



# Local Transport Authority Toolkit for Low Carbon Bus

A guide to encourage and increase local government interest in developing low carbon bus strategies

# LowC<sup>VP</sup>

low carbon vehicle partnership  
[www.lowcvp.org.uk](http://www.lowcvp.org.uk)

## Who are LowCVP?

The Local Transport Authority (LTA) toolkit has been initiated by the Low Carbon Vehicle Partnership (LowCVP). This is an action and advisory group, established in 2003 to lead an accelerating shift to low carbon vehicles and fuels in the UK and to help ensure that UK business can benefit from that shift.

The LowCVP is a partnership of around 200 organisations from the automotive and fuel industries, UK government, the environmental sector, academia, road user groups and other organisations with a stake in the low carbon vehicles and fuels sector.

It has contributed to a very successful initial take up Low Carbon emission Buses (LCBs) by developing with the DfT a certification scheme that has formed the basis for two rounds of the Green Bus Fund (GBF) held in 2009 and 2010. This produced commitment by operators and local authorities to purchase 590 LCBs across the UK with c £47 million of Government support funding.

This LTA Toolkit is intended as a practical guide for transport managers today and as a continuing future reference that reviews the merits of low carbon buses for public service. The environmental and financial case for LCBs is growing as they demonstrate their operational reliability. Progressive restrictions to bus service operator grants (BSOG) and steadily increasing fuel costs are rapidly making them financially affordable while their environmental and passenger benefits are already well known.



The toolkit has been produced by the Low Carbon Vehicle Partnership, with support from **Transport & Travel Research Ltd** and **Strata Consultants**. The work included a series of interviews with LTA's and Bus Operating companies. The interviewees contributed significant amounts of time and experience to make this Toolkit possible. However, the views expressed (unless directly attributed to an Organisation) are the Authors own.

# Toolkit Purpose

The aim of this Toolkit is to guide, encourage and increase local government interest in developing low carbon bus strategies that support their own carbon and air quality goals. It explains how the latest bus regulations and powers affect green transport options and highlights the key opportunities where LTAs can play a vital role in encouraging low carbon bus usage in the UK.


## How it works ...

Parts 1 to 5 of the Toolkit covers the main opportunities for LCB introduction and each is presented as a 'stand alone' concise guide.

The Toolkit also provides significant additional supporting information relevant to each of the main opportunities.

The Toolkit has two identical forms, a website edition and a paper printed version. The former can be found on the LowCVP Low Carbon Emission Bus Microsite <http://www.lowcvp.org.uk/lceb/>

Periodically the website version will be updated to ensure it is current and new sections can be downloaded.

 More information is provided where you see the sign.

## Subsidised Service Procurement

The LTA can specify services operators do not run commercially, inviting them to bid competitively and run them to the standards set by the LTA.

## Voluntary Partnership Agreement

The LTA improves local highway and passenger infrastructure, to help commercial performance on the route, in exchange for a commitment to improve quality service from the operator(s).

## Quality Partnership Scheme

The LTA designs a scheme with minimum service standards that local bus operators must meet to use the enhanced facilities provided by the LTA/Highway Authority.

## Quality Contract Scheme

The LTA uses significant and wide-ranging powers to specify the bus services operating in an area, and sets up an 'off the road' competition to let one or more franchises to an operator or operators.

## Traffic Regulation Condition

Where local environmental conditions are poor the Traffic Commissioner has powers to place a Traffic Regulation Condition (TRC) on bus operator registrations to improve the situation.

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# Toolkit Contents

- **Subsidised Service Procurement**
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- Potential Opportunities
- Where it applies
- Available Vehicles
- Cost / benefit indicators
- Legislation
- Case Study
- Issues to consider when taking forward



## ➤ Supporting Information

- Typical opportunities and checklists for LCB deployment
- Local Transport Act 2008
- Low carbon bus definition and qualification
- The financial case for low carbon buses
- The policy case for low carbon buses
- Additional case studies

# 1) Subsidised Service Procurement

## Overview

Authorities may specify services that are not run commercially and will ask operators to bid competitively to operate these and deliver services such as:

- Enhancements to commercial services (in time or route coverage)
- Park & Ride
- Dial-a-Ride and other forms of demand-responsive services
- City centre distributor buses
- School services

Even if a commercial case exists for a Park & Ride service there may be opportunity, if the car park is on private land, for the LTA to specify the vehicles to be used and grant a licence to the operator providing the best value offer.

