place to ensure sufficient programmes for training installers of microgeneration technologies.

**32. New Sustainable Energy Strategies for key housing growth areas should be created**

These should include a review of the potential for all forms of CHP. It has already been identified by Government commissioned research that these new developments will significantly contribute to carbon emissions in the period to 2020.

**33. Energy and Environmental Impact of Sustainable Communities identified**

The Environment Audit Committee have recently highlighted<sup>21</sup> the environmental failures, including increasing levels of CO<sub>2</sub>, of ODPM's Sustainable Communities Plan. Consequently, the potential for energy efficiency and CHP must be included within all of the new developments under the Sustainable Community Plan including the Thames Gateway, the London-Stansed-Cambridge corridor, Ashford, and Milton Keynes-South Midlands.

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<sup>21</sup> *Housing: Building a Sustainable Future* Environment Audit Committee, House of Commons January 2005

**34. CHP and community heating must feature in the new Sustainable Buildings Code**

The Government have highlighted the importance of the Code with respect to the environmental integrity of new housing developments. Therefore CHP and community heating must, along with other energy efficiency measures, be explored by ODPM and should adequately feature in the new Sustainable Buildings Code

**35. CHP : Getting the message out**

A new high-level, confidence building CHP marketing programme should be initiated by Government in partnership with the industry. All companies identified as being suitable for the installation of CHP, through a new CHP potentials project, should be offered feasibility studies under the Carbon Trust's targeted programme. This would build on the Carbon Trust's existing CHP feasibility study programme, but would significantly expand the number of such studies undertaken.

**36. Reinforcing the Trusts CHP policies**

The Energy White Paper mandated the Government's sponsored energy efficiency delivery bodies, the Carbon Trust and the Energy Saving Trust, reinforce delivery of its CHP target. The Association would urge DEFRA to ensure this occurs.

**37. Recycling full CCL receipts**

All Climate Change Levy receipts should be recycled and invested into energy efficiency measures, including CHP, to those sectors that the CCL is placed upon.

**38. Recycling full EUETS auction receipts**

Similarly any monies accrued from the auctioning of carbon allowances under the EUETS should be recycled to help fund business energy efficiency measures including CHP.

**39. Reviewing other Government programmes**

The Decent Homes Standard needs to be reviewed to incorporate energy efficiency measures, including CHP. The Energy Efficiency Commitment (EEC) needs to be studied and enhanced to ensure it fully supports the deployment of CHP based schemes.

**40. The Government should establish a dedicated Community Energy Unit**

This Unit should ensure strategic opportunities for the development of district energy schemes are taken, and a range of other community based sustainable energy technologies are stimulated and applied with direct local consumer participation.

**41. Better Government procurement**

The Government should examine the scope for supporting major CHP schemes through a combination of 'smart purchasing' by its own agencies

and local government. It should also take steps to create a guarantee scheme, akin to others it already has, in order to enable local authorities to confidently invest in major district energy schemes.

**42. The Treasury's "Invest to Save Budget" should be fully utilised to boost the potential for district energy.**

The Government is considering the case for a rolling-fund for investment in good energy efficiency projects in the public sector (announcement made in Budget 2005). This fund should prioritise CHP and district energy projects.

**Assessment and monitoring**

**43. Assessing the UK's wider CHP potential**

UK CHP use has remained at approximately 6% of total electricity supplied for the past 10 years. This is well below the EU average and compares poorly with other Member States who have achieved levels as high as 40%. It is clear that across the range of technologies and generation sizes available, the UK has scarcely tapped the level of potential for CHP that exists. This is without consideration of further opportunities which will arise as new technology options become available: these could include biomass fired CHP, fuel cells, anaerobic digestion, greater demand for cooling (trigeneration) and geothermal based schemes. The Government needs to undertake comprehensive analysis, as it has for renewables, to determine the wider UK potential for CHP applications.

**44. Driving Forward the CHP Strategy**

An annual update on the CHP Strategy should be produced, similar to the annual reviews of the Energy White Paper and the Energy Efficiency Action Plan.

**45. The Government should streamline its monitoring and assessment of CHP plant**

The Government should review the role and operation of its CHP quality assessment scheme (CHPQA) to ensure that its effectively obligatory nature is not placing disproportionate burdens on companies, particularly the many smaller players in the CHP sector.

**46. Regional CHP assessment studies should be initiated**

Similar to the analysis undertaken to determine the regional potential for renewables generation, undertaken by the DTI, studies on the potential for CHP and/or district heating should be commissioned through the Regional Development Agencies (RDAs), and should include the involvement of the Sustainable Energy Policy (SEPN) Regional Group.

#### **47. Identifying the potential for CHP in the capital**

London has some of the most significant potential for CHP in the public and commercial sectors. The Mayor's London Energy Strategy calls for a doubling in the use of CHP in London. The Government should build on this commitment and undertake a special review of the action needed to secure the CHP potential in the capital.

#### **48. The potential for CHP should be examined in new PFI developments.**

According to the Treasury, PFI has already delivered 600 new operational public facilities, mainly schools and hospitals but also police stations and prisons. Many of the sites would be suitable for CHP, however, in practice; little new CHP capacity has been installed. Future plans for PFI projects are significant: for example, all new secondary schools in England are to be rebuilt over the next 10 – 15 years, at least half via the PFI route, with an annual investment of £2bn over that period. Government must ensure that energy efficiency measures are a cornerstone of any new PFI project. Government must also ensure that all new PFI projects must explore the suitability of CHP.

#### **49. A comprehensive study on the potential for CHP in the health sector and the barriers to the uptake of CHP plant should be undertaken.**

Included within this study should be work to identify further support measures for NHS Energy Managers to undertake energy efficiency improvements. The recent NHS low-carbon<sup>22</sup> guide contains scant information for NHS energy managers on CHP and its potential.

#### **50. More open Government monitoring of carbon emissions**

Government should publish annually a detailed report highlighting the progress of its carbon reduction policies and their effectiveness in working to reduce UK CO<sub>2</sub> emissions.

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<sup>22</sup> *Carbon/Energy Management - best practice advice for the NHS in England on meeting the mandatory carbon/energy targets* NHS Estates 2004