Unite response to the Defra Consultation on the Proposed EU Emissions Trading System from 2013.

1 Introduction

1.1. **This response is submitted by Unite the Union. Unite is the UK's largest trade union with 2 million members across the private and public sectors. The union's members work in a range of industries including manufacturing, financial services, print, media, construction, transport, local government, education, the health service and not for profit sectors**.

1.2. As the UK's largest general union we have members who will be affected by these proposals in a number of industrial sectors. We are the principle union amongst the workforce in a number of primary carbon emitting industries including energy generation, civil aviation, road haulage, chemical process, and metals and foundries.

1.3. Unite also represents members who feed the growing demand for electronics and IT products and other manufactured goods which cause the indirect release of emissions in the home and work environment. Our members are striving to reduce the impact of these devices and providing the cleaner and greener environmental products and services which will assist in reducing carbon emissions. In an office location there are a number of products on the market that claim to be able to reduce electricity demands. These range from Infra Red lighting sensors, to devices to lower the national grid power levels from 240 Volts to 215 Volts to ensure a more efficient use of the supplied mains power. Such easy gains cannot be made in all industries within a reasonable time scale.

1.4. Unite believes it is important for the future of this planet that changes are introduced to the way global industry operates to reduce its damaging environmental impact. To achieve this action is needed globally not just within communities as large as the EU. Within Europe changes need to go far enough to ensure that it is not creating unsustainable levels of emissions, whilst ensuring that the impact on businesses does not produce an imbalance in the global marketplace. Unite believes that this delicate balancing act can be achieved if each nation takes responsibility and budgets their emissions levels correctly.

1.5. The EU Emissions Trading Scheme (EU ETS) creates a market price for carbon allowing industry to budget accordingly and rewards those who invest early with the benefit of spare allowances which can be passed to those industries which cannot adopt cleaner practices easily.

1.6. In the aviation industry these easy gains were taken over a period of 75 years, driven by desire to fly further on less fuel. The lead time between the introductions of new aircraft is also very long due to the lack of production capacity.

1.7. Details of the level of emissions from other forms of transport is only now receiving the prominence that is due in the battle against climate change. These emissions could not only be key in redressing the hidden impact industrial of business decisions but also to balancing the effects of the EU ETS and the global markets effects on carbon leakage potential.

1.8. Energy generation in the UK faces a double challenge of meeting generational demand whilst not increasing emission levels. Due to lack of investment into new and replacement build the country faces the task of replacing 40% of the generational capacity without relying on highly polluting fossil fuelled generation. This task comes at a time when global energy demand has increased significantly causing fears over security of supply.

1.9. The smelting of aluminium and other metals requires huge quantities of energy and causes the release of large quantities of Greenhouse Gasses (GHGs). As a result, the industry is extremely concerned over the global price imbalance caused by the level of increased production costs in Europe. Equally, the creation of concrete and various other chemical processes is another major source of GHGs. Without a domestic source of steel and concrete the inherent cost of construction increases in terms of both materials and environmental impact.

1.10. Whilst there are suggestions which capitalise on the introduction of Carbon Capture and Storage (CCS) technology, the scale of investment needed would require a considerable level of involvement from business.

2 Section 2: Scope

Q1. Do you agree with using a broad definition of a combustion installation?

2.1. Unite believes that despite the high cost implications to the company in question a broad banding approach has to be utilised to capture all companies who produce emissions beyond a threshold level. If the threshold is variable dependant on the size of the company it disincentivises growth and a far less sustainable industrial production method to be employed.

Q2. Do you think the activities listed at Annex 1 of the revised Directive mean a broad definition has been achieved? If not, what amendments would be needed to the Directive to achieve this?

2.2. **Unite believes that the definition as prescribed in the revised Directive provides a clear and unequivocal definition.**

Q3. Would a 10,000 tCO2 or 25,000 tCO2 emissions threshold be most appropriate?

2.3. **Unite believes that the lower threshold would not only capture a far greater number of companies and organisations, but also redress the current predicted shortfall in the scheme's aim to reduce emissions by 70 % compared to 1990 levels.** Casting the net this widely will however cause many smaller companies to struggle to comply and hence may require outside assistance to be available. This could be in the form of interest free loans as provided currently by the Carbon Trust and others or other funding obtained from the hypothecation of monies raised from auctioning of trading certificates.

Q4. Should all installations be eligible to apply to opt out, not just combustion installations with a thermal rated input of less than 25 MW?

2.4. **Unite believes opt outs should only be available in nationally important infrastructure which are essential in maintaining the demands of consumers.** This loop hole should only be for very limited periods in order to enable the infrastructure reasonable time to build a replacement. Without this flexibility the imposition of the Directive would cause considerable disruption.

Q5. Do you agree with the Commission's proposal to include:

a. CO_2 emissions from petrochemicals production, ammonia and other chemicals including process emissions?
b. CO_2 & PFC emissions from the production of aluminium (both primary and secondary)?
c. N_2O emissions from the production of nitric, adipic and glyoxal and glyoxylic acid production?

Please give your reasons.

2.5. **Unite believes that when looking at GHGs other than CO_2 the calculation should not simply focus on the relative strength of the greenhouse effect, but should include the duration that these gases remain in the atmosphere.** CO_2 is the most prolific of the GHGs and lasts for a hundred years in the atmosphere. Nitrous oxides are broken down by sunlight, as are other GHGs and absorbed into the oceans and into plant life but this process can last up to 150 years and have between two to three hundred times the effect on the atmosphere as a similar quantity of CO_2. Clearly, therefore, Nitrous Oxides are far more damaging than CO_2 but, thankfully, their relative quantity is considerably less.

2.6. **Unite believes that any large scale emitters of GHGs should be captured by the emissions trading scheme**. Financial aid will be needed in order to enable these industries to adapt, however, given the level of international competition particularly in the aluminium smelting and chemical processing industries where the lack of any substantial profit margins in particular. Without this support it is widely believed that the industry will relocate.

