

BNSTL03: Street & Traffic Lighting Government Standards Evidence Base 2009: Policy Scenario

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 Policy Scenario is a projection of what would happen if a defined set of new product-specific and related cross-cutting policies were implemented. The policies in the Policy Scenario have not yet been agreed or funded but represent those policies which are expected to be introduced as well as likely future revisions to existing policies and, in some cases, novel policy options. These policies aim to improve the average efficiency of products in the stock through a variety of mechanisms (e.g. minimum standards, product information and labelling, procurement, incentives) and thus reduce energy consumption and carbon emissions resulting from these products.
- As product policy is considered within the context of climate change policy, the UK government considers policies with a net UK costs of up to around £20 per tonne of CO₂ saved (compared to the reference scenario). The ambition level, at a minimum, matches the Least Life Cycle Cost (LLCC) level to society of increased energy efficiency of products.
- The costs for each policy, where known, are also included, separated out for government, consumer and industry.
- This GSN covers lamps, ballasts and luminaires used for street & traffic lighting.
- Street lighting refers to all public street lighting and signage. Lamps used for street lighting are CFLs (for signage), High-Pressure Mercury, Metal Halide, High-Pressure Sodium (HPS) and Low-Pressure Sodium (LPS).

- Traffic lighting refers to traffic signals. General Lighting Service (GLS) and Light Emitting Diodes (LEDs) lamps are used for traffic signals. GLS lamps refer to tungsten halogen lamps.

2 Scenario outputs

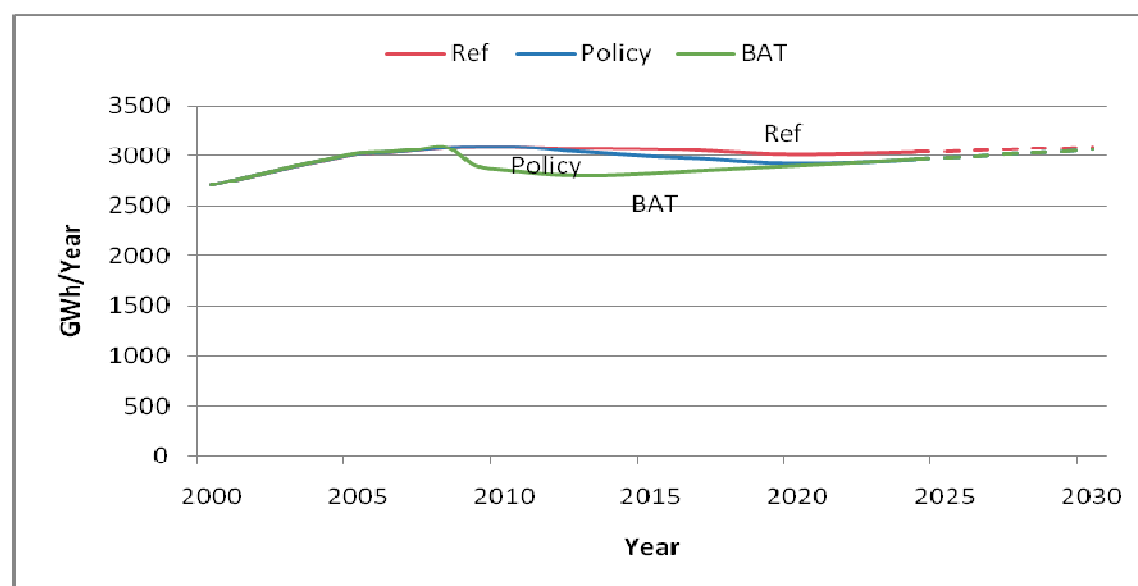


Figure 1: Street & Traffic lighting energy consumption, 3 scenarios

Table 1 Summary energy¹ and CO₂² data (Street lighting)

Energy Consumption (GWh)	2009	2020	2030
CFL	60	60	70
High pressure mercury	20	0	0
Metal Halide	110	380	640
High pressure sodium	1840	2070	2240
Low pressure sodium	860	380	90
TOTAL	2890	2890	3040

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'.

