TYNE AND WEAR FIRE AND RESCUE AUTHORITY **Item No 11**

MEETING: FIRE AUTHORITY 21st NOVEMBER 2011

SUBJECT: PROGRESS IN DELIVERING THE ENVIRONMENT STRATEGY

REPORT OF THE CHIEF FIRE OFFICER

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1. INTRODUCTION

1.1 The purpose of this report is to update Members on the delivery of the Environment Strategy, and the impact this has had so far on the Service's energy consumption, fuel expenditure and carbon emissions.

2. BACKGROUND

2.1 In March 2010, the Authority agreed a revised Environment Strategy covering the period 2010-2014. In doing so, Members recognised the impact operations can have on the local and global environment, and undertook to examine our practices and take action to improve environmental performance.

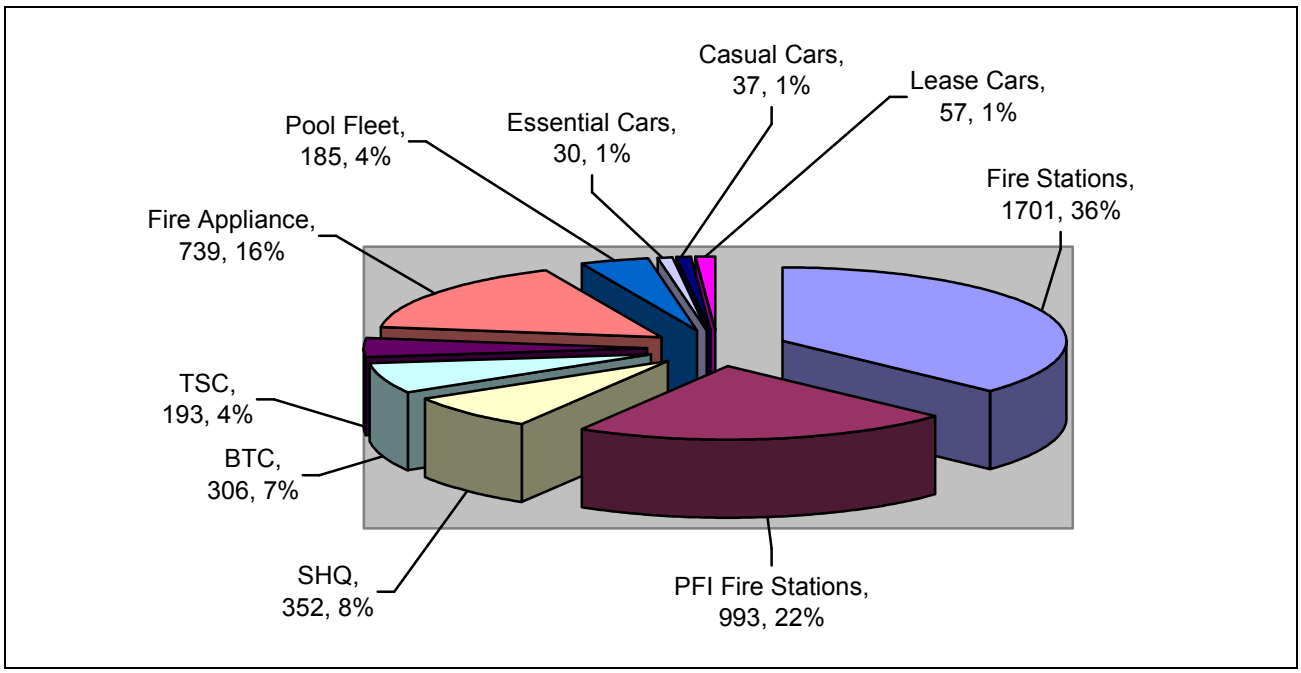
2.2 The Strategy is practically focused, and in essence seeks to deliver three objectives:

- to use natural resources efficiently and reduce overall consumption (with a 22% reduction target in CO2 emissions from April 2010 to March 2015)
- to reduce pollution and waste through our management of operational activities, buildings and fleet
- to promote engagement of the whole organisation in improving our environmental impact, and work with partners to improve environmental sustainability

2.3 A detailed plan of action is in place to deliver these objectives, driven by a cross organisation Environment Steering Group. Actions were developed with input from the Carbon Trust, which advised on those actions most likely to deliver environmental and financial payback in the shortest period. Provision has been made in the Capital Strategy to deliver the required investments.