2.7. The aluminium industry in particular will be affected on several fronts. Firstly, as a result of the inclusion in the scheme and the need to purchase trading allowances, but also as a result of rising energy costs caused by the energy sector's own inclusion in the scheme and rising global demand. This industry is also under increasing competition from the Far East and India where overheads are far lower and, hence, profits are greater. A similar situation exists in the chemical and processing industries where profit margins are marginal due to the level of competition.

2.8. **Unite believes that without a method of balancing the global market, either with a border tax and/or subsidies for exported goods, these industries will justify relocation as necessary in order to remain profitable.**

Q6. Do you support inclusion of methane from active coal mines in the EU ETS? If not, how else might this sector's methane emissions be regulated?

2.9. **Unite believes that if methane emissions from coal mines are included, then emissions from other sources, such as waste water treatment and landfill, should also be included**. By far the greatest single source of methane is from farming. But if these emissions were included food prices would rise well beyond what would be competitive in the global market place for meat produce.

2.10. **Unite therefore believes that there are some considerable hurdles to overcome the inclusion of methane in the EU ETS, but its inclusion is necessary due to the gasses effect on the atmosphere**.

2.11. All mining and drilling activities produce the release of some form of pollutant. Drilling for oil and gas causes a significant release of natural radioactive material into our oceans, for example. The coal industry in the UK is struggling to survive as it is without the additional burden of the costs associated with emissions trading.

2.12. **Given the decline in availability of natural gas reserves, Unite believes that measures should be put in place which encourages such methane releases to be captured and used as an alternative fuel source.** The problem with the regulation and measurement of methane release is that there are no precisely known figures that can be used as an absolute measure. Open cast mines in particular, cause significant problems, however, as any gas unearthed, vents immediately to the atmosphere leaving any details of the volumes involved an unknown factor.

Q7. Do you agree with the proposed method for including CCS? If not, please provide your reasons and evidence.

2.13. Although Unite supports the inclusion of CCS from 2013 estimates currently predict that CCS will not be commercially ready by this date due to the technical and investment activities that are involved[1]. CCS does offer a plethora of potential solutions to the release of CO_2 from a number of industries not just electrical generation. This technology could provide (once it becomes operational) a method to enable large scale emitters of CO_2 such as the aluminium and concrete industries to reduce their emission levels to near zero. The investment needed for such a scheme is a major stumbling block, however.

2.14. **Unite believes that if CCS is taken into consideration with every tonne of carbon stored resulting in the generation of an allowance then the costs of the investment could be recovered more quickly**. The UK government commitment to supporting a demonstration of CCS on pulverised coal is a very welcome first step, but more investment is needed in a more timely fashion which may not be forthcoming from a leave it to the market approach.

Q8. What are the key issues to consider in any cost benefit analysis of whether and how surface transport (road and rail transportation, and inland shipping) may be included in the EU ETS?

2.15. Although aviation emissions are to be included from 2012 in the EU ETS, no surface transport is currently scheduled to be included. Road transport makes up around 21% of total man-made carbon dioxide emissions in the UK[2]. The majority of these are derived from the car. The EU has already set out proposals to limit the volume of CO_2 from such vehicles to just 130 grams per km. Despite efforts by rail companies and the unions to encourage more freight transition from the roads to the rail the growth in road haulage has continued to boom.

2.16. Outsourcing of work to former Eastern block nations has caused a considerable amount of the growth in road transport. One such decision was taken by Electrolux recently, to move the construction and finishing of goods destined for the UK market from a plant in Spennymore in Derbyshire to a factory in Poland. If the transport emissions caused by companies manufacturing procedures were taken into account when calculating the consumption of allocations many more

[1] The UK's first demonstration post combustion CCS plant will not be operational until 2014 according to Malclom Wicks and he claims that this is one of the leading projects globally.
[2] RAC report 2003

industries would be covered by the scheme and far less of this type of decision would occur.

2.17. Unite is campaigning for companies to be forced by legislation to publicly report on the levels of emissions released by their annual operation including that derived from transport. Such a move would highlight the true green credentials of a company rather than relying on audits based on energy consumption levels.

2.18. Unite was very pleased to hear the Government decision to prevent the introduction of Longer Heavier Vehicles (LHVs) on to British roads. The vast majority of HGVs do not carry their full capacity, resulting in either partial loads or additional lorry journeys. If LHVs had been introduced their addition would have exacerbated the problem as has been seen in previous road expansion policies. If maximum capacity is not being utilised, the addition of greater capacity will only serve to reduce efficiency and increase emissions.

2.19. Unite supports the Freight on Rail campaign as this has the potential to greatly reduce the volume of freight that currently clogs up our road network and causes so many accidents. Rail transit of goods is clearly more environmentally friendly than road transport and statistically far safer. The major environmental limitation faced by the rail industry is the lack of a completely electrified rail network. In the UK just 40% of rail routes are electrified, which results in the use of diesel power. In these areas the level of pollutants per tonne km are not dissimilar, especially as the route by road may be more direct. The other major stumbling block is the lack of investment into the infrastructure and rolling stock. These are clearly areas which government encourage investment in and provide support.

2.20. By far the greenest method of hauling freight is by water, be that by sea or utilising inland waterways. The problem with the use of these methods is the speed of the goods transit. This lack of speed has discouraged industry from utilising this method despite the level of predictability and environmental benefits. If there is the pressure to report and more importantly pay for the emissions from business transport, forward planning could overcome this speed hurdle.

2.21. It is clear that the government is clearly opposed to a border tax adjustment to protect European interests and offset the negative effects on global competitiveness of EU ETS membership. If a scheme was properly constructed to require all surface transport to purchase certificates for journeys to and through the EU then the respective costs of imports would be increased balancing the market and encouraging greater local production of goods.

Q9. What are the key issues for consideration in a cost benefit analysis of whether and how international shipping may be included in the EU ETS?