There could be a good policy fit between low-carbon options, city centre and Park & Ride services, particularly because the quietness and comfort of low carbon buses attracts passengers and there are air quality benefits in areas where this is poor.

**Typical Opportunities** 

**Deployment Type**

Technology Trial

**Objectives**

Test operations feasibility in public service

**Vehicle Numbers**

1 to 4 vehicles for part of a route or service

## Potential opportunities

In general, it is only on (non-commercial) subsidised services that the LTA has the full power to specify the bus service. An important element is the standard of vehicle operators should provide. In these circumstances the LTA is able to specify an LCB, and a number of authorities have done this, some using the Green Bus Fund (GBF) grant to procure the vehicles.

In some cases the operator is required to use a vehicle or fleet of vehicles provided by the LTA to run its contracted service. Where this is the case there is a need for a parallel bus leasing agreement linked to the contract for the service itself.

LCBs have these advantages in a subsidised service contract:

Achieving local policy objectives better, particularly those concerning improved air quality and lower carbon emissions.



Reduced running costs from lower fuel costs (on the assumption that maintenance costs will not be dissimilar to the diesel alternatives).



Improved patronage through selling 'green travel' and improved passenger comfort e.g. noise, smoothness, as part of the market appeal.



## Where it applies

There may be a good fit between subsidised services and LCB for city centre distributor buses where direct pollution levels from the vehicle are low or zero, for instance Durham Cathedral Loop Service or the planned Liverpool city centre shuttle service.

For Park & Ride services 'green travel' can be an important factor in the choice to use it, for instance, the Bath CIVITAS trial of diesel-hybrid technology that encourages a reduction in private car usage for some journeys.

Such services usually have modest fleet requirements, often with special branding and are overlaid on a mainly commercial core of services to fulfil a separate function and attract new passengers with little impact on the commercial network.

## Available vehicles

A certified Low Carbon Bus produces at least 30% fewer Greenhouse Gas Emissions than the average equivalent diesel bus of the same total passenger capacity. An LCB should normally be expected to produce lower air quality pollutants as well.

The LTA should work with the operator to ensure that vehicles meet both environmental quality service standards and commercial objectives, thereby minimising tender prices. The LTA will also want to consider whether it should own and lease the vehicles required or, if secured by the operator, whether some capital funding from the authority could assist the achievement of best value. A range of LCB sizes and configurations are available using a variety of technologies:

- Diesel electric hybrid
- Battery electric
- Biomethane / Bioethanol

## Cost/benefit indicators

For procurement of supported services the vehicle running cost has a bearing on the price the LTA pays an operator to provide the service.

Cost of LCB over diesel bus	Pump price (£/l)									
	£1.10	£1.20	£1.30	£1.40	£1.50	£1.60	£1.70	£1.80	£1.90	£2.00
	Indicative time to recover additional costs (years) – Single deck example									
£10,000	1.2	1.1	1.0	1.0	0.9	0.9	0.8	0.8	0.7	0.7
£20,000	2.4	2.2	2.1	1.9	1.8	1.7	1.6	1.6	1.5	1.4
£30,000	3.6	3.3	3.1	2.9	2.8	2.6	2.5	2.4	2.2	2.1
£40,000	4.7	4.4	4.1	3.9	3.7	3.5	3.3	3.1	3.0	2.9
£50,000	5.9	5.5	5.2	4.9	4.6	4.3	4.1	3.9	3.7	3.6
£60,000	7.1	6.6	6.2	5.8	5.5	5.2	4.9	4.7	4.5	4.3
£70,000	8.3	7.7	7.2	6.8	6.4	6.1	5.8	5.5	5.2	5.0
£80,000	9.5	8.8	8.3	7.8	7.3	7.0	6.6	6.3	6.0	5.7
£90,000	10.7	9.9	9.3	8.8	8.3	7.8	7.4	7.1	6.7	6.4
£100,000	11.8	11.0	10.3	9.7	9.2	8.7	8.2	7.9	7.5	7.2

*The fuel efficiency of a certified LCB will be 30% better than an equivalent **single deck** diesel bus. If, for example, additional capital costs total £80,000 and diesel price is £1.40 per litre (less BSOG and VAT) then an LCB might recover the additional costs in 7.8 years. Thereafter operators continue to benefit from lower fuel bills and these benefits could be factored into the support levels paid by the LTA.*

*See the **financial case for low carbon buses** section of the Toolkit Supporting Information for method used and assumptions used about the extra cost of LCB vs. standard buses.*

## Legislation

Local Transport Authorities (LTAs) have a duty under the Transport Act 2000 to meet the transport needs of their area (section 108). One option is to consider if the commercial bus service, planned and specified by local bus operators, fails to deliver in full against these needs and then plug the gaps. This can be achieved using the powers granted in section 89 of the Transport Act 1985. Guidance on tendering was last produced by DfT in 2005.