² For CO₂ factors, please see MTP Briefing Note BNXS01 [Carbon Dioxide Emission Factors for UK Energy Use](#)

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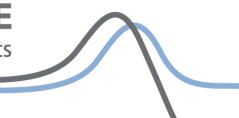
Energy Savings (GWh)			
CFL	0	0	0
High pressure mercury	0	0	0
Metal Halide	0	0	0
High pressure sodium	0	0	0
Low pressure sodium	0	90	30
TOTAL	0	90	30
CO ₂ Emissions (MtCO ₂)			
CFL	0.02	0.03	0.03
High pressure mercury	0.01	0.00	0.00
Metal Halide	0.05	0.165	0.28
High pressure sodium	0.79	0.89	0.96
Low pressure sodium	0.37	0.163	0.04
TOTAL	1.24	1.24	1.31
CO ₂ Emissions Savings (MtCO ₂)			
CFL	0.00	0.00	0.00
High pressure mercury	0.00	0.00	0.00
Metal Halide	0.00	0.00	0.00
High pressure sodium	0.00	0.00	0.00
Low pressure sodium	0.00	0.04	0.01
TOTAL	0.00	0.04	0.01

Table 2 Summary energy and CO₂ data (Traffic Lighting)

Energy Consumption (GWh)	2009	2020	2030
GLS	180	0	0
LED	20	30	30
TOTAL	200	30	30
Energy Savings (GWh)			
GLS	0	0	0
LED	0	0	0
TOTAL	0	0	0
CO ₂ Emissions (MtCO ₂)			
GLS	0.08	0.00	0.00
LED	0.01	0.01	0.01
TOTAL	0.09	0.01	0.01
CO ₂ Emissions Savings (MtCO ₂)			
GLS	0.00	0.00	0.00
LED	0.00	0.00	0.00
TOTAL	0.00	0.00	0.00

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- No energy savings are expected for traffic lighting.

Table 3 Summary costs & benefits data³

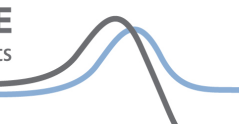
	Average annual energy savings (£m)	Average annual product & policy cost increases (£m)	Net Benefit (2009-2030) (£m)	Cost Effectiveness (traded) (£/tCO ₂)
Street & Traffic Lighting	5.6	1.4	63	-94.6

Table 4 Government Standards (Street Lighting)

	Percentage of sales in each classification (Street Lighting)					
	Average lumens/watt	≤60 lm/w	60 < lm/w ≤75	75 < lm/w ≤100	100 < lm/w ≤130	>130 lm/w ⁴ :
2009	103.7	0.3%	9%	56%	1%	33%
2010	102.8	0.3%	9%	58%	1%	31%
2011	101.9	0.2%	10%	59%	1%	29%
2012	105.9	0.2%	10%	59%	3%	28%
2013	105.1	0.2%	10%	60%	4%	26%
2014	104.1	0.2%	10%	61%	4%	25%
2015	103.3	0.2%	10%	62%	5%	23%
2016	102.4	0.2%	10%	63%	5%	21%
2017	103.5	0.2%	2%	72%	6%	20%
2018	105.6	0.2%	2%	73%	6%	18%
2019	104.5	0.2%	2%	74%	7%	17%
2020	103.4	0.2%	2%	75%	7%	15%
2021	102.4	0.2%	2%	76%	8%	14%
2022	101.3	0.2%	2%	77%	8%	12%
2023	100.3	0.2%	2%	78%	8%	11%
2024	99.3	0.2%	2%	79%	9%	10%
2025	98.3	0.2%	2%	80%	9%	8%
2026	97.3	0.2%	2%	81%	10%	7%
2027	96.3	0.2%	2%	82%	10%	5%
2028	95.4	0.2%	2%	83%	11%	4%
2029	94.5	0.2%	2%	84%	11%	3%

³ The factors used to calculate the cost and benefit data are given in BNXS26 Rationale for policy cost and benefit estimates used in MTP Government Standards Modelling.

⁴ 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 and security considerations.



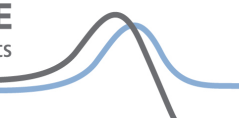
	Percentage of sales in each classification (Street Lighting)					
	Average lumens/watt	≤60 lm/w	60 < lm/w ≤75	75 < lm/w ≤100	100 < lm/w ≤130	>130 lm/w ⁴ :
2030	93.6	0.2%	2%	85%	11%	2%

Table 5 Government Standards (Traffic Lighting)

