



BNSTL KO01: Street & Traffic Lighting Government Standards Evidence Base 2009: Key Outputs

Version 1.1

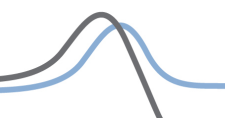
This Briefing Note and referenced information is a public consultation document and will be used to inform Government decisions. The information and analysis forms part of the Evidence Base created by Defra's Market Transformation Programme.

1 Introduction

- The aim of this Briefing Note is to provide a year-by-year summary of the main outputs from the Market Transformation Programme (MTP) 2009 models.
- There are four main sections to this Briefing Note, corresponding to the main outputs from the MTP modelling:
 - Stock
 - Sales
 - Energy Consumption
 - Government Standards – Charts and Tables

Abbreviations used in tables in this document:

CFL – Compact Fluorescent lamps
HPM – High Pressure Mercury
HPS – High Pressure Sodium
LPS – Low Pressure Sodium
GLS – Tungsten Halogen
LED – Light Emitting Diodes



2 Stock

- The following table details the MTP modelling outputs in terms of UK installed base of street & traffic lighting products:

Table 1 – Reference Scenario - Stock

	Stock ('000)									
	CFL	HPM	Metal Halide	HPS	LPS	Total Street	GLS	LED	Total Traffic	TOTAL All
2000	1,093	189	-	2,351	3,632	7,265	971	-	971	8,236
2001	1,109	171	-	2,530	3,523	7,333	1,000	-	1,000	8,332
2002	1,124	153	-	2,709	3,414	7,400	1,029	-	1,029	8,430
2003	1,139	139	-	2,886	3,305	7,469	1,058	-	1,058	8,528
2004	1,155	125	-	3,063	3,196	7,539	1,008	79	1,087	8,626
2005	1,169	110	-	3,242	3,087	7,608	959	157	1,116	8,726
2006	1,184	93	109	3,316	2,978	7,680	910	235	1,145	8,825
2007	1,199	72	218	3,393	2,869	7,751	931	243	1,174	8,926
2008	1,213	54	327	3,469	2,760	7,823	953	251	1,204	9,027
2009	1,226	41	436	3,536	2,647	7,886	891	342	1,233	9,119
2010	1,240	31	546	3,600	2,534	7,951	814	448	1,262	9,212
2011	1,255	21	656	3,662	2,422	8,016	702	589	1,291	9,306
2012	1,266	13	766	3,726	2,310	8,081	599	721	1,320	9,401
2013	1,277	8	876	3,794	2,201	8,156	534	815	1,349	9,506
2014	1,289	4	987	3,861	2,092	8,233	467	911	1,378	9,611
2015	1,300	2	1,097	3,928	1,983	8,310	395	1,012	1,407	9,717
2016	1,311	1	1,208	3,994	1,874	8,388	315	1,122	1,437	9,824
2017	1,321	-	1,320	4,060	1,765	8,466	226	1,239	1,465	9,931
2018	1,332	-	1,431	4,126	1,656	8,545	138	1,357	1,495	10,040
2019	1,342	-	1,543	4,193	1,547	8,625	49	1,475	1,524	10,148
2020	1,353	-	1,655	4,260	1,438	8,706	3	1,550	1,553	10,258
2021	1,365	-	1,767	4,325	1,329	8,786	-	1,582	1,582	10,369
2022	1,378	-	1,879	4,391	1,220	8,868	-	1,611	1,611	10,480
2023	1,391	-	1,992	4,458	1,111	8,952	-	1,640	1,640	10,592
2024	1,404	-	2,105	4,524	1,002	9,035	-	1,670	1,670	10,704
2025	1,417	-	2,218	4,592	893	9,120	-	1,699	1,699	10,818
2026	1,430	-	2,331	4,659	784	9,204	-	1,728	1,728	10,932
2027	1,443	-	2,445	4,727	675	9,290	-	1,757	1,757	11,047
2028	1,457	-	2,559	4,796	566	9,378	-	1,786	1,786	11,163
2029	1,470	-	2,673	4,864	457	9,464	-	1,815	1,815	11,280
2030	1,484	-	2,787	4,934	348	9,553	-	1,844	1,844	11,397

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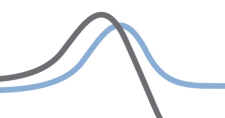