# Issues to consider for taking forward



An LTA using a subsidised service contract should consider:

Policy priorities of the service(s) concerned

Aim to ensure a long term commitment to the objectives of extending bus service coverage with environmental and sustainability goals.

Manage the shift to new technology

Aim to ensure a long term commitment by the operator and authority alike to resolve any teething troubles that may emerge with less proven technology.

The appropriate procurement arrangement for the LCBs

Consider who should obtain the vehicle, control the vehicle specification and manage the financial risks of procurement most effectively.

The management of cost risk

Determine a payment structure that reflects the operating cost, risks attached to the service, vehicle type, current and future fuel savings and changes to BSOG.

Knowledge and understanding of the commercial case for LCBs

Ensure a safe sharing of data and general intelligence about availability, reliability and costs in operation between the contractor and authority that inform and influence later decisions about the expansion of the LCB fleet.

For more information see **typical opportunities and checklists** section in the *Toolkit Supporting Information for an activity checklist relevant to developing an LCB supported service (Activity checklist for small scale trial)*.

# Case Study - Successful subsidised services for Durham County Council

Durham County Council applied to the Green Bus Fund for 3 battery-electric midi-buses and were successful, receiving £300,000 in grants towards the additional costs. The vehicles have been used in a re-tendering of the Cathedral Service city centre loop which links the train station with the Cathedral and with new extensions to other tourist attractions. The interest in battery-electric technology is linked with the region's manufacturing expertise that includes a Nissan car plant producing the Leaf electric car and Smith Industries electric commercial vehicles, both located near to Durham.



An innovative feature has been for the County to take on the risk of replacing electric battery packs, enabling a competitive price to be offered from the tenders for this supported service. The operator is responsible for operating the vehicles and normal maintenance on all other components.

# 2) Voluntary Partnership Agreements

## Overview

Since 1986 operators and LTAs have worked together to improve service quality. LTAs have sought to enhance it by improving the facilities available to bus operators in specific programmes (often a main radial route), providing stop improvements and traffic priorities for buses. This is in exchange for a commitment from the operator to improve its service quality. These have often included the age and condition of vehicles, improved customer service and sometimes improvements in bus frequency.

### Typical Opportunities

#### Deployment Type

On going  
Modest Deployment

#### Objectives

Demonstrate potential viability and/or tackle severe local problem

#### Vehicle Numbers

3 to 20 vehicles for a single service or route

## Potential opportunities

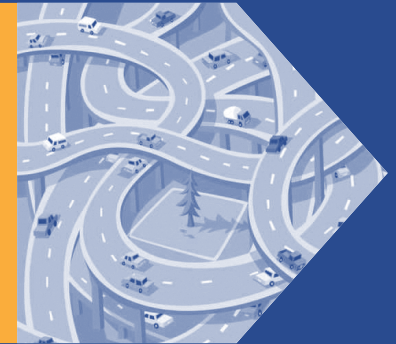
LTA's will want to consider carefully the way in which the offer of capital grant is framed so that it complies with competition rules. The LTA will probably need to set up a competition for any capital grant it proposes to make available. Proper consideration of an effective legal framework will protect the LTA's investment over the life of the buses and ensures local communities receive appropriate benefits.

The LTA can also ensure that adequate monitoring is in place to evaluate the investment both from the point of view of inputs (operating cost changes) and outputs (reduced pollution; lower carbon dioxide emissions; increased passenger satisfaction).

A useful reference source of current practice in setting up a voluntary partnership agreement (VPA) is provided by the joint CPT / pteg Bus Partnership Initiative.

## How can low-carbon buses be included in VPA?

The LTA could improve the road-side and highway facilities to help commercial performance on the routes where local bus operators agree to use LCBs.



The LTA could offer capital grants to encourage the use of LCBs in commercial operations.