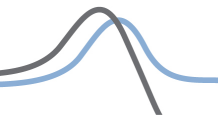
	Percentage of sales in each classification (Traffic Lighting)			
	Average lumens/watt	≤50 lm/w	100 < lm/w ≤130	>130 lm/w:
2009	18.5	89%	11%	0%
2010	18.7	87%	13%	0%
2011	24.7	81%	0%	19%
2012	28.6	78%	0%	22%
2013	35.1	80%	0%	20%
2014	38.9	77%	0%	23%
2015	38.6	72%	0%	28%
2016	44.2	64%	0%	36%
2017	52.3	53%	0%	47%
2018	64.2	39%	0%	61%
2019	81.7	16%	0%	84%
2020	105.8	0%	0%	100%
2021	138.6	0%	0%	100%
2022	162.0	0%	0%	100%
2023	162.0	0%	0%	100%
2024	162.0	0%	0%	100%
2025	162.0	0%	0%	100%
2026	162.0	0%	0%	100%
2027	162.0	0%	0%	100%
2028	162.0	0%	0%	100%
2029	162.0	0%	0%	100%
2030	162.0	0%	0%	100%

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- The performance levels and timings for each of the policy measures in the policy mix are given below.
 - Energy Using Product (ErP) measure on Directional Lighting
 - 2013: All new tungsten halogen (GLS) traffic signal lamps are IR version
 - Revision of ErP measure on Tertiary Lighting
 - 2018: LPS lamps introduced at level that requires all sales are 'Eco' version
 - Green Public Procurement Criteria:
 - 2009: 30% more HP mercury lamps switch to HP sodium than in Reference Scenario; 15% more HPS and metal halide lamp sales are 'enhanced' versions
 - 2010: 30% more HPS and metal halide lamp sales are 'enhanced' versions compared to Reference Scenario
 - Voluntary Procurement Scheme
 - 2013: Half of all LPS lamps sold are 'Eco' version



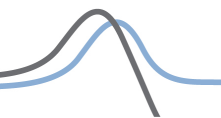
3 Future potential policy & measures

Table 6 Future potential policies & measures, Policy Scenario

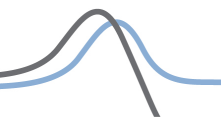
Policy name	Period in force	Description	Impact	Cost	Justification
Energy Using Product (ErP) measure on Directional Lighting	2013-2018	Mains halogen reflector lamps used for traffic signals to be replaced with IR coated reflector halogens.	40% of the market affected.	Cost premium of an IR coated reflector halogen is around 100%, but they last 100% longer.	The move to IR coated reflector halogen results in a 40% saving for traffic signals. However this policy would require product development.
ErP measure on Tertiary Lighting - Revision	2018-2025	By 2018 all low pressure sodium lamps will be required to move to an 'Eco' version of the lamp, where suitable ballasts allow this.	Up to 85.8% of the market affected (see voluntary procurement scheme below).	Cost premium of 'eco' low-pressure sodium lamps is around 9%.	The 'Eco' lamps are 27% more efficient. The UK is one of the few countries with a significant LPS population, so it is possible that this measure could be included in the revision of the ErP measure expected in 5 years.
Green Public Procurement Criteria	2010 - 2012	This voluntary initiative is currently under discussion.	It is assumed that around 30% of Local Authorities will invest in improved HPS and Metal Halide lamps, and will phase out a proportion of their high pressure mercury lamps ahead of the ErP	Cost premium of HPS 'plus' lamps is around 49%; ceramic metal halide lamps are often cheaper than 'standard' version. Cost premium for 1:1 replacement of	Enhanced version 'plus' for HPS; ceramic for metal halide is around 12% more efficient on average than standard version. Replacing an HP mercury lamp with a HPS 'plus' lamp saves 33% of

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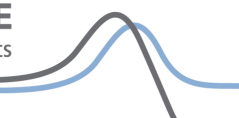
Policy name	Period in force	Description	Impact	Cost	Justification
			Tertiary Lighting Directive.	HP mercury lamp is currently 436% but energy saving is substantial.	energy.
Voluntary Procurement Scheme	2012 onwards	In order to pre-empt the effect of the revision of the ErP measure on LPS lamps a voluntary procurement scheme could be implemented.	This could bring about a move of approximately 50% of suitable LPS lamps towards 'Eco' replacements from 2012.	Cost premium of 'eco' low-pressure sodium lamps is around 9%.	The 'Eco' lamps are 27% more efficient. It is suggested that one route to pre-empt the effects of the ErP measure might be to encourage voluntary procurement with Local Authorities.
Policies contributing towards trends in the Policy Scenario					
<ul style="list-style-type: none"> - Update of lighting energy label - Energy Services Directive: to trial a central management system to control inventory and power factors for street lighting - Further PFI contracts 			The impact of these measures has not been quantified in the Policy Scenario, though it is understood that they are likely to contribute to the observed energy consumption pattern.		