2.22. Although shipping goods by sea is theoretically the greenest method of getting goods from A to B, the major problem faced environmentally is the choice of fuel. Currently a very large proportion of the world's shipping runs on bunker oil[3]. With the price of a barrel of oil now breaking all records the price differential between

[3] A tar-like substance which is basically the dregs left over from the oil refining process which is otherwise a waste product comparatively inexpensive when compared to marine diesel.

the price of diesel and bunker oil is widening by the day. Bunker oil is, however, vastly more polluting with far greater levels of Nitrous Oxides, Sulphur Dioxide and particulates. GHG emissions from commercial shipping are growing twice as fast as those from aviation. Consequently, it makes nonsense of the environmental policy of Europe that such shipments by sea are not included in the EU ETS.

2.23. Commercial shipping by sea is the method by which over 90% of the imported goods arrive in the UK. As a result any increase in the cost of this method of transport will have a knock on effect to the cost in the shops of these products. While this may encourage resurgence in the UK for domestically produced goods, it would also cause a problem with the export of products from our shores.

2.24. The other major hurdle to overcome is the situation which is becoming increasingly commonplace whereby tanker shipments of Liquefied Natural Gas (LNG) and crude oil are diverted to alternative ports, rather than those originally stated, in order to maximise the financial return on cargo. In such an arrangement the ship in question may have steamed several hundred miles in the wrong direction before arriving in port. A practical solution would be to impose the need to purchase allowances on arrival at the port for the journey that had taken them from their port of origin to an EU port including any diversions taken.

Q10. Do you agree that the EU agriculture, forestry and land management sector should not be included in the EU ETS at this stage?

2.25. **Unite believes that farmers in the EU are already struggling to survive principally due to the pressure brought on farmers by the giant food retailers.** The cost of fuel is only adding to the problem with diesel prices climbing dramatically of late. The addition of the need to purchase carbon trading allowances would, therefore, only serve to increase the cost of essential food crops. Pressure from the major supermarket chains for ever cheaper food prices has already caused a crisis in the area of milk production.

2.26. Climate change has already caused severe problems with the propagation of crops due to changing rain fall cycles. Shorter winters and drier summers have caused many to look to alternative crops or more expensive varieties. Much farming is still performed by small local producers whose principal asset is the land they utilise. Clearly any change in this sector would necessitates further reform of the Common Agricultural Policy.

Q11. Do you agree with the Commission that installations exclusively burning biomass should not be covered by the EU ETS Directive from 2013?

2.27. Biomass fuel has been heavily touted as a solution to both the fuel crisis and an environmentally neutral fuel. The process of producing biomass requires the use of fuel as does the transport of this material to the generation site. Such efforts cause the release of additional CO_2 and in general causes the loss of valuable food production, land and water resources. When the vegetable matter is burnt it

tends to leave behind a tar-like residue which tends to require the shut down of the plant in question for cleaning. Brazil is still world's greatest exporter of biomass fuel, which is harvested from land which previously contained rain forest.

2.28. **Unite therefore believes that the environmental benefits of biomass are considerably tarnished and need considerable work before they will achieve the level of sustainability needed to warrant exempting from the EU ETS scheme.**

2.29. Unite believes that the EU target of ensuring 10% of petrol and diesel comes from renewable sources by 2020 is not an effective way to curb carbon emissions and is simply not feasible at our current level of technology without imports sourced from palm oil and sugar cane production. Future technology based on algae as a sustainable feedstock hold great potential for the production of diesel-type fuels with a very small CO2 footprint. Equally methods of farming using salt water as opposed to the limited supply of fresh water need more investment.

3 Section 3: Cap setting

Q12. Do you agree with the level of the central cap proposed by the Commission for meeting a 20 per cent EU GHG reduction target? If not, why not?

3.1. **Unite feels that given the recent reports of an increase in the rate of climb seen in GHG levels in the atmosphere that the cap should be in line with the EU targets of a 30% reduction in GHG emissions from 1990 levels.** A clear balance must be drawn between the effect on the global economy and the competitiveness of European manufacturing. The need for stricter targets has been heightened by past failed attempts at carbon emission reductions which have only served to exasperate the problem.

Q13. Do you agree with the Commission's proposal for a linear emission reduction trajectory of 1.74 per cent per year to be reviewed by 2025? If not, why not?

3.2. **Unite believes that although a path which reflected this cost benefit graph (see appendix 1) would result in a far tougher start to the process, the overall outcome would be one which would achieve this goal far more effectively than a target reduction evenly spread over time**.

3.3. Despite taking strong positions on environmental issues, Unite has seen very little by way of real investment from some employers. There have been some exceptions to this rule, where good staff engagement has occurred, but these have been all too rare. The problem tends to be one of prising open the purse strings for initial investment. Unite believes that by installing stronger measures to overcome the initial resistance to change, the inertia of investment could hopefully be overcome.

Q14. Do you agree with the Commission's proposal for an automatic adjustment to a higher target when an international agreement is reached?

3.4. **Unite believes that if a better understanding of the scientific evidence suggests a higher target is warranted and, if these findings and conclusions are agreed internationally, then an adjustment in the targets to a higher level should occur.** Equally, if scientific evidence and international agreement concludes to a relaxation of the targets this too should happen automatically.

3.5. The stumbling block in the proposals is the attainment of international agreement due to the protectionist policies adopted by some nations. Unite feels that the future environmental impact of a 'business as usual' model is out of the question. Equally, a policy that is too overbearing would cripple the European economy to the benefit of other nations. Europe should be leading the way in this battle to win over the hearts and minds of other nations but not at the cost of our socioeconomic future. The key is striking a balance which ensures we do our share.

Q15. Do you believe that there is a role for a European Carbon Bank and what functions should it perform?

3.6. Unite would not support the formation of a European Carbon Bank as by its very nature it would require a supply of trading certificates in order to function. Unlike money, once spent certificates' value does not remain in the economy. The success of the EU ETS relies on there being a finite number of certificates available, which become ever more valuable as the scheme progresses.

3.7. A Carbon Bank cannot provide an interest rate on certificates kept within its walls, be they real or virtual. Neither can it provide loans of certificates to be paid back with interest at some later date, as the only reason to buy more would either be to speculate on the market price or to use them.

