

Appendix 1 Stansted Airport Climate Change Action Plan

The list of projects to improve the energy efficient operation of the single-runway Airport is listed in Table A1.1 – Confirmed Projects and A1.2 – Unconfirmed Projects. This is referred to as the Stansted Airport Climate Change Action Plan. These measures have an effect upon the base case calculation by reducing emissions from the single runway airport buildings and systems. The energy reduction measures that have been incorporated in the assessment are the ones that have been confirmed with a budget a precise programme of implementation – namely those projects identified in Table A1.1.

Table A1.1 Stansted Airport Climate Change Action Plan – Confirmed projects

	BAA Ref	Project name	Description	Cost/ Programme	Emissions saved Tonnes of CO ₂		
Energy Management	3	Upgrade BMS	Replacement of existing BMS	£610,000 2007-2011	6500		
	9	Upgrade LV metering	Install new metering	£495,000 2007-2012			
	10	Upgrade HV metering	Install new metering	£495,000 2007-2012			
	11	SCADA	Install a HV monitoring and switching	£4,810,000 2007 -2012			
	Total for energy management savings					6500	
	Plant & system Upgrades	1	Chillers	Replacement of existing chillers Existing chiller CoP = 2.5, New Chiller CoP = 3.5 Enterprise House and Fire Station chillers initially; saving 375 kWh of electricity		£300,000 2007-2008	150
		2	CHP	Replacement of existing CHP with new plant with a higher load factor to improve efficiency, saving 672MWh of electricity		£1,112,000 2007-2009	285
4		Upgrade Terminal Lighting	Replacement with high efficiency lamps and controls; saving in electricity 315kWh	£320,000 2007-2012	135		
5		Tracked Transport Systems heating ventilating and air conditioning systems (HVAC)	Replacement of HVAC systems; saving 100MWh of electricity	£390,000 2007-2008	40		
6		AHU control valves	Replacement of existing valves to accommodate increased chilled water and heating water pressures for better control characteristics; saving in electrical energy 200MWh	£204,000 2007-2009	85		
7		VSD Drives	Install new inverters to fans and pumps for Terminal HVAC plant; saving 1200MWh	£204,000 2007-2009	500		
Total for Plant & Systems Upgrade				1195			

Table A1.2 Stansted Airport Climate Change Action Plan – Unconfirmed projects

No	Project Name	Description	Cost Description	Financial Cost	Benefit Description Likely Start Dates - TBC
12	Power Factor Correction	Currently in place. It ensures STAL do not pay for electricity we do not use.	To be considered (TBC)	TBC	Reduces financial risk and generates funds that can be used for energy efficiency initiatives
13	Fluorescent Lighting	Opportunity to replace existing sources across the airport with more energy efficient ones.	Tube replacement costs	TBC	Energy saving - % compared to BaU
14	Flood Light Towers	Opportunity to use new lamp/bulb technology and add light dimming equipment	xx light towers @ £xx a tower	TBC	Energy saving
15	Solar Lights	Opportunity to install solar panels to car park/ street lighting to reduce electrical usage - Builds on LGW trial	Cost estimates from Solargen - £2395 unit cost, £650 installation of light post, £500 to install 6 units	TBC - Depends on how many lights - opportunity to spread cost	Very high profile solution with general public. Direct electricity usage saving
16	Ground Heat Loops	Opportunity to introduce ground heat loops at Stansted to support building air conditioning. Initial funds to cover trial at the TTS building to assess potential for further roll out.	Installation of heat loop for trial at TTS to determine feasibility. Risk is technology is still developing - Current systems maybe superseded.	£1,400,000	Directly links to G2 strategy. Potential to make terminal Carbon neutral.
17	Combined heating and power plant	For terminal building	TBC	TBC	Reduced utility demand
18	Green Roofs	Investigate potential for putting green roofs on airport buildings - Currently explored potential with Bauder who has built green roofs at Amsterdam Schiphol, Stuttgart and Frankfurt airports, plus many buildings in East Anglia. They are based at Lakenheath so can source materials locally.	TBC - Possibility of free trial initially.	TBC	Up to 10% Energy savings due to reduced heat loss plus anticipated reduced roof maintenance costs
19	Lighting control system	Introduce new intelligent lighting control system to switch off lights based on movement sensors - Proven technology in terminal boiler rooms. Potential to trial at Enterprise house	Costs to replace and upgrade existing lighting infrastructure	£100,000	Energy saving as lights will automatically dim/turn off where possible
20	Use of free cooling	For Terminal - Using external air/overnight cooling	Minimal infrastructure costs - process controls required	TBC	Reduce electricity to cool air