Policy timeline

- The following policy timeline identifies when policies come into effect, including future revisions

Policy name	Current specific ation in force	2009	2010	2011	2012	2013	2014	2015	2016-2020	2021-2025	2026-2030
Energy Using Product (ErP) measure on Directional Lighting			Expected to enter into force								
ErP measure on Tertiary Lighting - Revision	2009								Revision expected		
Green Public Procurement Criteria			Assumed to enter into force								
Voluntary Procurement Scheme					Assumed to enter into force						



4 Efficiency

4.1 Summary

- The base efficiency metric used in the Government standards is lamp luminous efficacy measured in lumens per watt. This is a measure of the amount of light emitted by the lamp (in lumens) for the amount of electrical power consumed (rated wattage in watts). The sales-weighted average efficacy of the total new lamp sales is presented.
- For simplicity the efficiency of the ballast (lamp control gear) is not accounted for in this metric although it has been fully accounted for in the model as a whole.
- The efficiency metrics quoted below correspond to values that are relevant to the average wattage of each lamp type. Lamp efficiency is dependant on wattage, so efficiency of lamps of lower than average wattage will be lower than the figures quoted, and for lamps of higher than average wattage, efficiency will be higher.
- 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.

Table 7 Street Lighting Efficiency Metrics

	Lumens/Watt					
	TOTAL	CFL	High Pressure Mercury	Metal Halide	High Pressure Sodium	Low Pressure Sodium
2007	105.2	80.9	49.0	70.0	92.8	140.0
2010	102.8	80.9	49.0	77.7	93.2	140.0
2020	103.4	80.9	49.0	95.6	95.9	172.6
2030	93.6	80.9	49.0	95.6	97.9	172.6

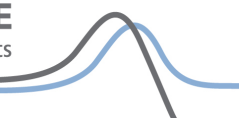


Table 8 Average efficiency metric based on distribution of sales (Street Lighting)

	Percentage of sales in each classification					
	Average lumens/watt	≤60 lm/w	60 < lm/w ≤75	75 < lm/w ≤100	100 < lm/w ≤130	>130 lm/w:
2009	105.2	0.3%	9%	56%	1%	33%
2010	104.5	0.3%	9%	58%	1%	31%
2011	103.7	0.2%	10%	59%	1%	29%
2012	102.8	0.2%	10%	59%	3%	28%
2013	101.9	0.2%	10%	60%	4%	26%
2014	105.9	0.2%	10%	61%	4%	25%
2015	105.1	0.2%	10%	62%	5%	23%
2016	104.1	0.2%	10%	63%	5%	21%
2017	103.3	0.2%	2%	72%	6%	20%
2018	102.4	0.2%	2%	73%	6%	18%
2019	103.5	0.2%	2%	74%	7%	17%
2020	105.6	0.2%	2%	75%	7%	15%
2021	104.5	0.2%	2%	76%	8%	14%
2022	103.4	0.2%	2%	77%	8%	12%
2023	102.4	0.2%	2%	78%	8%	11%
2024	101.3	0.2%	2%	79%	9%	10%
2025	100.3	0.2%	2%	80%	9%	8%
2026	99.3	0.2%	2%	81%	10%	7%
2027	98.3	0.2%	2%	82%	10%	5%
2028	97.3	0.2%	2%	83%	11%	4%
2029	96.3	0.2%	2%	84%	11%	3%
2030	95.4	0.2%	2%	85%	11%	2%

Table 9 Traffic Lighting Efficiency Metrics

	Lumens/Watt		
	TOTAL	GLS	LED
2007	18.5	18.1	48.0
2010	28.6	18.1	97.0
2020	162.0	18.1	162.0
2030	162.0	NA	162.0

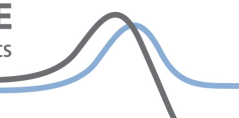
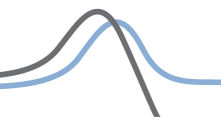


Table 10 Average efficiency metric based on distribution of sales (Traffic lighting)