3.8. A centralised organisation which reviews the relative effectiveness of the EU ETS and other potential and actual economic instruments for regulating the emission of greenhouse gases would be a good idea but that is not the functionality implied by the term bank.

Q16. In terms of amending the rules of the system, do you favour a continuation of 5 year phases or a shift to 8 year phases? Please state the reasons for your view.

3.9. Unite believes that a series of five year phased periods, which are reviewed in light of our growing knowledge of emission levels, will provide enough flexibility to cope with the findings of scientific study, whilst providing a degree of certainty for future business planning. The growth of scientific evidence and understanding in this area is still rapidly expanding with new and worrying findings emerging almost by the day. A shift to an eight year cycle would reduce this flexibility to cope with this constant change but would provide greater certainty for investment purposes.

Q17. Do you agree with the Commission's proposals for banking and borrowing? If not, why not?

3.10. **Unite does not agree with the concept of a banking and borrowing of certificates.** If this is allowed to transpire apathy among companies who believe they can buy their way toward continuing a 'business as usual' model, will inevitably borrow more certificates in order to delay the investment into changes needed to their operations.

3.11. Unite fears that if companies can borrow certificates the result will be a sudden rise in the price of carbon certificates toward the end of the scheme when debts are called in resulting in factories and generation plants closing. These companies could then use the high price of carbon as an excuse to leave Europe and move to a country with lower staff and energy costs.

4 Section 4: Allocation methodology

Q18. Do you agree with the Government's position on harmonised minimum levels of auctioning across the EU?

4.1. Unite believes the auctioning of certificates in some industrial sectors would simply lead to a far greater amount of 'carbon leakage' of industry out of Europe. It has been argued that energy generation companies should be required to buy their certificate supply at auction with no free allocation. One only needs to remember that such an industry by its very nature can pass on costs to its customers who are, by and large, limited to purchasing their energy from a very limited number of sources down the same transmission lines and pipes to their premises. As a result the energy companies do not suffer a hit on their profits by such an action; it is the public and industry that depend on them for their supply.

4.2. It is recognised that the energy generating companies made significant windfall profits from the sale of certificates in Phase I of the EU ETS. Proposals that are aimed at capturing such profits and utilising them to support industry that will be badly hit by the adaptation to a more environmentally friendly economy fail to take account that funds are needed to invest in the infrastructure of the future, needed to build the new low carbon generation network capacity.

4.3. Unite also recognises that not all of these profits are reinvested into new cleaner network capacity. This is clearly the fault of the regulator, not that of the EU ETS. If there was legislation put into place which required that profits over a reasonable amount were reinvested internally into new projects the current crisis over energy demand would not have occurred or would at least have been significantly reduced.

Q19. Do you agree with the Commission that on-site production of electricity should also face 100 per cent auctioning from 2013, being treated the same as the electricity generators?

4.4. **Unite does not believe that on-site production of electricity should necessarily face the same 100 per cent auctioning as larger producers.** Globally there is a shortage of generation capacity driven primarily by a combination of factors including the growing population, growing economies of

the Far East, India and other developing nations. The West is learning how to do more with less. Developing nations have had to cope with less and are tending to follow by the poor example that we have set from the middle of the last century on.

4.5. If the on-site production is sustainable and under 25 MW then allowance should be made for the investment that has gone into such a development, especially if that unit employed Combined Heat and Power(CHP). Such a move would then encourage others to follow suit.

Q20. Do you agree that providing free allowances for electricity generators for heat produced under CHP is an adequate incentive for this technology? If not why not? How should emissions associated with heat be calculated?

4.6. **Unite believes that heat has been a much overlooked way of maximising the efficiencies gained from the combustion of materials for power generation. The union believes that rather than providing free allocations, the value of emissions by the unit should be calculated.**

4.7. Industry spends millions annually on the cooling or heating of products and premises. Domestically the heating of water and properties, and the cooking of food accounts for the vast majority of our total energy bill, yet in the past the conservation of this commodity has not had the high profile it deserved, principally due to the abundant supply of energy.

4.8. Given that the principal product that is heated for the transmission of heat is water, Unite would suggest that the measure of heat should be the emissions associated energy needed to heat a given standard measure of water. The amount of power required to raise the temperature of an amount of water from one temperature T1 to a higher temperature T2, is a matter of physics and hence would remain constant (see appendix 2).

4.9. Once the efficiency of the unit is established credits should only be used on the basis of the electrical generation element of the CHP units output discounting those associated with the heat output. In this way a discount is allocated which takes account of the efficiency of the units design and of the fuel that is used to create the heat in the first place.

4.10. Unite believes that as long as a minimum ratio between heat and electrical generation is set as the UK standard, the above method would set a far and equitable methodology to encourage the introduction of such units and the way in which heat credits could be allocated to CHP units.

Q21. Do you agree with the Commission that all other sectors including aviation - with the exception of those demonstrably at significant risk from carbon leakage - should move to full auctioning with free allocation starting in 2013 at 80 per cent of their share of verified emissions for the period 2005-2007 and reducing by equal amounts each year? If not why not?

4.11. **Unite believes that the principle problem with auctioning is that richer and more powerful organisations can buy up credits and force numerous not so profitable organisations out.** Additionally, if energy and utilities companies are forced to purchase credits in an auctioning process, the cost will be passed on to the manufacturing base leading to even greater degree of carbon leakage.

4.12. It is true to say that the energy companies made vast profits from the over allocation of free credits to them when the carbon market first opened during Phase I. If it is the case that these companies are not allocated enough credits, they will simply switch off the power and every industry suffers lost production. Equally, when a carbon credit is saved by industry in reducing the energy bill the benefit is passed back to the energy generation companies who do not need to use as many credits to produce the power.

4.13. It is Unite's belief that energy generation's allocations should in some way be separate from those of the general carbon market with there being limited or no transferability out of their scheme into the general trading scheme or that there should be a commitment to keep average emission levels per kWh below a set target. This would force energy production companies to offset large scale production of energy from fossil fuels by investing in renewable and other forms of low carbon generation.