Table 2 Policy Scenario - Stock

	Stock ('000)									
	CFL	HPM	Metal Halide	HPS	LPS	Total Street	GLS	LED	Total Traffic	TOTAL All
2000	1,093	189	-	2,351	3,632	7,265	971	-	971	8,236
2001	1,109	171	-	2,530	3,523	7,333	1,000	-	1,000	8,332
2002	1,124	153	-	2,709	3,414	7,401	1,029	-	1,029	8,430
2003	1,139	139	-	2,886	3,305	7,470	1,058	-	1,058	8,528
2004	1,155	125	-	3,063	3,196	7,539	1,008	79	1,087	8,626
2005	1,169	110	-	3,242	3,087	7,609	959	157	1,116	8,726
2006	1,184	93	109	3,316	2,978	7,680	910	235	1,145	8,825
2007	1,199	72	218	3,393	2,869	7,751	931	243	1,174	8,926
2008	1,213	54	327	3,469	2,760	7,824	953	251	1,204	9,027
2009	1,226	40	436	3,536	2,647	7,887	891	342	1,233	9,119
2010	1,240	29	546	3,601	2,534	7,950	814	448	1,262	9,212
2011	1,255	19	656	3,663	2,422	8,015	702	589	1,291	9,306
2012	1,266	12	766	3,728	2,310	8,081	599	721	1,320	9,401
2013	1,277	7	876	3,796	2,201	8,156	534	815	1,349	9,506
2014	1,289	3	987	3,862	2,092	8,233	467	911	1,378	9,611
2015	1,300	2	1,097	3,928	1,983	8,310	395	1,012	1,407	9,717
2016	1,311	1	1,208	3,994	1,874	8,387	315	1,122	1,437	9,824
2017	1,321	-	1,320	4,060	1,765	8,466	226	1,239	1,465	9,931
2018	1,332	-	1,431	4,126	1,656	8,545	138	1,357	1,495	10,040
2019	1,342	-	1,543	4,193	1,547	8,624	49	1,475	1,524	10,148
2020	1,353	-	1,655	4,260	1,438	8,705	3	1,550	1,553	10,258
2021	1,365	-	1,767	4,325	1,329	8,786	-	1,582	1,582	10,369
2022	1,378	-	1,879	4,391	1,220	8,868	-	1,611	1,611	10,480
2023	1,391	-	1,992	4,458	1,111	8,951	-	1,640	1,640	10,592
2024	1,404	-	2,105	4,524	1,002	9,035	-	1,670	1,670	10,704
2025	1,417	-	2,218	4,592	893	9,119	-	1,699	1,699	10,818
2026	1,430	-	2,331	4,659	784	9,204	-	1,728	1,728	10,932
2027	1,443	--	2,445	4,727	675	9,290	-	1,757	1,757	11,047
2028	1,457	-	2,559	4,796	566	9,377	-	1,786	1,786	11,163
2029	1,470	-	2,673	4,864	457	9,465	-	1,815	1,815	11,280
2030	1,483	-	2,787	4,934	348	9,553	-	1,844	1,844	11,397

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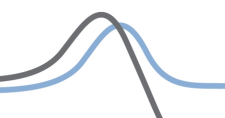


Table 3 Best Available Technology Scenario - Stock

	Stock ('000)									
	CFL	HPM	Metal Halide	HPS	LPS	Total Street	GLS	LED	Total Traffic	TOTAL All
2000	1,093	189	-	2,351	3,632	7,265	971	-	971	8,236
2001	1,109	171	-	2,530	3,523	7,333	1,000	-	1,000	8,332
2002	1,124	153	-	2,709	3,414	7,400	1,029	-	1,029	8,430
2003	1,139	139	-	2,886	3,305	7,469	1,058	-	1,058	8,528
2004	1,155	125	-	3,063	3,196	7,539	1,008	79	1,087	8,626
2005	1,169	110	-	3,242	3,087	7,608	959	157	1,116	8,726
2006	1,184	93	109	3,316	2,978	7,680	910	235	1,145	8,825
2007	1,199	72	218	3,393	2,869	7,751	931	243	1,175	8,926
2008	1,213	54	327	3,469	2,760	7,823	953	251	1,204	9,027
2009	1,226	41	436	3,536	2,647	7,886	75	1,158	1,233	9,119
2010	1,240	31	546	3,600	2,534	7,951	-	1,262	1,262	9,212
2011	1,255	21	656	3,662	2,422	8,016	-	1,291	1,291	9,306
2012	1,266	13	766	3,726	2,310	8,081	-	1,320	1,320	9,401
2013	1,277	8	876	3,794	2,201	8,156	-	1,349	1,349	9,506
2014	1,289	4	987	3,861	2,092	8,233	-	1,378	1,378	9,611
2015	1,300	2	1,097	3,928	1,983	8,310	-	1,407	1,407	9,717
2016	1,311	1	1,208	3,994	1,874	8,388	-	1,437	1,437	9,824
2017	1,321	-	1,320	4,060	1,765	8,466	-	1,466	1,466	9,931
2018	1,332	-	1,431	4,126	1,656	8,545	-	1,495	1,495	10,040
2019	1,342	-	1,543	4,193	1,547	8,625	-	1,524	1,524	10,148
2020	1,353	-	1,655	4,260	1,438	8,706	-	1,553	1,553	10,258
2021	1,365	-	1,767	4,325	1,329	8,786	-	1,582	1,582	10,369
2022	1,378	-	1,879	4,391	1,220	8,868	-	1,611	1,611	10,480
2023	1,391	-	1,992	4,458	1,111	8,952	-	1,640	1,640	10,592
2024	1,404	-	2,105	4,524	1,002	9,035	-	1,670	1,670	10,704
2025	1,417	-	2,218	4,592	893	9,120	-	1,699	1,699	10,818
2026	1,430	-	2,331	4,659	784	9,204	-	1,728	1,728	10,932
2027	1,443	-	2,445	4,727	675	9,290	-	1,757	1,757	11,047
2028	1,457	-	2,559	4,796	566	9,378	-	1,786	1,786	11,163
2029	1,470	-	2,673	4,864	457	9,464	-	1,815	1,815	11,280
2030	1,484	-	2,787	4,934	348	9,553	-	1,844	1,844	11,397