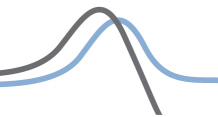
	Percentage of sales in each classification			
	Average lumens/watt	≤50 lm/w	100 < lm/w ≤130	>130 lm/w:
2009	24.7	89%	11%	0%
2010	28.6	87%	13%	0%
2011	35.1	81%	0%	19%
2012	39.4	78%	0%	22%
2013	39.6	80%	0%	20%
2014	45.9	77%	0%	23%
2015	54.7	72%	0%	28%
2016	67.6	64%	0%	36%
2017	85.4	53%	0%	47%
2018	109.3	39%	0%	61%
2019	140.3	16%	0%	84%
2020	162.0	0%	0%	100%
2021	162.0	0%	0%	100%
2022	162.0	0%	0%	100%
2023	162.0	0%	0%	100%
2024	162.0	0%	0%	100%
2025	162.0	0%	0%	100%
2026	162.0	0%	0%	100%
2027	162.0	0%	0%	100%
2028	162.0	0%	0%	100%
2029	162.0	0%	0%	100%
2030	162.0	0%	0%	100%



4.2 Data sources – efficiency

Table 11 Efficiency data sources (Street Lighting)

Year	Lamp Type	Reference	Reference date	Author	Justification	Confidence in sources (High/Low)
2009 - 2030	All	Various manufacturer catalogues	Various years	Various. e.g. Philips, SLI-Sylvania (Thorn), GE, Osram	Lumen and rated wattage values are published for each lamp type. These are used to produce efficiency data from stock and average wattage data.	High confidence in efficiency data. Lower confidence in exact product mix year on year.
2009-2030	All	ASLEC Survey, 2001	2001	Association of Street Lighting Electrical contractors	Survey results covered about one third of all street lighting installations in UK. Wattage of enhanced lamps is 12% lower than standard version.	High



Year	Lamp Type	Reference	Reference date	Author	Justification	Confidence in sources (High/Low)
2009-2030	HPS/ Metal Halide	Technical expert assumptions regarding Green Public Procurement	2009	MTP Technical Expert	% sales spread of standard and enhanced versions as set out in Green Procurement policy measure above.	Depends on final version of criteria

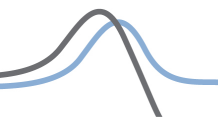
Note: Historic data sources are included in BNSTL02 – Reference Scenario

Table 12 Efficiency data sources (Traffic Lighting)

Year	Lamp Type	Reference	Reference date	Author	Justification	Confidence in sources (High/Low)
2009 - 2020	GLS	Various manufacturers catalogues	Various years	Various. e.g. Philips, SLI-Sylvania (Thorn), GE, Osram	Lumen and rated wattage values are published for each lamp type. These are used to produce efficiency data from stock and average wattage data.	High confidence in efficiency data.
2009-2020	GLS	ASLEC Survey, 2001 Proposed changes due to expected ErP Directional	2001	Association of Street Lighting Electrical contractors Original	Average wattage of traffic signal will reduce from 2014 when infrared lamps used.	Low – detail of ErP policy not yet known

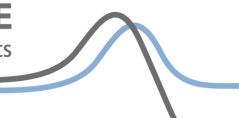
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Year	Lamp Type	Reference	Reference date	Author	Justification	Confidence in sources (High/Low)
		Lamp implementing measure above		figures adapted by ErP assumptions		
2009-2030	LED	Expert assumption and SSL DOE Roadmap projections of LED efficiency	2008	Navigant Consulting et al for USDOE	Efficiency assumption is best available estimate based on numerous experts in field. Equivalent wattage based on replacing current tungsten halogen lamps with LEDs	Low - this is a rapidly evolving technology and estimates of efficiency improvements change frequently

Note: Historic data sources are included in BNSTL02 – Reference Scenario



4.3 Methodology & key assumptions – efficiency

4.3.1 Future data

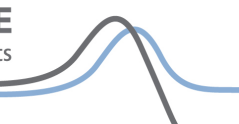
Table 13 Extrapolation & background calculations – efficiency