Q22. Do you agree with the Commission's and the Government's criteria for determining which sectors are at significant risk of carbon leakage? If not, why not and explain the rationale behind any alternative criteria you propose.

4.14. Unite agrees with government in the factors that should be taken into account when determining which industries are most at risk of suffering significant financial pressure to relocate outside of Europe.

Q23. Do you agree that free allocation helps to significantly reduce the risk of carbon leakage? If not, why not?

4.15. Unite firmly believes that free allocation of credits to venerable industry would significantly reduce the risk of leakage but if the price of imported goods is still lower due to the lower energy and labour costs free allocation may not be enough.

Q24. Are there any alternative methods for addressing carbon leakage that you favour?

4.16. **Unite believes that an alternative or additional method of addressing leakage would be for the market price for products that are subject to leakage to be balanced with the introduction of an import tariff which accounts for the amount of carbon used in the production of that item and its transportation into the EU.** The funds raised by the tariff or border tax could then provide additional support to that industry in reducing its footprint. This method would assist in balancing the global market ensuring that the European scheme is not undermined by cheap imports and a race to the bottom.

4.17. Unite realises that such a move would effect the free movement of goods and the global market. The introduction of such measures by the US has affected received considerable outcry from other nations but given its economic position, the US has managed to weather that storm and sill provides a major market for a number of developing nations despite its protectionist border levies. If the US can do it why can't European nations. Unite is not advocating a protectionist policy only one which levels the market effect of environmental policies.

4.18. It is madness that goods are shipped thousands of miles only to have similar quantities shipped in the reverse direction. Europe should be setting an example in demanding that wherever possible goods needed in Europe are procured from European based companies.

Q25. Do you agree with the Commission's proposals to undertake a thorough evidence-based review of sectors which may be at risk of carbon leakage in time to propose solutions in 2011?

4.19. **Unite believes that a review of this nature would be the only clear method of determining which industries are at risk.** This review process should not end when the scheme starts, however, as the number of industries at risk could alter over time.

Q26. Do you believe that sectoral agreements are a plausible solution to the risk of carbon leakage? If so, for which sectors and in what form and to what timescale do you believe they might be achieved?

4.20. **Unite does not believe that sectoral agreements would be a solution to carbon leakage.** The fundamental flaw in this solution is how to enforce an agreement against a company that faces bankruptcy if it does not relocate out of Europe. All manufacturing industry will face a downturn in profits by remaining in Europe as the price of emissions and energy slowly climb. The only benefit in remaining is the ready access to the market for these products. If there is not a legally binding disincentive for moving out of Europe to balance the cost benefits of doing so, industry will move regardless of any agreement. Unite has seen to many voluntary industrial commitments fail to be impressed by an agreement which will be little more than what has come before.

Q27. Do you agree that free allocation should be based on EU-wide benchmarks? If not, how should free allowances be distributed between installations?

4.21. **Unite agrees that an allocation of EU-wide benchmarks would be far more beneficial than a nation by nation approach.** The preferred option would be one based on the relative performance of each site. In this way companies that have greatest need of assistance to adapt receive the greatest level of assistance.

Q28. Do you agree with the Commission proposal that there will be no sector caps with harmonised bottom-up benchmarks being used to divide up the sub-cap for free allocation?

4.22. **Unite believes that the imposition of sector caps would create significant problems for some industrial processes**. The absence of a cap would create an environment more conducive with a fully functional market for carbon.

4.23. The problem with any free allocation of certificates is that it is open to the abuse of companies receiving allocations, selling them and then closing. If a company was to wind down, Unite believes that that company should be required to return unused free allocation or face the prospect of buying enough back to meet their unused allocation, prior to the distribution of any assets to any shareholders.

Q29. Do you agree that there should be an EU wide new entrant reserve, based on a percentage of the overall cap?

4.24. **Unite feels that a reserve should be retained for new entrants. This would encourage the growth of manufacturing in Europe in at risk areas of manufacturing industry**.

Q30. Do you agree with the Commission proposed level for the new entrant reserve of 5 per cent of the overall EU cap or do you agree with the Government's position that it should be a lower percentage? What should the percentage be?

Please give reasons for your answer.

4.25. **Unite feels that the level of the reserve should reflect the growth potential for the sector in question.** A flat 5% may be undersubscribed by one area of the market but oversubscribed in another. Unite therefore believes that assessments of sectors should include the growth potential and allocate the reserve accordingly.

Q31. Do you agree with the Commission proposal that installations which close should not receive any further free allowances or that they should receive a longer period of free allocation? Please include why you support each approach.

4.26. **Unite feels that where an installation closes, every effort should be made to reopen it again.** This does not mean that the union would support additional free allowances to an installation that closes for only limited periods under the same ownership. Unite believes, therefore, that freshly reopened installations, under new management, should receive longer periods of free allocations.

Q32. Do you agree with the definition of a new entrant in the Commissions proposal? If not, why not?

4.27. **Unite believes that the definition of a new entrant should include the reopening of closed plants providing that the plant was not owned by the same company or an associated company.** In this way companies can not close a facility for a short period and then reclaim a fresh free new entrant's allowance.

Q33. Do you agree with the UK position that there should not be a system of hypothecation or earmarking of auctioning revenues?

4.28. **Unite believes that any revenues obtained from the auctioning of allowances should be earmarked for use within the effected sectors.** These funds should be used to assist companies in the purchasing of carbon reduction equipment, to help balance the effects of cheap imports from outside the EU, and to be invested into major carbon reduction projects, such as a CCS pipeline network, to channel CO_2 from major sources of emissions, not just the energy generators.

4.29. A CO_2 pipeline network could assist in reducing the global impact of concrete production, chemicals manufacture, and steel and aluminium production to name but a few examples.

4.30. Unite is concerned that if funds raised from auctioning are not reinvested directly into the carbon reduction process, it would lead to opponents to claim that the use of auctioning is just another stealth tax.

Q34. Do you agree with the Commission's proposals to make the basis for distributing auctioning allowances a Member State's share of 2005 emissions?

