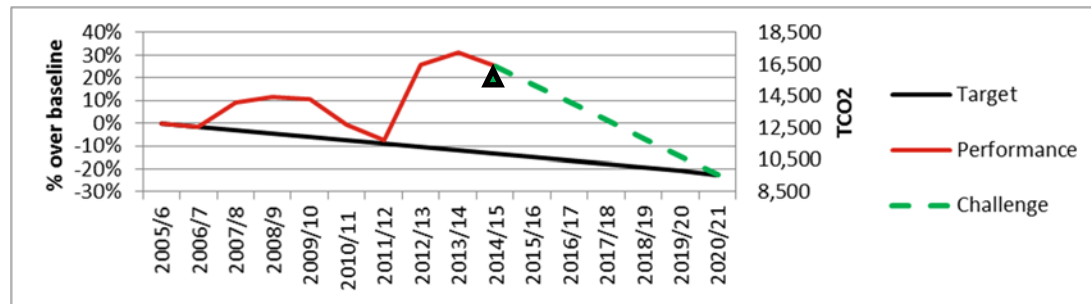


Energy and Carbon Management Plan

Date updated: 18/05/2016

Updated by: Fabia Jeddere-Fisher

Roadmap and Vision 2020



Targets:

- 22.5% total tCO₂ reduction by 2020/21 (from 2005/06)
- 1.5% annual reduction
- 10% of the University's electricity to be generated from renewables
- 5% of the University's gas to be generated from renewables

2015-16

	R,A,G,N	£k/y sav	tCO ₂ /y
1) Verdiem PC software	G	16	17
2) FR Stud. Vil. Recommission htg controls	G	60	215
3) Cfs lighting upgrade	C	30	117
4) FR T Block PV	G	46	200
5) WPR(ph1) htg controls	G	TBC	TBC
6) FR E Blk pipe insulation	C	1	8
7) PIR controls for A/C	A	TBC	TBC
8) GL htg upgrades	N	26	108
9) ECC Itg and htg upgrades	A	104	560
10) BMS building analytics	A	50	200
11) FR FBL Building PV	N	TBC	TBC
12) FR H, J, K & L LED Itg	G	54	200
13) FR District htg (T Block, SAP2 & FBL)	G	480	1100
14) FR T Block: BMS controls, Itg upgrades, htg controls, insulation, metering	A	TBC	300
Total		867	3025

2016-17

	R,A,G,N	£k/y sav	tCO ₂ /y
1) WPR display	A	15	66
2) GL metering	A	9	40
3) FR Carroll Court htg	N	TBC	TBC
4) FR Stud. Vil. centralised htg controls	N	TBC	434
5) WPR PV retrofit	N	TBC	TBC
6) GL Roof insulation	N	6	24
7) GL BMS improvements	N	22	94
8) SAP2 htg Controls	A	TBC	TBC
9) SAP2 PV	N	TBC	TBC
10) BA htg plant and controls	N	8	32
11) BA Fabric improvements (cavity wall/roof insulation etc)	N	0.6	3
12) BA Lighting upgrades to LED	A	3	14
13) FR E, N & G Block District Heat Network	N	128	774
14) ECC VSDs	N	5	23
15) FR FAS VSDs	N	5	22
Total		187	1460

2017-18

	R,A,G,N	£k/y sav	tCO ₂ /y
1) GL lighting upgrades	N	36	160
2) BA Solar PV on flat roofs	N	12	19
3) BA BMS improvements	N	18	75
4) BA Biomass boiler	N	51	441
5) FR S Block BMS review/recommission	N	21	89
6) FR F Block refurb	N	19	82
7) FR and GL catering controls (Savawatt)	N	6	27
8) FR Lighting upgrades (teaching space)	N	23	100
9) FR Library lighting upgrades	N	5	22
9) FR N Block refurb	N	26	110
10) FR ECC/T Block BMS (move onto Schneider BMS)	N	41	173
Total		258	1298

2018-19

	R,A,G,N	£k/y sav	tCO ₂ /y
1) FR PV (flat roofs)	N	73	176
2) FR Building 640 lighting	N	8	33
3) FR Boiler improvements (condensing boilers)	N	45	184
4) FR Catering lighting upgrades (OneZone, Core24)	N	4	19
Total		130	412

2019-20

	R,A,G,N	£k/y sav	tCO ₂ /y
1) FR Roof insulation (A-N and S Blocks)	N	41	168
Total		41	168

Totals across the plan:

£1,442K and 6,195tCO₂ annual savings

Status Key	
Complete	Project Complete
Green	Started/proceeding ok/Complete
Amber	Started but in early stages and/or minor issues
Red	Started but with significant issues
Not started	Not started/no progress yet