Improving route infrastructure, LTAs provide opportunities to secure the financial, environmental, operational and improved comfort benefits to passengers and operators, while providing the local authority with air pollution and CO<sub>2</sub> emission gains.



## Where it applies

VPA's are likely to be most appropriate for encouraging LCB usage where:

- Bus operations are largely commercial and operators are prepared to take the technology-related risks on LCBs now that they are proving their reliability and achieving significant fuel savings.
- Local authorities are prepared to make capital grants available to bridge the commercial gap between conventional diesel and the LCB technology.
- Operators are prepared to commit to long-term quality operation on a particular service or sets of services.
- Where a fully commercial investment in LCBs is unachievable but there is scope for offering a grant that meets the requirements of EU State Aid regulations.

## Available vehicles

A certified Low Carbon Bus produces at least 30% fewer Greenhouse Gas Emissions than the average equivalent diesel bus of the same total passenger capacity. An LCB should normally be expected to produce lower air quality pollutants as well.

The suitability of vehicles will be determined by the operators requirements to make a commercial success of the route(s), therefore the LTA should work with the operator to ensure that vehicles meet both environmental quality standards and the commercial requirements. A range of vehicles of different sizes and configurations are available that meet LCB specification through a variety of technologies:

- Diesel electric hybrid
- Battery electric
- Biomethane / Bioethanol

## Cost/benefit indicators

In a VPA the operator will seek to reduce its operating costs as far as possible, while maintaining the quality levels agreed with the LTA.

Cost of LCB over diesel bus	Pump price (£/l)									
	£1.10	£1.20	£1.30	£1.40	£1.50	£1.60	£1.70	£1.80	£1.90	£2.00
	Indicative time to recover additional costs (years) – Double deck example									
£10,000	1.0	0.9	0.9	0.8	0.8	0.7	0.7	0.6	0.6	0.6
£20,000	2.0	1.9	1.7	1.6	1.5	1.4	1.4	1.3	1.2	1.2
£30,000	3.1	2.8	2.6	2.4	2.3	2.2	2.0	1.9	1.8	1.7
£40,000	4.1	3.8	3.5	3.3	3.1	2.9	2.7	2.6	2.4	2.3
£50,000	5.1	4.7	4.4	4.1	3.8	3.6	3.4	3.2	3.1	2.9
£60,000	6.1	5.6	5.2	4.9	4.6	4.3	4.1	3.9	3.7	3.5
£70,000	7.1	6.6	6.1	5.7	5.4	5.0	4.8	4.5	4.3	4.1
£80,000	8.2	7.5	7.0	6.5	6.1	5.8	5.4	5.1	4.9	4.7
£90,000	9.2	8.5	7.9	7.3	6.9	6.5	6.1	5.8	5.5	5.2
£100,000	10.2	9.4	8.7	8.2	7.6	7.2	6.8	6.4	6.1	5.8

For example, the fuel efficiency of a certified LCB will be 30% better than an equivalent **double deck** diesel bus. If the additional capital cost is £100,000 and diesel price is £1.50 per litre (less BSOG and VAT) then an LCB might recover the additional costs in 7.6 years. Thereafter operators continue to benefit from lower fuel bills and these savings could justify the initial higher capital investment in LCBs.

See the **financial case for low carbon buses** section of the Toolkit Supporting Information for method used and assumptions used about the extra cost of LCB vs. standard buses.

## Legislation

Section 46 of, and Schedule 2 to, the 2008 Act amended the Transport Act 2000 (“the 2000 Act”) to introduce new provisions about “voluntary partnership agreements” (VPAs) and other “qualifying agreements”. Amendments to the 2000 Act made by the 2008 Act introduce a statutory definition of a “voluntary partnership agreement” (VPA). In essence these allow an LTA to enter an agreement with the operator or operators about standard of service provided by the operator (including the vehicles used) and the facilities on the highway or at the roadside for bus services.

## Issues to consider for taking forward



VPAs are commonplace and used by LTAs in a wide variety of forms. Often they are informal, and rarely appear in a written form, although written agreements may be more suitable for VPAs that specify LCBs. Even rarer is an agreement that incorporates rewards, penalties or remedies, which are possible under the Act and may be appropriate.

Issues that an LTA should consider for a VPA incorporating LCBs:

### Competition for Capital Grants

The way in which the offer of capital grants is framed so that it complies with competition tests and State Aid regulations. The LTA may need to set up a competition for any capital grants it proposes to make available.