3 Sales

- The following table details the MTP modelling outputs in terms of annual UK sales:
- In most cases as per the Street & Traffic lighting models, the sales are estimated and do not refer to actual market data. They are outputs based upon stock and lifetime inputs.
- Please refer to the relevant Key Inputs GSBN for further details of actual sales/stock data used to calibrate the model.
- **Sales outputs are very similar across all three scenarios. This is because the modelling does not assume lamps switch *between* categories as a result of policies. Rather, efficiency improvements are seen *within* categories e.g. standard efficiency lamps become ‘plus’ efficiency lamps of the same type.**

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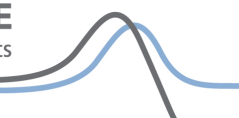


Table 4 Reference Scenario - Sales

	Sales ('000)									
	CFL	HPM	Metal Halide	HPS	LPS	Total Street	GLS	LED	Total Traffic	TOTAL All
2000	403	11	-	398	804	1,616	953	-	953	2,568
2001	409	45	-	413	724	1,591	920	-	920	2,510
2002	416	30	-	444	717	1,607	952	-	952	2,558
2003	421	22	-	471	705	1,619	978	-	978	2,598
2004	426	13	-	499	684	1,622	926	79	1,005	2,628
2005	432	12	-	524	653	1,621	881	79	960	2,581
2006	437	12	109	441	623	1,622	836	78	915	2,537
2007	442	8	111	466	600	1,627	861	9	871	2,497
2008	447	4	119	485	579	1,634	880	11	891	2,525
2009	451	3	141	497	550	1,642	817	96	913	2,556
2010	457	2	177	512	525	1,673	745	114	859	2,532
2011	463	1	209	526	499	1,698	639	154	793	2,491
2012	464	-	232	537	474	1,707	545	151	696	2,405
2013	469	-	255	547	452	1,723	488	120	608	2,331
2014	473	-	282	550	427	1,732	426	129	556	2,288
2015	477	-	311	555	401	1,744	360	143	503	2,247
2016	481	-	338	562	377	1,758	285	160	445	2,203
2017	485	-	364	572	352	1,773	203	178	380	2,153
2018	489	-	390	583	328	1,790	121	188	309	2,098
2019	492	-	417	594	303	1,806	39	200	239	2,045
2020	496	-	444	604	278	1,822	-	168	169	1,991
2021	502	-	471	611	254	1,838	-	138	138	1,976
2022	506	-	498	620	229	1,853	-	146	146	1,999
2023	511	-	525	628	204	1,868	-	157	157	2,025
2024	516	-	552	637	180	1,885	-	166	166	2,051
2025	521	-	580	646	155	1,902	-	174	174	2,075
2026	525	-	607	656	130	1,918	-	181	181	2,099
2027	530	-	634	665	106	1,935	-	187	187	2,122
2028	535	-	662	675	81	1,953	-	191	191	2,143
2029	540	-	689	684	56	1,969	-	193	193	2,163
2030	545	-	717	694	32	1,988	-	194	194	2,182