Year	Lamp Type	Methodology & assumptions
2009-2030	Low Pressure Sodium, High Pressure Sodium (standard), High Pressure Mercury	Efficiency of LPS, HP Mercury and old stock HPS 'standard' version assumed to be the same as that seen in Aslec survey 2001; 'plus' version of HPS is 12% lower wattage; 'Eco version' of LPS is 27% lower wattage; HPS lamps replacing HP mercury are 78% more efficient.
2009-2030	High Pressure Sodium	Expert judgment that same average wattage can be applied to new high-pressure sodium schemes replacing low pressure sodium is based on the fact that although HPS lamps are approximately 30% less efficient, the luminaires that use them can be much more optically efficient than LPS ones allowing no increase in wattage for 'standard' version. 'Plus' version is 12% lower wattage.
2009-2030	Metal Halide	Expert judgment regarding metal halide lamps replacing LPS: Average lumen output of LPS lamp is 5280 Lm. PD CEN/TR 13201-1:2004 allows approximately 33% reduction in lumen with white light or around 3500 Lm. 45W 'cosmo white' gives 4300 lumen and is lowest wattage 'white' light available so wattage of this lamp is used for 'ceramic' version; 'standard' version is assumed to be 12% higher wattage.
2009-2030	All lamp types; street lighting	% of HP Mercury lamp sales is 85% of reference sales in 2009 and 70% in 2010 onwards; sales percentages of other lamp types are the same as reference but percentage of enhanced compared to standard versions are increased as detailed above.
2009-2030	GLS and LED traffic lighting	Expert judgment that 70W halogen traffic signal can be replaced by 40W IR halogen version, or by 12W LED. LED wattage set to decrease to 7W in 2013 and 5W in 2030 as efficiency improves.
2009-2030	GLS and LED traffic lighting	It is assumed that LEDs comprise 10.5% of traffic lighting sales in 2009, increasing steadily to 100% by 2021.

4.4 Data issues – efficiency

Table 14 Data issues – efficiency

Issue/risk	Approach taken/rationale
Some lamps may have been higher efficacy versions (for example 'plus' type HPS) prior to green procurement policy, but the benefit has not been modelled	MTP has no information on the relative sales of standard and 'enhanced' versions of the lamps and has no evidence on which to base any split.
Evidence for the number of metal halide installations is small.	Growth of this new category is based on a very small survey of local authorities so there is low confidence in the data.
Impacts and timing of these policies are the best estimates by technical expert and are subject to change.	Best estimate of likely impacts used until more reliable information is available.



4.5 Confidence level – efficiency

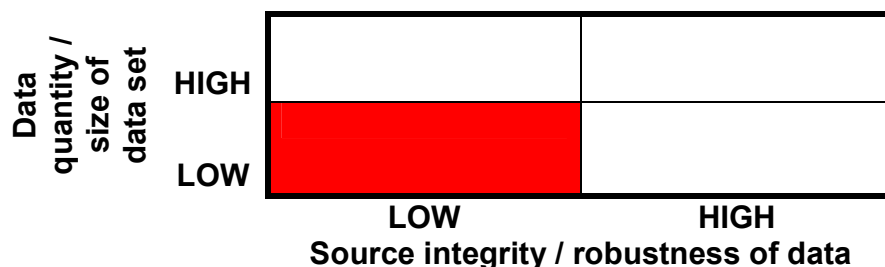


Figure 2 Confidence indicator for efficiency data

- Impacts based on MTP technical experts' opinion.

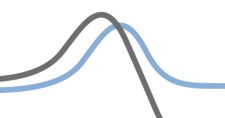
5 Cost

5.1 Summary

All costs given in summary tables below are in current prices (£2009), and are not discounted.

Policy 1: Energy Using Product (ErP) measure on Directional Lighting

	Original lamp	Replacement lamp	
Energy class / £ excluding VAT	Halogen reflector	IR halogen	Price Difference
2009	£1.62	£3.86	£2.24
2010	£1.62	£3.75	£2.13
2015	£1.62	£1.99	£0.37
2020	£1.62	£1.99	£0.37
2030	£1.62	£1.99	£0.37



Policy 2: ErP measure on Tertiary Lighting - Revision

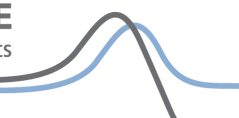
	Original lamp	Replacement lamp	
Energy class / £ excluding VAT	Low Pressure Sodium (LPS)	'Eco' LPS	Price Difference
2015	NA	NA	NA
2020	£26.75	£29.15	£2.40
2030	£26.75	£29.15	£2.40

Policy 3: Green Public Procurement Criteria

HP Sodium	Original lamp	Replacement lamp	
Energy class / £ excluding VAT	High pressure sodium (HPS)	HPS 'Plus'	Price Difference
2009	£8.91	£13.32	£4.41
2010	£8.91	£13.32	£4.41
2015	NA as impact is attributed to ErP Tertiary lighting measure	NA	NA