4.31. **Unite believes that there needs to be a clear position taken which reflects actual demand.** If a date is chosen which is too early, it would not allow those companies that have invested in reduction technology to profit from over allocation and recover the cost of this investment more quickly.

4.32. The aim of the EU ETS is, however, to reduce the level of emissions produced. As levels have continued to grow a target which is too early would reduce permitted emission levels way beyond what is needed and place to greater burden on industry. Addition Unite believes that going to far back would remove all relevance the figures would have on today's economic and environmental climate.

4.33. Currently despite efforts to reduce the levels of emissions by the member states, only a few have achieved that goal. Clearly a balance must be struck which results in real change. Unite believes that setting a level equal to the 2005 actual consumption figures will result in the EU ETS finally beginning to achieve its targets without placing to greater burden on industry.

Q35. Do you agree with the UK position that there should not be a system of redistribution of allowances to be auctioned? If not, why not?

4.34. **Unite believes that if a nation has invested heavily in adaptation methods it should be in a position to reap the rewards of that investment and recover its costs.** If a nation or company is allowed to remain on the business as usual approach by buying additional redistributed allocations from elsewhere, it disincentives that nation or company from making that investment. Consequently Unite agrees with the UK position.

Q36. Do you agree with the Commission's proposal for a Regulation to ensure auctions are open, transparent and non-discriminatory?

4.35. **Unite agrees that there is a clear desire for the auctioning process needs to be open and transparent and if the only way to ensure that such occurs is the passing of fresh regulation then Unite would support the commissions proposal.**

4.36. The problem with any auctioning process is that the rich are able to purchase more emissions, while poorer parties who cannot afford to invest in mitigation would also be the party who cannot afford to necessarily buy all the allocations they need. As a result of the economics of such a situation there will always be an inherent discriminatory nature which will favour the rich. Accessibility to small bidders is not the problem; it would be ensuring that the small scale bidder can afford the sums, which may be exchanged for allowances.

4.37. Consequently if the regulation will also ensure that the auctioning will be non-discriminatory, the definition of discriminatory would have to be defined very carefully, to prevent abuses of this regulation.

Q37. Which elements of auction design would you support or oppose being set by the Commission?

4.38. Unite has no desire to express a view on this issue

Q38. Do you agree with the Commission's proposed timetable for the auction design regulation of 31 December 2010?

4.39. Unite has no desire to express a view on this issue

5 Section 5: Linking to other trading systems and project credits

Q39. Do you agree with the Commission proposal to include the possibility of linking to national, sub-federal or regional entities? If not, why not?

5.1. **Unite agrees with the principle behind the need to link schemes globally and the desire to establish a global price for carbon**. Unite is concerned, however, that the marriage between any two schemes would have the potential of corrupting both if proper harmonisation does not take place and a unified open and transparent scheme is obtained. Consequently before any trading scheme is linked, both schemes would need to adapt to the others methodology, employing the best from both in attaining such unification.

5.2. If the commission are to link the EU ETS with sub-federal or regional entities extreme care must be taken to ensure that one scheme does not end up swamping the other with a disproportionately different allowance price per tonne of Carbon.

Q40. Are the Commission's criteria for linking the EU ETS with other Systems the right ones? If not, why not?

5.3. **Unite believes that the criteria suggested should become the minimum level adopted.** As stated previously the union does not agree with the principle of banking and borrowing and would be concerned if such a facility were included in a linked scheme.

Q41. Do you agree that consideration should also be given to the type and limits allowed on credits from baseline and credit Systems.

5.4. Unite has no desire to express a view on this issue

Q42. Do you agree with the Commission proposal to recognise credits post 2012 in anticipation of international agreement:

a. From projects approved before 2013 up to the remainder of credit limit in Phase II?

b. From projects in less developed countries approved after 2012?

c. Subject to the potential exclusion of CERS from particular projects established before 2013 by individual member states?

If not, why not?

5.5. **Unite believes that the limits on cross scheme credit transfer should remain capped to reduce the disproportionate flow of credits into or out of the EU ETS**. As stated previously the problem with an auctioning or market price for carbon is that it leads to the ricer nations purchasing the majority of the credits, allowing them to speculate on the market. By setting a cap it reduces this possibility.

Q43. Do you agree with the Commission proposal that once an international agreement is reached:

a. Access to project credits to increase by 50 per cent of the increase in absolute emissions reductions (i.e. half of the shift from the 20 per cent to the 30 per cent greenhouse gas emissions reduction target).

b. Access is limited to project credits from third countries that have ratified the agreement.

If not, why not?

5.6. Unite believes that any adjustments that are needed to the EU ETS should be demonstrated prior to the agreement being reached so that the two schemes are as synchronous as possible. Equally as many barriers should be constructed as

possible to prevent a corruption of the EU ETS or the other "linked" scheme by the other.

5.7. If the overall target is relaxed in anyway it would cause the price of carbon to destabilise reducing the certainty needed for long term planning and investment.

Q44. Do you agree with the Commission proposal that if an international agreement is delayed beyond 2013, the European Community should seek bilateral agreements with third countries to enable access to project credits to the extent that the limits from Phase II have not been used up? If not, why not?

5.8. Unite believes that if limits from Phase II have not been used up then one of three things has occurred

- The scheme has provided too many credits initially as in Phase I;
- The scheme has been corrupted by some outside scheme or interference
- The scheme has succeeded in reducing emissions above target levels.

5.9. In all respects the European Community should seek a method to address the balance to that a realistic price for carbon is maintained

Q45. Are the project credit limits that would result from the Commission's proposal at the right level? If not, why not?

5.10. Unite has no desire to express a view on this issue

Q46. Do you agree that the project credit limits in Phase III should be harmonised? If so, how can this be best achieved?

5.11. Unite has no desire to express a view on this issue

Q47. What provisions should be made in respect of the scope of recognition of credits in advance of international agreement, in particular should particular sectors be included or excluded in advance, and if not what provisions should be made for inclusion and exclusion of sectors upon international agreement.