MARKET TRANSFORMATION PROGRAMME

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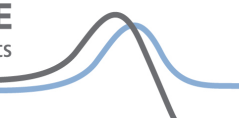


Table 5 Policy Scenario - Sales

	Sales ('000)									
	CFL	HPM	Metal Halide	HPS	LPS	Total Street	GLS	LED	Total Traffic	TOTAL All
2000	403	11	-	398	804	1,616	953	-	953	2,568
2001	409	45	-	413	724	1,591	920	-	920	2,510
2002	416	30	-	444	717	1,607	952	-	952	2,558
2003	421	22	-	471	705	1,619	978	-	978	2,598
2004	426	13	-	499	684	1,622	926	79	1,005	2,628
2005	432	12	-	524	653	1,621	881	79	960	2,581
2006	437	12	109	441	623	1,622	836	78	915	2,537
2007	442	8	111	466	600	1,627	861	9	871	2,497
2008	447	4	119	485	579	1,634	880	11	891	2,525
2009	451	3	141	497	550	1,642	817	96	913	2,556
2010	457	2	177	513	525	1,674	745	114	859	2,532
2011	463	1	209	526	499	1,698	639	154	793	2,491
2012	464	-	232	537	474	1,707	545	151	696	2,405
2013	469	-	255	547	452	1,723	488	120	608	2,331
2014	473	-	282	550	427	1,732	426	129	556	2,287
2015	477	-	311	554	401	1,743	360	143	503	2,246
2016	481	-	338	562	377	1,758	285	160	445	2,202
2017	485	-	364	572	352	1,773	203	178	380	2,153
2018	489	-	390	583	328	1,790	121	188	309	2,098
2019	492	-	417	594	303	1,806	39	200	239	2,045
2020	496	-	444	604	278	1,822	-	168	169	1,991
2021	502	-	471	611	254	1,838	-	138	138	1,976
2022	506	-	498	619	229	1,852	-	146	146	1,999
2023	511	-	525	628	204	1,868	-	157	157	2,025
2024	516	-	552	637	180	1,885	-	166	166	2,051
2025	521	-	580	646	155	1,902	-	174	174	2,075
2026	525	-	607	656	130	1,918	-	181	181	2,099
2027	530	-	634	665	106	1,935	-	187	187	2,122
2028	535	-	662	675	81	1,953	-	191	191	2,143
2029	540	-	689	684	56	1,969	-	193	193	2,163
2030	545	-	717	694	32	1,988	-	194	194	2,182

MARKET TRANSFORMATION PROGRAMME

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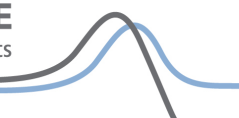
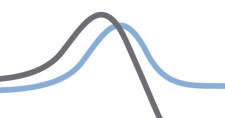


Table 6 Best Available Technology Scenario - Sales

	Sales ('000)									
	CFL	HPM	Metal Halide	HPS	LPS	Total Street	GLS	LED	Total Traffic	TOTAL All
2000	403	11	-	398	804	1,616	953	-	953	2,568
2001	409	45	-	413	724	1,591	920	-	920	2,510
2002	416	30	-	444	717	1,607	952	-	952	2,558
2003	421	22	-	471	705	1,619	978	-	978	2,598
2004	426	13	-	499	684	1,622	926	79	1,005	2,628
2005	432	12	-	524	653	1,621	881	79	960	2,581
2006	437	12	109	441	623	1,622	836	78	915	2,537
2007	442	8	111	466	600	1,627	861	9	871	2,497
2008	447	4	119	485	579	1,634	880	11	891	2,525
2009	451	3	141	497	550	1,642	1	912	913	2,556
2010	457	2	177	512	525	1,673	-	115	115	1,788
2011	463	1	209	526	499	1,698	-	46	46	1,743
2012	464	-	232	537	474	1,707	-	55	55	1,764
2013	469	-	255	547	452	1,723	-	69	69	1,792
2014	473	-	282	550	427	1,732	-	86	86	1,818
2015	477	-	311	555	401	1,744	-	107	107	1,851
2016	481	-	338	562	377	1,758	-	130	130	1,888
2017	485	-	364	572	352	1,773	-	153	153	1,926
2018	489	-	390	583	328	1,790	-	173	173	1,962
2019	492	-	417	594	303	1,806	-	186	186	1,992
2020	496	-	444	604	278	1,822	-	191	191	2,014
2021	502	-	471	611	254	1,838	-	189	189	2,027
2022	506	-	498	620	229	1,853	-	182	182	2,035
2023	511	-	525	628	204	1,868	-	173	173	2,041
2024	516	-	552	637	180	1,885	-	166	166	2,051
2025	521	-	580	646	155	1,902	-	163	163	2,065
2026	525	-	607	656	130	1,918	-	165	165	2,084
2027	530	-	634	665	106	1,935	-	171	171	2,107
2028	535	-	662	675	81	1,953	-	179	179	2,132
2029	540	-	689	684	56	1,969	-	187	187	2,157
2030	545	-	717	694	32	1,988	-	194	194	2,181