### Agreement / Legal Framework

An appropriate legally binding agreement to protect the LTA's investment over the life of the buses to ensure that local communities continue to receive appropriate benefit.

### Monitoring to Evaluate Investment

The LTA can ensure that adequate monitoring is in place to evaluate the investment both from the point of view of inputs (operating cost changes) and outputs (reduced pollution, lower carbon dioxide emissions, passenger satisfaction).

For more information see **typical opportunities and checklists** section in the Toolkit Supporting Information for an activity checklist relevant to developing an LCB VPA (Activity checklist for major route and corridor conversion).

# Case Study - Centro's involvement with West Midlands' operators

Centro's strategy approaching the Green Bus Fund bidding was to support local operators that entered bids, rather than to bid directly for funding. It offered successful operators top up grants to any successful bids. This enabled them to bid for lower grants from the Fund, improving their chances of success. In return, the authority sought binding commitments that DfT/Centro-funded vehicles would be used only on local routes. This is a good example of central/local government partnership in action.



National Express West Midlands (NXWM) and Mike de Courcy Travel were successful in gaining funding. A VPA is being put in place (alongside the grant funding agreement) to improve the corridor along which the WMT buses will run. WMT will convert the Birmingham – Harbourne services (numbers 22 and 23) which require a fleet of 18 buses, and keep the grant-funded vehicles on this route for at least five years. WMT will also contribute about £100,000 to a £1.3m scheme to improve passenger information systems, stops and shelters along the route and fund a marketing and publicity campaign to accompany the introduction of these new vehicles. The combination of actions should grow patronage and fully justify the major investment package jointly funded by WMT, Centro and DfT. It will help to demonstrate the authority's environmental agenda for passengers and the area it controls.

Mike de Courcy Travel will convert one of the Coventry Park & Ride services to battery electric operation producing zero emissions at point of use. This will require an extra vehicle in the fleet as batteries will need charging during the working day. A VPA for this route is being planned.



# 3) Quality Partnership Scheme

## Overview

Quality Partnership Schemes (QPS, often referred to as Statutory Quality Partnerships) were first introduced by the Transport Act 2000 and amended by the Local Transport Act 2008. They enable an LTA to design a Scheme, in consultation with local operators, that sets a quality threshold for services in an area, which is the minimum that will be accepted if operators use improved facilities in the area. They may include traffic priorities for buses and improved facilities for bus passengers at stops and/or interchanges. Service improvements can include the quality of vehicles used. In a QPS all partners are legally required to deliver their commitments.

### Typical Opportunities

#### Deployment Type

On going  
Modest Deployment

#### Objectives

Demonstrate potential viability and/or tackle severe local problem

#### Vehicle Numbers

3 to 20 vehicles for a single service or route

## Potential opportunities

A QPS could set high standards for buses to reduce pollution levels in return for facilities that improve travel times, increase punctuality and underpin reliability, making services more commercially attractive to travellers and operators.

A QPS may also be used to ensure that where the local operators already run LCBs on key routes within a proposed scheme area the current deployment is maintained throughout the scheme (i.e. lock-in the benefits).

It is suggested that the order of magnitude of improvement required to 'the facilities' is that which will give operators a saving on the peak vehicle requirement to deliver that service. In these circumstances, the fleet of buses using 'the facilities' is likely to be quite large, creating major costs for operators in upgrading the fleet to LCB operation. However this could be partly offset by increased customer satisfaction, reduced running costs, growth and income.

## How can low-carbon buses be included in QPS?

One way to achieve a more proportionate cost would be to specify only partial upgrading to LCB operation.

The LTA could improve facilities to support commercial performance in an area where local bus operators run some LCBs. The degree of LCB operation might be reviewed and raised during the life of the Scheme if positive commercial and environmental results were obtained.

The LTA could set maximum fares that raises additional passenger revenue to support the greater capital investment required for LCB operation. Fare capping plans later in the scheme could reflect operating benefits achieved from the fuel savings.

Careful design of the Scheme offers an LTA the opportunity to generate a financial case for LCB operation, releasing benefits for passengers, residents of and visitors to the area, and to the authority responsibility for improving air quality and CO<sub>2</sub> emissions.

A useful reference source of current practice in setting up a quality partnership scheme is provided by the **CPT and pteg Bus Partnership Initiative**.