5.12. **Unite believes that sectorally, there area number of 'at risk areas' of the economy that would benefit from the free allocation of credits**. In general terms, these are, primarily, those at greatest risk of carbon leakage.

Q48. Do you agree that credits from LULUCF projects could potentially be included in the EU ETS in the future? If so, how can the problems with inclusion of these credits be overcome?

5.13. **Unite believes that credits from whatever source could be included into the EU ETS, the question should be should the credits from the Land Use, Land-Use Change and Forestry (LULUCF) projects be included**. It is recognised that one of the largest source of green house gases is caused by the rearing of animals, however extreme care must however be taken when assessing the true relative value of the credits to insure that they are compatible

and do not corrupt the integral value of the EU ETS price for carbon. (see appendix 3)

Q49. Do you agree with the Commission's proposal to provide for credits from European Community projects? If not, why not?

5.14. **Unite agrees with the proposal to provide credits to the European Community projects.** Given the rise in the levels of GHG in the atmosphere any scheme that can assist in the reduction of green house gasses would be welcomed even if it is limited. The key focus should be on the actual tangible results of the project however, and not based on scientific theory.

6 Section 6: Monitoring, reporting and verification

Q50. Do you agree with the Commission proposal to introduce a regulation (to be agreed by the Commission-chaired committee of Member State representatives) to replace guidelines on monitoring and reporting?

6.1. **Unite believes that the provision of legislation would remove a considerable amount of flexibility that has occurred in the reporting and monitoring guidelines.** The provision of legislation would also create a more uniform policing of the scheme which is lacking in some areas. Unite is not suggesting that it is aware of any deliberate impropriety in its dealings with employers or other organisations, but can see ways in which the guidelines currently provide a wide scope in some areas for misunderstanding and incorrect interpretation. This has resulted in a disjointed approach to the process of reporting emissions between nations in the EU.

6.2. A clear and unambiguous approach, based of key indicators, would therefore clarify and unify the scheme.

Q51. Do you agree with the Commission proposal to introduce a regulation (to be agreed by the Commission-chaired committee of Member State representatives) for harmonised verification and accreditation? If not, why not?

6.3. **Unite agrees that there is a clear and present need for such a harmonised verification and accreditation process.** Unite does not feel, however, that the failure to report by a given date should preclude that organisation from continuing to trade. There needs to be a measured approach which allows some leeway for circumstances beyond the control of the reporting body.

Q52. Do you agree with the Commission proposal that the excess emissions penalty index should increase automatically in line with the European Index of Consumer Prices? If not, why not?

6.4. **Unite does not agree that the excess emissions penalty index should increase automatically in line with consumer prices as the price of carbon as this relative penalty may in time be surpassed by the price of carbon certificates.** If the price of a penalty is linked to any other index the relative value may well cause it to be lower that of purchasing certificates. As the commission

is proposing a penalty of €100 at time when the price of carbon is just €20 a tonne, why not have fines relative to five times the respective market price or an index linked minimum price, which ever would be the greater.

Q53. Do you agree with the Commission's proposal for a central registry run by the Commission? If not, why not?

6.5. Unite can see both sides of the argument re the introduction of a central registry but on balance feels that the benefits far out weigh the disadvantages.

7 Section 7: Further comments

Q54. Do you have any further views on any aspect of the Commission's proposals to amend the EU ETS from 2013?

CCS Network

7.1. Unite believes that there would be clear advantages created by the construction of a CCS pipe network which would enable industries other than energy generation to maximise their potential whist reducing their effect on the atmosphere. Funding the creation of such a network would require substantial investment of a scale which would exceed the levels of potential available from the industries that would most benefit. The investment in a CCS network would also attract industry currently at threat from carbon leakage. The current consultation is a strategic opportunity to kick start a regional CCS capture network, as in Yorkshire Forward's proposals[4] for a CCS capture cluster incorporating Drax, Corus, BP ConocoPhillips and several others.

7.2. The future of the coal industry and coal fired generation clearly rests on the viability of CCS on the scale envisaged by the IPCC. Unite believes that schemes such as that suggested by Yorkshire Forward could hold the potential of making a CCS viable. Such a scheme will require not just financial investment but also the creation of a new utility network with all the financial and security issues that go with it. As a result this scheme will require considerable government support and holds the potential for considerable rewards.

Consultation

7.3. Substantial evidence exists that environmental change happens fastest and most efficiently when workers are involved, and can often be lead to changes carried over into the home. We would therefore urge the Government to create a joint ETS policy-making forum with industry and trade unions to secure the schemes huge potential environmental, economic and social benefits.

8 Conclusion

8.1. Unite welcomes the opportunity to express its views on the array of issues that arise from the proposed changes that will occur post 2013 and feels that there are a considerable opportunities that can be forthcoming from these proposals.

[4] http://www.yorkshire-forward.com/www/view.asp?content_id=8701&parent_id=8669

Equally there are many challenges that are to be faced if we are to accomplish the goal of maintaining a stable economy in the face of global competition whilst simultaneously reducing our global footprint.

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Appendix

1 Return on Investment

There are many quick and easily savings that can be employed by employers in industry with knock on benefits due to reduced fuel bills. The problem here is one of education and making a strong case as to why employers should adopt these new practices and invest in the technological solutions. Once these easy fixes have been employed the problem then lies in the duration between the initial investment and the return seen on investment. In time it is thought that technology will discover ways of seeing significant gains as the investment into R&D finally begins to pay off. As a consequence, a cost benefit analysis would return a graph along the lines of that shown in Fig 1 below :

