

**Appendix 2 - Energy & Carbon Management Projects Register (ECMPR) 2016-2021**  
**Planned Projects**

Project Number	Scope	Project description	Lead Officer	Capital Cost	Financial savings (Gross)	CO2 Savings (t/year)	Pay back (yrs)	From	Project Status (RAG)	Comments
1	IT	Improve IT data centre efficiency at County Hall - Eco cooling	Alan Barber / Apryl Pheasant	£160,000	£20,000	110 tCO <sub>2</sub>	8 to 9 years	2016	Red	Carried over from previous Carbon Management Plan 2011-2016. There have been delays to switching the Eco Cooling on whilst significant IT programmes and applications are migrated to virtual servers and the IT back up system is upgraded to run concurrently with the main servers
2	IT	Server virtualisation at County Hall	Alan Barber	Costs covered under HP contract	Savings accounted for under HP contract	14.8 tCO <sub>2</sub>	Up to 3 years (based on IBM white paper on Cloud Computing ROI)	2016	Amber	Server virtualisation is behind schedule. Estimated conservative 5% reduction on current server consumption. 2016 server consumption was 296.31 tonnes, 5% saving = 14.8 t
3	Property	Property asset rationalisation programme	Place Partnership / Janette Becket	£0	Dependent on sale costs	140 tCO <sub>2</sub>	Immediate	2016	Green	Estimate from properties currently 'under review' - estimated approx 25% under review to be sold/disposed
4	Property	Installation of renewable energy at WCC sites	Apryl Pheasant / Katie Bruton	£215,000	£18,920 per annum	85 tCO <sub>2</sub>	11 years	2017	Amber	Figures include potential 215kW PV installation on County Hall campus, under review. There may be further opportunities to be developed over the lifetime of the Plan, but these may be limited in light of the cut to the Feed in Tariff. Financial savings estimated on electricity cost savings per annum.
5	Property	Cavity wall/loft/valve insulation projects (Capital maintenance and Spend to Save)	Apryl Pheasant	Projects to be funded through Spend to Save or Capital Maintenance	To be calculated on a project-by-project basis	150 tCO <sub>2</sub>	2-4 years	2016	Green	Estimated 15% gas saving on remaining property portfolio that have not already benefitted from Spend to Save
6	Property	Lighting retrofit and replacement projects including sensors and controls (Capital maintenance and Spend to Save)	Apryl Pheasant	Projects to be funded through Spend to Save or Capital Maintenance	To be calculated on a project-by-project basis	195 tCO <sub>2</sub>	Up to 10 years (if spend to save)	2016	Green	Estimated 15% electricity savings on remaining property portfolio that have not already benefitted from Spend to Save.
7	Property	AMR/Systemslink Training for corporate buildings - Improvement of energy management practices across WCC estate	Apryl Pheasant / Katie Bruton	Already installed and available		280 tCO <sub>2</sub>	Immediate	2016	Green	Estimated 5% savings through gas and electricity AMR on remaining property portfolio
8	Property	Replacement of biomass boiler at Countryside Centre	Apryl Pheasant	£26,000	£33,430 in total over 20 year lifetime of RHI income	0.00	17 years	2016	Amber	Limited CO <sub>2</sub> savings as replacing current biomass boiler with simiar, but there will be increased income from the RHI which the previous boiler was not eligible for. Current feasibility shows the payback will be over 10 years, so not eligible for full Spend to Save funding. As there is no gas to the site, funding will need to be sought from alternative channels
9	Property	Voltage Optimisation	Apryl Pheasant	£20,000	£1,265	69.5 tCO <sub>2</sub>	5 years	2016/17	Amber	Stourport Civic Centre - approx 9% savings on consumption, funding yet to be confirmed
10	Communications	Awareness raising, communications and campaigns	Katie Bruton / Apryl Pheasant	£1,500		280 tCO <sub>2</sub>		2016	Green	Estimated 5% savings on gas and electricity consumption on remaining property portfolio. Engagement with site staff; Internal Comms Plan; Carbon Footprint campaign in reception at County Hall, campaign working with the Carbon Trust during 2017
11	Street Lighting	Street Lighting - replace approx. 400 lighting columns	Mark Colston	£450,000	Circa £9,000 per annum (energy is not the driver)	33 tCO <sub>2</sub>	N/A – there is a maintenance need to change the units anyway	2016	Green	Replace approximately 400 lighting columns in 2016-17, possible saving of 66,000 kwh per annum once complete. Hoping to extend this so it is a rolling programme of approximately 400+ units per annum to replace the 12,000 aged concrete columns still in the inventory - Funding dependent.
12	Street Lighting	Street Lighting - update some of the main traffic routes around the County to LED	Mark Colston	£100,000	£14,000	35.5 tCO <sub>2</sub>	7.1 (excl carbon charges)	2016	Amber	Project details to be confirmed
13	Street Lighting	Street Lighting - replacement of all of the county's 250w high pressure sodium lights	Mark Colston	£375,000	£46,000	180 tCO <sub>2</sub>	8.1 years (excl carbon charges)	2016	Amber	1073 units - Funding not confirmed. Potential Spend to Save project
14	Street Lighting	Street Lighting - Swap illuminated bollards and signs from fluorescent to LED with photocells for auto switch off	Mark Colston	£40,000	£6450	12 tCO <sub>2</sub>	6.2 years excl carbon charge	2016	Amber	1000 units (out of 8000 across the County) - Funding not confirmed. Potential Spend to Save project
15	Fleet	WCC Fleet - 2 Electric Pool Cars and Courier Van	Tim McNicholas	£37,552	£7,900	3 to 5 tCO <sub>2</sub>	5 years	2016	Amber	Courier van in operation, working very well. Final arrangements are being put in place to launch EV pool cars for staff business travel use

**Total potential CO2 savings = 1589.8 tonnes CO2**