3. ACTIONS

3.1 The target for carbon reduction is based on a baseline taken in 2008/9 with the assistance of the Carbon Trust. The carbon footprint in that year was 4,593 tonnes. As the diagram below shows, the majority of emissions come from use of buildings (3,545 tonnes), and reducing this has been the priority for actions in the early part of the strategy.



3.2 In the first 18 months of the strategy there has been a strong focus on improving the energy efficiency of specific buildings following analysis of energy consumption. Improvements to cavity wall, loft and pipe insulation are complete, and this is being followed with further physical improvements including:

- equipment timer controls
- fine tuning of the Building Energy Management systems (enabling us to monitor and improve energy use by specific locations
- feasibility work into the installation of door controls which channel heat to where it is needed
- plans to install condensing boilers at 3 stations
- automatic lighting controls to be in place by 2012/13
- Installation of solar panels at Station 21 in Gosforth, supported by regional funding (see also 3.9)

3.3 The service is working closely with our PFI partner JLIS to ensure the strategy can be delivered across all sites.

3.4 2010/11 also saw investment in a major ICT project to virtualise servers, reducing the number of physical servers from 60 to 36 with more reductions planned. It is estimated that this project will reduce server energy consumption by 80%.

3.5 Changes in staff behaviour underpin our efforts in reducing our carbon footprint, and this has been a key focus of effort. A Carbon Communications group has been established to develop campaigns to support behavior change (examples are attached as Appendix A), and Carbon Champions are now in place at all locations with a remit to improve the environmental impact at their location by encouraging team members to become more environmentally aware; personally championing greener working practices; and promoting more efficient use of environmental resources.

3.6 In terms of the vehicle fleet, the service has revised its specification for water tenders and as a result the tenders it has procured most recently are more fuel efficient. An energy efficient driving campaign has formed part of the communications strategy, with an opportunity for staff to take part in a simulator exercise.

3.7 The service has reduced the emissions upper limit for lease cars and agreed to review this every 2 years to take account of developments in vehicle technology. Trials of electric and hybrid cars are underway in 2011 which will assist us in determining future transport needs.

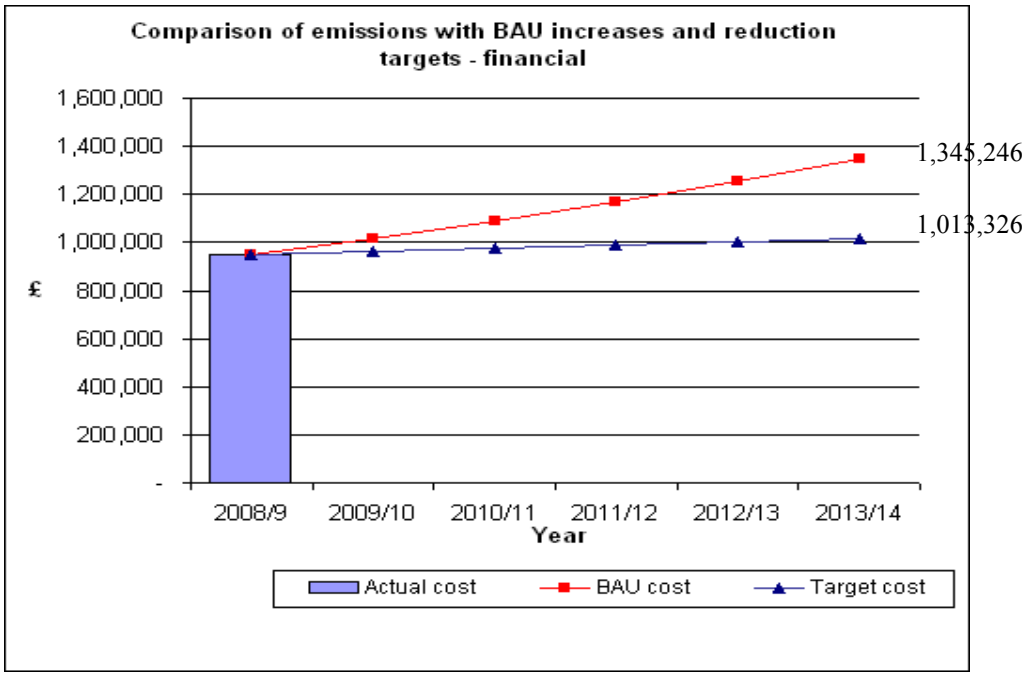
3.8 Whilst not introduced specifically from an environmental perspective, the service's Incident Command training suite (ICS) has allowed a significant increase in staff attending virtual exercise scenarios, from 97 staff in 2009/10 to 860 in the calendar year 2010 This represents 1458 vehicle movements not required through some training needs being met virtually.