Policy 4: Voluntary Procurement Scheme

	Original lamp	Replacement lamp	
Energy class / £ excluding VAT	Low Pressure Sodium (LPS)	'Eco' LPS	Price Difference
2009	£26.75	£29.15	£2.40
2010	£26.75	£29.15	£2.40
2015	£26.75	£29.15	£2.40
2020	NA as impact is attributed to ErP Tertiary lighting measure	NA	NA



5.2 Data sources – cost

Table 15 Cost data sources

Year	Lamp Type	Reference	Reference date	Author	Justification	Confidence in sources (High/Low)
2009 - 2030		Cost data obtained online	March 2009	Commercial-lamps.com	Website had good availability of all lamps modelled in this sector	Low – only one supplier data used. Lamps will be procured by local authorities by a variety of different routes and they may pay different prices.

5.3 Methodology & key assumptions – cost

5.3.1 Future analysis

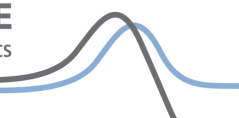
Table 16 Extrapolation & background calculations – cost

Year	Methodology & assumptions
2009-2030	Current price premiums have been used throughout for street lighting as none of the enhanced lamp types are new technologies. The halogen IR lamps for traffic signals are a new technology so an initial large price premium has been assumed. (S-shaped trend line used for halogen lamps with linear portion showing £0.50 year on year price reduction per lamp. Lower reductions assumed for first two years as the technology is new and is not yet 'required' by future legislation. Final price shows increase of about 20% over current technology as the manufacturing costs are higher. Final price differential for halogen replacements for GLS is much higher (+60%) as the lamp build is more complex. The lamps do last twice as long.)
2009-2030	Internet prices of lamps have been used as an indicator of maximum price premiums expected for local authorities procuring new lamps. Bulk purchases may allow authorities to purchase enhanced lamps at much lower price premiums.

5.4 Data issues – cost

Table 17 Data issues – cost

Issue/risk	Approach taken/rationale
Price premium of enhanced versions of street lamps may be exaggerated	The available internet prices are considered to be an indicator of the maximum price premium that could be expected for these policies. Good procurement



practice should be able to reduce this liability.

5.5 Confidence level – cost

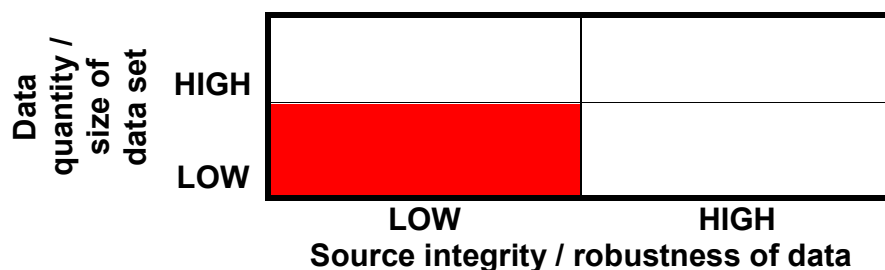


Figure 3 Confidence indicator for cost data

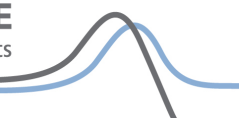
- Cost data is used as an indicator of maximum price premiums only. These lamps are procured as bulk purchases and lower price premiums should be possible.

6 Other issues

- Some historic lighting schemes may have been giving lighting levels significantly below those recommended in PD CEN/TR 13201-1:2004. Such schemes may require a higher average wattage than used previously but it has been assumed that such schemes will be balanced out by schemes in which efficiency savings can be made through better design.

Related MTP information

- Briefing Note BNCL12: Light-emitting Diodes - Innovation Briefing Note
- BNSTL01: Street & Traffic Lighting Government Standards Evidence Base 2009: Key Inputs
- BNSTL02: Street & Traffic Lighting Government Standards Evidence Base 2009: Reference Scenario
- BNSTL04: Street & Traffic Lighting Government Standards Evidence Base 2009: Best Available Technology Scenario
- BNSTL KO01: Street & Traffic Lighting Government Standards Evidence Base 2009: Key Outputs



Changes from Version 1.0

- Reformatting of data in Tables 1 and 2
- Update of Table 3 with new CBA factors
- Clarification of the term GLS referring to tungsten halogen lamps
- 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>