4 Energy Consumption¹

- The following tables detail the MTP modelling outputs in terms of annual UK energy consumption.
- Note: The policy energy consumption corresponds to the Government standards. All scenarios are the same until 2009.

¹ Energy consumption figures for the non-domestic sector in the 'Product policy analysis and projections 2010' document were scaled down to match DECC projections for overall energy demand (www.decc.gov.uk/en/content/cms/statistics/publications/dukes/dukes.aspx).

MTP data represents the best currently available information based on a bottom-up modelling approach. MTP's data is the basis for detailed energy calculations in the 'Product policy analysis and projections 2010'. However, DECC projections indicate that overall energy demand in the non-domestic sector is lower than projected by MTP's detailed models. MTP has assumed that the differences between the DECC overall projections and its detailed bottom-up projections are due to incomplete data on the following inputs for some of its non-domestic products:

- existing product stock;
- existing product efficiency;
- product usage.

The energy consumption figures in these GSBNs have **not** been scaled down, in order to enable constructive stakeholder comment on the MTP input data, and therefore differ from the ones presented in 'Product policy analysis and projections 2010'.

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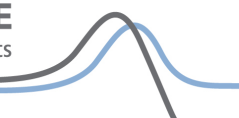


Table 7 Reference Scenario - Energy Consumption

	Reference Scenario Energy Consumption (GWh)									
	CFL	HPM	Metal Halide	HPS	LPS	Total Street	GLS	LED	Total Traffic	TOTAL All
2000	49	95	0	1191	1176	2511	198	0	198	2,709
2001	50	86	0	1294	1141	2571	204	0	204	2,775
2002	51	77	0	1398	1105	2631	210	0	210	2,841
2003	51	70	0	1501	1070	2692	216	0	216	2,908
2004	52	63	0	1604	1035	2754	206	5	211	2,964
2005	53	55	0	1708	1000	2816	196	9	205	3,021
2006	53	47	28	1743	964	2835	186	14	200	3,035
2007	54	36	57	1778	929	2854	190	14	204	3,059
2008	54	27	86	1814	894	2875	195	14	209	3,084
2009	55	21	114	1844	857	2891	182	18	200	3,090
2010	56	15	142	1871	820	2904	166	21	187	3,092
2011	56	10	170	1896	784	2916	143	26	169	3,086
2012	57	7	197	1918	748	2927	122	30	152	3,079
2013	57	4	225	1941	712	2939	109	31	140	3,079
2014	58	2	251	1961	677	2949	96	32	128	3,077
2015	58	1	278	1980	642	2959	81	33	114	3,073
2016	59	0	304	1998	607	2968	64	34	98	3,066
2017	59	0	324	2016	571	2970	46	35	81	3,051
2018	60	0	343	2033	536	2972	28	34	62	3,035
2019	60	0	363	2051	501	2975	10	34	44	3,019
2020	61	0	385	2068	466	2980	1	34	35	3,013
2021	61	0	408	2085	430	2984	0	32	32	3,017
2022	62	0	433	2103	395	2993	0	31	31	3,023
2023	62	0	459	2120	360	3001	0	30	30	3,031
2024	63	0	485	2137	324	3009	0	29	29	3,039
2025	64	0	511	2155	289	3019	0	28	28	3,047
2026	64	0	537	2172	254	3027	0	28	28	3,055
2027	65	0	563	2190	219	3037	0	27	27	3,063
2028	65	0	589	2207	183	3044	0	27	27	3,072
2029	66	0	615	2224	148	3053	0	27	27	3,081
2030	67	0	642	2242	113	3064	0	27	27	3,090