## Where it applies

QPS are likely to be most appropriate for encouraging LCBs where:

- Bus operations are largely commercial and the local air quality and CO2 benefits of LCB operation are significant.
- Operators are prepared to take the technology-related risks on LCBs now that they are proving to be reliable and achieving significant fuel savings.
- LTA are prepared to make capital grants available to help the commercial case for LCB over conventional diesel technology.
- Operators are keen to build the market for bus travel through long-term quality operation on a set or network of services.

## Available vehicles

A certified Low Carbon Bus produces at least 30% fewer Greenhouse Gas Emissions than the average equivalent diesel bus of the same total passenger capacity. An LCB should normally be expected to produce lower air quality pollutants as well.

The suitability of vehicles will be determined by the operator's requirements to make a commercial success of the route(s). Therefore the LTA should work with the operator to ensure that vehicles meet both environmental, quality standards and the commercial requirements. A range of vehicles of different sizes and configurations are available that meet LCB specification through a variety of technologies:

- Diesel electric hybrid
- Battery electric
- Biomethane / Bioethanol

## Cost/benefit indicators

In a QPS the LTA may plan for fare-capping in later years if reduced running costs are achieved with LCBs.

Cost of LCB over diesel bus	Pump price (£/l)									
	£1.10	£1.20	£1.30	£1.40	£1.50	£1.60	£1.70	£1.80	£1.90	£2.00
	Indicative time to recover additional costs (years) – Single deck example									
£10,000	1.2	1.1	1.0	1.0	0.9	0.9	0.8	0.8	0.7	0.7
£20,000	2.4	2.2	2.1	1.9	1.8	1.7	1.6	1.6	1.5	1.4
£30,000	3.6	3.3	3.1	2.9	2.8	2.6	2.5	2.4	2.2	2.1
£40,000	4.7	4.4	4.1	3.9	3.7	3.5	3.3	3.1	3.0	2.9
£50,000	5.9	5.5	5.2	4.9	4.6	4.3	4.1	3.9	3.7	3.6
£60,000	7.1	6.6	6.2	5.8	5.5	5.2	4.9	4.7	4.5	4.3
£70,000	8.3	7.7	7.2	6.8	6.4	6.1	5.8	5.5	5.2	5.0
£80,000	9.5	8.8	8.3	7.8	7.3	7.0	6.6	6.3	6.0	5.7
£90,000	10.7	9.9	9.3	8.8	8.3	7.8	7.4	7.1	6.7	6.4
£100,000	11.8	11.0	10.3	9.7	9.2	8.7	8.2	7.9	7.5	7.2

*The fuel efficiency of a certified LCB will be 30% better than an equivalent **single deck** diesel bus. If the additional capital cost is £80,000 and a future diesel price is £1.50 per litre (less BSOG and VAT) then an LCB might recover the additional costs in 7.3 years. Thereafter operators continue to benefit from lower fuel bills that possibly justify a future fare cap.*

*See the **financial case for low carbon buses** section of the Toolkit Supporting Information for method used and assumptions used about the extra cost of LCB vs. standard buses.*

## Legislation

Section 13 of the Local Transport Act 2008 amends Section 114 of the Transport Act 2000 to extend the scope and range of local schemes. The standards of service that may be specified in a scheme include “requirements that the vehicles being used to provide the services must meet” and, as amended, specifically allows for standards to be raised during the life of the scheme. Whilst the Scheme is a matter of formal consultation with operators, and many LTAs will wish to proceed on an agreed partnership basis, the Scheme may proceed despite objections by relevant operators as long as these are not judged to be ‘admissible objections’ by the Traffic Commissioner.

## Issues to consider for taking forward



There are some important considerations that a LTA should take into account when designing a Quality Partnership Scheme:

### Views of the operators

The views of operators are of major significance, though not a deciding factor. This is a scheme not a partnership in the formal sense because the arrangements are determined by the LTA. The QPS could go ahead without the consent of all operators but commitment and agreement always improves the chances of success.

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### View of the Traffic Commissioner

Even if all the operators affected object to the scheme, it could still be allowed to go ahead. The local Traffic Commissioner is the ultimate arbiter as to its fairness.

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### Achieving a proportionate impact

The scheme must be proportionate in its impact. A very significant improvement in vehicle standards may be justified by a very significant improvement in the facilities offered by the LTA (together, where appropriate, with those provided by the highway authority).