3.9 TWFRS has continued to build the relationship with the Carbon Trust, and to maintain flexibility to respond to any current developments. An example of this was the decision to install the solar panels at Station 21. We had originally been advised that long payback periods made solar panels a less attractive option for reducing carbon emissions, and therefore did not include these in our plans. This changed with the introduction of Government's Feed-in Tariff grant initiative in 2010, which paid for all the electricity generated by solar panels and made the payback for solar panels much more attractive. This grant is now to be phased out for future developments, which will reduce the attractiveness of solar panels; however our relationships allowed us to take advantage of this incentive whilst it was available.

4. IMPACT

4.1 As a result of the actions set out above, based on the Carbon Trust's tool for calculating reductions, TWFRS has reduced its carbon emissions from buildings from 3,545 tonnes in the baseline year, to 3,023 tonnes in 2010/11, a reduction of 14.7% in the first year of the Environment Strategy. This is a good start on the target of a 22% reduction by March 2015.

4.2 In terms of financial impact, when the strategy was put in place, the Carbon Trust estimated that our proposed level of investment in energy efficiency would allow a reining in of expected increases in expenditure based on a projected 8.4% increase in fuel costs. The chart below shows the difference between projected rises in costs if we did nothing (BAU- Business as Usual), and the much shallower increase in revenue costs as a result of capital investment:



4.3 As a result of our actions, energy consumption across our sites has reduced with a resulting impact on utilities bills. This should be considered in the context of significant rises in gas and electricity tariffs during the last year[1], so that part of the impact of reduced consumption is to offset the level of additional cost resulting from tariff increases.

4.4 Actual spending on fuel at service owned stations is shown below, based on fuel consumption and tariffs (bills paid). This includes a projection for 2011/12 based on consumption reductions and indicates a reduction in spending compared to the levels in 2008/9, despite increased tariffs over this period, due to reduced consumption.

Year	**Gas**	**Electricity (£000)**	**Total**
2008/9	126,000	184,100	
2009/10	100,000	132,600	
2010/11	120,000	117,700	
2011/12 - projection	97,000	113,600	
Reduction over 4 years	**29,000**	**70,500**	**99,500**

[1] RPI figures published in October 2011 indicate that between quarter 3 of 2010 and quarter 3 of 2011, gas prices increased by 12.2% and electricity by 7.3%). This exceeds the projection of 8.4 made by the Carbon Trust in 2009.

4.5 In terms of the fleet, the impact of investment in energy efficient appliances, coupled with training in more efficient driving and a reduction in incidents overall, has assisted in reducing fuel consumption by 41,290 litres between 2008/9 and 2010/11 with at least some of this attributable to the carbon reduction plan.

5. FINANCIAL IMPLICATIONS

5.1 Provision was made within the Capital Programme for a three year programme of investment in carbon reduction initiatives, as follows:

Year	Capital
2010/11	199,678
2012/13	101,921
2013/14	207,735
Total	**509,334**

5.2 This programme has been managed flexibly by the Environment Group and overseen by the Asset Management Group.

5.3 The financial impact of investment is set out in section 4 above.

6. RISKS AND OPPORTUNITIES

6.1 A key objective of this programme, along with carbon reductions, was to rein in projected increases in utility costs due to tariff increases. There is evidence that this is happening; however if tariffs continue to increase at a higher than projected rate, costs may still rise more than predicted even with the investments.

6.2 In terms of opportunities, technology in this area is developing rapidly. For example, it is likely that developments in energy efficient vehicles will increase and reduce the costs of such vehicles to a level which could mean that investing in them would produce savings within a reasonable payback period.

7. RECOMMENDATIONS

7.1 Members are recommended to note the content of this paper, and comment on the delivery of the Environment Strategy to date.

Appendix A: Examples from the Environmental Awareness campaign

- Poster linking environmental and financial
- efficiency
- The Green Griffin
- Staff newsletter special edition
- Flexi sheet banners
- Intranet pages
- Carbon Champions handbook
- The Carbon Communications group