MARKET TRANSFORMATION PROGRAMME

Developing evidence for Government and business on energy using products

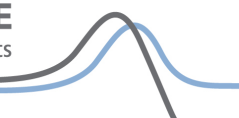


Table 8 Policy Scenario - Energy Consumption

Policy Scenario Energy Consumption (GWh)										
	CFL	HPM	Metal Halide	HPS	LPS	Total Street	GLS	LED	Total Traffic	TOTAL All
2000	49	95	0	1191	1176	2511	198	0	198	2,709
2001	50	86	0	1294	1141	2571	204	0	204	2,775
2002	51	77	0	1398	1105	2631	210	0	210	2,841
2003	51	70	0	1501	1070	2692	216	0	216	2,908
2004	52	63	0	1604	1035	2754	206	5	211	2,964
2005	53	55	0	1708	1000	2816	196	9	205	3,021
2006	53	47	28	1743	964	2835	186	14	200	3,035
2007	54	36	57	1778	929	2854	190	14	204	3,059
2008	54	27	86	1814	894	2875	195	14	209	3,084
2009	55	20	114	1844	857	2890	182	18	200	3,089
2010	56	15	141	1871	820	2903	166	21	187	3,090
2011	56	10	167	1896	784	2913	143	26	169	3,082
2012	57	6	193	1918	730	2904	120	30	150	3,054
2013	57	3	219	1940	678	2897	105	31	136	3,034
2014	58	2	245	1961	628	2894	89	32	121	3,014
2015	58	1	271	1980	582	2892	72	33	105	2,996
2016	59	0	297	1998	541	2895	54	34	88	2,982
2017	59	0	318	2015	506	2898	36	35	71	2,969
2018	60	0	339	2033	462	2894	20	34	54	2,948
2019	60	0	361	2050	419	2890	7	34	41	2,932
2020	61	0	383	2068	379	2891	0	34	34	2,925
2021	61	0	408	2085	341	2895	0	32	32	2,927
2022	62	0	433	2103	307	2905	0	31	31	2,935
2023	62	0	459	2120	277	2918	0	30	30	2,948
2024	63	0	485	2137	249	2934	0	29	29	2,964
2025	64	0	511	2155	222	2952	0	28	28	2,980
2026	64	0	537	2172	195	2968	0	28	28	2,996
2027	65	0	563	2190	168	2986	0	27	27	3,013
2028	65	0	589	2207	141	3002	0	27	27	3,030
2029	66	0	615	2224	114	3019	0	27	27	3,047
2030	67	0	642	2242	87	3038	0	27	27	3,064

MARKET TRANSFORMATION PROGRAMME

Developing evidence for Government and business on energy using products

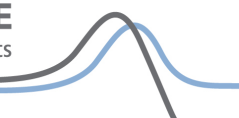
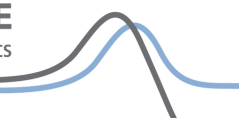


Table 9 Best Available Technology Scenario - Energy Consumption

Best Available Technology Scenario Energy Consumption (GWh)										
	CFL	HPM	Metal Halide	HPS	LPS	Total Street	GLS	LED	Total Traffic	TOTAL All
2000	49	95	0	1191	1176	2511	198	0	198	2,709
2001	50	86	0	1294	1141	2571	204	0	204	2,775
2002	51	77	0	1398	1105	2631	210	0	210	2,841
2003	51	70	0	1501	1070	2692	216	0	216	2,908
2004	52	63	0	1604	1035	2754	206	5	211	2,964
2005	53	55	0	1708	1000	2816	196	9	205	3,021
2006	53	47	28	1743	964	2835	186	14	200	3,035
2007	54	36	57	1778	929	2854	190	14	204	3,059
2008	54	27	86	1814	894	2875	195	14	209	3,084
2009	55	21	110	1841	816	2843	15	46	61	2,904
2010	56	15	133	1866	740	2810	0	50	50	2,860
2011	56	10	156	1889	669	2780	0	50	50	2,831
2012	57	7	178	1911	607	2760	0	51	51	2,811
2013	57	4	202	1934	559	2756	0	50	50	2,807
2014	58	2	227	1955	523	2765	0	50	50	2,815
2015	58	1	253	1974	494	2780	0	48	48	2,829
2016	59	0	278	1993	466	2796	0	47	47	2,844
2017	59	0	304	2012	439	2814	0	45	45	2,860
2018	60	0	330	2031	412	2833	0	42	42	2,874
2019	60	0	355	2049	385	2849	0	39	39	2,888
2020	61	0	381	2068	358	2868	0	36	36	2,903
2021	61	0	407	2085	331	2884	0	34	34	2,917
2022	62	0	433	2102	303	2900	0	31	31	2,932
2023	62	0	459	2120	276	2917	0	30	30	2,947
2024	63	0	485	2137	249	2934	0	29	29	2,963
2025	64	0	511	2155	222	2952	0	28	28	2,979
2026	64	0	537	2172	195	2968	0	27	27	2,996
2027	65	0	563	2190	168	2986	0	27	27	3,012
2028	65	0	589	2207	141	3002	0	27	27	3,029
2029	66	0	615	2224	114	3019	0	27	27	3,047
2030	67	0	642	2242	87	3038	0	27	27	3,064