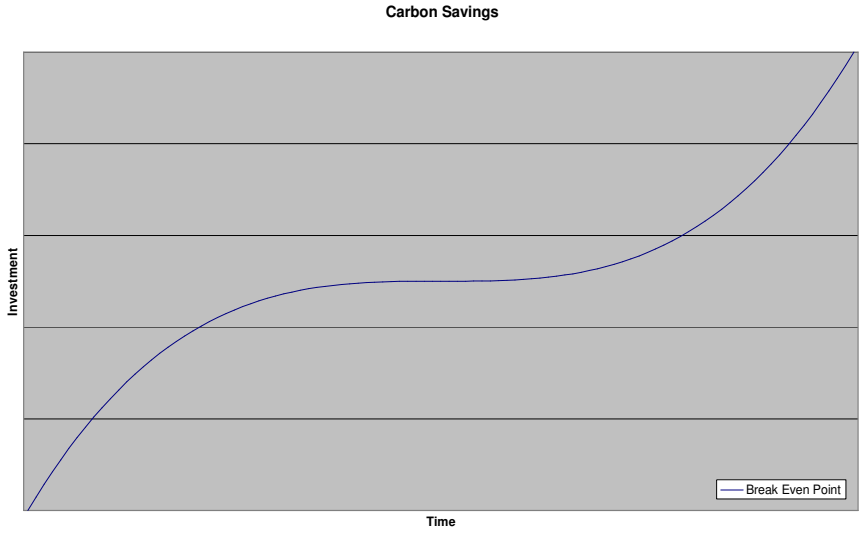

Fig 1 Cost to break even point graph

The speed of return on investment is clearly dependant on the cost of the energy supplied and the cost of carbon.

2 Heat

One needs to remember, however, that the vast majority of CHP units are fossil fuel powered with some running on fuel oil. A litre of fuel oil produces 10 kWh of energy but does so by releasing 2.8 kg of CO_2 e. Natural gas by contrast produces 1.9 kgs of CO_2e in generating the same 10 kWh. Clearly, therefore, the choice of fuel used to power the CHP unit has to be taken into account.

The formula below provides for a simple method for calculating the relative energy requirements for the heating of a liquid.

$$Q = \frac{MC(T1-T2)}{t}$$

Q = the amount of energy used to heat the water/liquid,

M = the mass of water to be heated in kg
C = the specific heat of water which is a constant (4.18 in the case of water)
T1-T2 = the temperature difference of the water/liquid.
t = time in seconds

A litre of water in Earth's gravity conveniently weighs 1 kg so to arrive at a figure per litre requires no need to convert density into volume. Other liquids have specific gravities which vary dependant on their relative density and hence would not allow such a simple conversion between mass and volume of the liquid used.

Once calculated, we would suggest that this figure is compared with an equivalent volume of water heated using the nation's grid supply average emission levels. In the case of the UK, 465 grams of CO2 are emitted per kWh due to the mix of generation methods utilised.

The result of this calculation shows that if one litre of is heated fro 20^{o} C to 100^{o} C it requires 0.0933 kWh of energy. If this energy was obtained via the national grid in the UK using a 100% efficient electric powered boiler it would cause the release of 43.04 grams of CO2. If a natural gas boiler is used emission levels per kWh can vary from around 600 grams of CO2 per kWh to around 400 grams of CO2 per kWh. This would mean that if powered by gas the emissions per litre would amount to between 56.0 and 37.3 grams of CO2.

As a CHP unit produces electricity at the same time as it heats water, Unite would suggest that the calculation of the emissions from such a unit should be arrived at using the below formula

$$e = \frac{E}{Q + W}.$$

Where e = the efficiency level of the unit in g CO2e per kWh
E = the total emissions in grams released during the process of heating the water
Q = the level of energy consumed in heating the water/liquid in kWh
W = the amount of electricity produced while heating the water/liquid from T1 to T2 in kWh.

In this way the CHP unit would be demonstrated to be far more environmentally efficient than the equivalent boiler system alone and requiring far fewer carbon allowances. As with the production of electricity, the further from the source the readings are taken, the greater decline in the efficiency of the unit. With electricity the decline is caused by the resistance of the wires. With heat generation, it is the cooling of the pipes over distance. Although insulation will reduce the amount of heat loss, it cannot eliminate it. Clearly, therefore, to obtain the maximum benefit, readings of both the electrical and heat output need to be obtained as close to the generating source as possible.

3 Change of Land Use

According to the United Nations "*Forests, through growth of trees and an increase in soil carbon, contain a large part of the carbon stored on land. Forests*

present a significant global carbon stock. Global forest vegetation stores 283 Gt of carbon in its biomass, 38 Gt in dead wood and 317 Gt in soils (top 30 cm) and litter. The total carbon content of forest ecosystems has been estimated at 638 Gt for 2005, which is more than the amount of carbon in the entire atmosphere. This standing carbon is combined with a gross terrestrial uptake of carbon, which was estimated at 2.4 Gt a year, a good deal of which is sequestration by forests. Approximately half of the total carbon in forest ecosystems is found in forest biomass and dead wood."[5]

The concern is that this process of CO_2 absorbance is far from permanent being reversed as a result of human activities, (with the release of GHG into the atmosphere), disturbances (e.g. forest fires or disease), or environmental change, including climate change. Rotting vegetation also produces methane which is many times more powerful as CO_2 in the atmosphere.

Planting trees will not totally mitigate the volumes of CO_2 in the atmosphere and indeed tree planting in some areas is defiantly not a good idea. Tree planting Researchers in North Carolina found that planting trees to soak up carbon dioxide can suck water and nutrients from the ground, dry up streams and change the soil's mineral balance. One acre of trees will use 1 million to 1.5 million gallons of water per year[6]. Frank Keppler and his team at the Max Planck Institute in Heidelberg, Germany, published research that says up to 30% of the world's methane, is actually produced by trees and other plant life[7].

Clearly any method that can cause a reduction in atmospheric GHG's should be explored but care needs to be taken not to choose a method which could only lock up these emissions for limited durations.

Forestry may not be the solution that everybody prior to 2006 had hoped due to its long term storage potential. Biofuel production promises the same potential as forestry once did but already the cracks in that potential are becoming to obvious from some of these potential fuel types. Biofuels derived from algae and salt water sources still hold promise but need substantial investment and new ways of farming.

[5] Taken from the UNFCCC website http://unfccc.int/methods_and_science/lulucf/items/4122.php
[6] according to Project Manager Chris Ewert, an environmental engineer with CBM Associates
[7] As reported in Nature April 2006