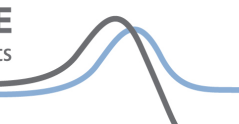


4.1 Differences in energy consumption compared to last published figures

- There have been a number of factors that have influenced the Reference Scenario since the evidence base was last published:
 - Historically the power utilised by the lighting ballasts (control gear) has not been fully accounted for. The inclusion of this power increases the historic power output by 8.6% (in 2007).
 - The number of traffic signal lamps was previously underestimated and the overall effect of this underestimation is to increase the 2007 power consumption by a further 5.5%.
 - A recent small scale survey of Local Authorities, conducted by MTP, has shown that the phase out of high-pressure mercury lamps has not been as rapid as previously modelled. Adaptations have been accordingly made to the current model, resulting in an additional 1.2% energy use in 2007.
 - A reassessment of some of the original source data (Aslec Survey 2001) has led to small adjustments of the average wattage of some of the lighting classes that adds an additional 2.7% to the historic energy consumption.
 - In total the historic energy consumption of the Reference Scenario has increased by up to 18.9% in 2007.
- The Energy using Products implementing measure on Tertiary lighting makes a significant impact on the future projections for energy usage in this sector. It has also been assumed that the cost effectiveness (and technical quality) of LED traffic signals will increase over the next decade such that all traffic signal heads will have been replaced with LED heads by 2021.
- The combination of these two factors means that MTP's earlier projections of energy consumption growing by about 1.6% per annum due to increased street lighting has now changed. Instead, from 2010 it is expected that energy consumption first decreases (2015 energy consumption is 0.6% lower than 2010; 2020 consumption is 2.5% lower than 2010) then increases slowly as more lamps are installed (2025 consumption is only 1.5% lower than 2010 and 2030 consumption is 0.1% lower than 2010).

5 Government Standards

- As part of its commitments in May 2007's Energy White Paper, the Government, via its Market Transformation Programme, is obliged to "publish a series of consultation papers setting out [its] analysis of how the performance of energy-using products will need to improve over the next 10-20 years, including proposals for product standards and targets to phase out the least efficient products"

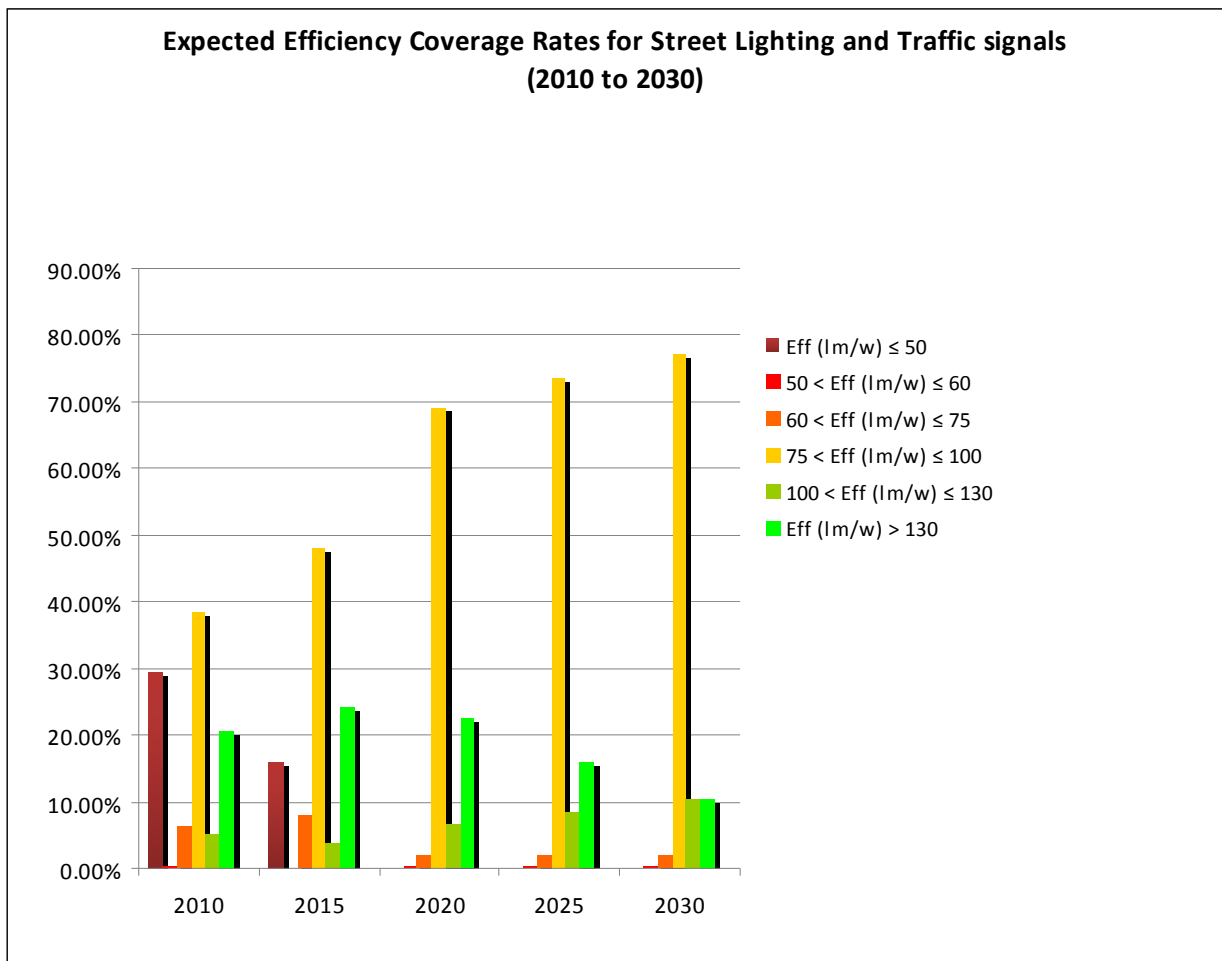


- In 2010 the Government published “Product policy analysis and projections 2010’. The proposals for product standards which would achieve the policy scenario for street and traffic lighting products in the Non-Domestic Lighting annexe of this document are given below. These are represented in both graphical and tabular form, in order to be helpful to a wide range of audiences.

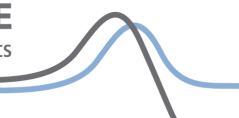
5.1 Charts

- The following chart illustrates the expected market distribution over time of the products addressed against the relevant efficiency metric for street & traffic lighting.

Figure 1 - Expected sales distribution for lumens/watt for Street & Traffic Lighting



- The highest efficiency category for street lighting (>130 lm/w) represents low-pressure sodium lighting which is being replaced on grounds other than simple lamp efficacy.e.g. aesthetic preferences.



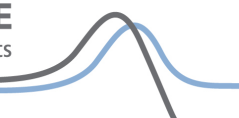
5.2 Tables

- The market distributions illustrated in the previous section, translate to measurements of average sales efficiency over time (stated in terms of efficiency, power consumption or efficiency formulae for example).
- The following tables illustrate the expected change in average *efficiency* over time of the products addressed. Note: These tables reflect one possible mix of sales distributions to achieve the government standards.

Table 10 Government Standard Sales Market Average

Average lumens/watt

	Street lighting	Traffic Lighting
2009	103.7	24.7
2010	102.8	28.6
2011	101.9	35.1
2012	105.9	39.4
2013	105.1	39.6
2014	104.1	45.9
2015	103.3	54.7
2016	102.4	67.6
2017	103.5	85.4
2018	105.6	109.3
2019	104.5	140.3
2020	103.4	162.0
2021	102.4	162.0
2022	101.3	162.0
2023	100.3	162.0
2024	99.3	162.0
2025	98.3	162.0
2026	97.3	162.0
2027	96.3	162.0
2028	95.4	162.0
2029	94.5	162.0
2030	93.6	162.0



Related MTP information

- BNCL01: Street & Traffic Lighting Government Standards Evidence Base 2009: Key Inputs
- BNCL02: Street & Traffic Lighting Government Standards Evidence Base 2009: Reference Scenario
- BNCL03: Street & Traffic Lighting Government Standards Evidence Base 2009: Policy Scenario
- BNCL04: Street & Traffic Lighting Government Standards Evidence Base 2009: Best Available Technology Scenario

Changes from Version 1.0

- Corrections made to 2030 data in Table 2.
- Reference to 2009 consultation document replaced with final document 'Product policy analysis and projections 2010'.
- Minor changes to GSBN template.

Consultation and further information

Stakeholders are encouraged to review this document and provide suggestions that may improve the quality of information provided, email info@mtprog.com quoting the document reference, or call the MTP enquiry line on +44 (0) 845 600 8951.

For further information on related issues visit <http://efficient-products.defra.gov.uk>