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*In the context of the additional operator investment required to deliver LCBs, the LTA could be challenged to incorporate a significant enough improvement and attraction to the facilities that operators support it and join the scheme.*

# Case Study - QPS being applied across the Greater Bristol Bus Network (GBBN)

As part of the Major Scheme bid led by the West of England Partnership on behalf of the constituent authorities the major bus operator (First Bristol, Somerset and Avon) committed to a £20million investment in fleet renewals.

QPSs are being prepared for each of the major corridors being upgraded to 'Showcase' quality in the Network, the first having been applied on the Midsomer Norton to Bath corridor (incorporating maximum fare conditions). New buses have been purchased by Somerbus to operate on a new service along the Showcase corridor to CircleBath Hospital at Peasedown St John.

In the GBBN framework the choice and deployment of higher standard vehicles is for the Operator to determine, and the scheme does not require LCBs to be operated. However, the same principle could be applied to ensure a long-term commitment of LCBs to a corridor if the operators agreed the benefits of LTA commitments warranted additional investment from their side.



# 4) Quality Contract Scheme

## Overview

Quality Contract Schemes – (QCS, often referred to as Quality Contracts or Bus Franchising) were first introduced by the Transport Act 2000 and amended by the Local Transport Act 2008. They enable an LTA to take the role of setting bus services and fares and letting franchises in line with its policies in the way that TfL lets contracts.

Operators generally surrender the right to register the services they wish to operate based on commercial criteria. In order to affect this change, the LTA must demonstrate that a number of public interest criteria are met to justify the suspension of operators' rights.

### Typical Opportunities

#### Deployment Type

Full scale test

#### Objectives

Full test of commercial viability with a strong probability of influencing future business models

#### Vehicle Numbers

10 -100 area or depot conversion

## Potential opportunities

The LTA has total control over vehicle specifications under a QCS. Where the Scheme covers a complete network of services, the opportunity arises to make a significant contribution to environmental improvements (e.g. air quality, carbon and noise).

Long contracts of 5 years and upwards may justify investment in a new or largely new fleet of buses. The additional capital costs of LCBs may be justified by the lower fuel costs over the life of the Scheme, depending upon the view taken about future oil costs and BSOG benefits. Thus, in some scenarios, selecting an LCB may be a lower lifetime cost option than using conventional vehicles, as well as delivering significant environmental and passenger benefits.

LTAs considering this option would be well advised to include discussions with manufacturers early in their deliberations as a large-scale commitment to LCBs may warrant investment in local support and maintenance facilities.

## How can low-carbon buses be included in QCS?

The LTA will want to consider carefully how a QCS might be used to help deliver local air quality and environmental policies and may come to the view that LCB operation is an effective means by which it can achieve better local outcomes.

A full review of fleet policies will be required in a way that balances investment costs, operating costs, continuity of service as the Scheme starts, passenger benefits and fares.

The LTA should reflect on how LCB technologies and performances are developing and how best to manage risks associated with their operation.

Careful design of the Scheme offers LTAs the opportunity to generate a wide-ranging value for money case for LCB operation, realising benefits for passengers, local residents and visitors to the area, while improving air quality and reducing carbon emissions.



## Where it applies

QCSs are likely to be driven by a wide-ranging review of transport policy. Whilst bus emissions may not be the prime policy objective, a QCS creates a significant opportunity to accelerate the introduction of LCB operation.

Typically, a QCS may be the appropriate way to proceed where:

- The LTA considers that the deregulated nature of bus operations is not leading to growth in bus patronage and the general delivery of public transport policies as set out in its Local Transport Plan.
- LCB operation may be an effective way to specify franchised services where a strong value for money case can be made for inviting operators to bid for franchised services using LCBs.

## Available vehicles

A certified Low Carbon Bus produces at least 30% fewer Greenhouse Gas Emissions than the average equivalent diesel bus of the same total passenger capacity. An LCB should normally be expected to produce lower air quality pollutants as well.

The suitability of vehicles will be determined by the operators' requirements to make a commercial success of the route(s). Therefore the LTA should work with the operator to ensure that vehicles meet both environmental, quality standards, passenger needs and the commercial requirements.

A range of vehicles of different sizes and configurations are available that meet LCB specification through a variety of technologies:

- Diesel electric hybrid
- Battery electric
- Biomethane / Bioethanol

## Cost/benefit indicators

With rising fuel costs LTA may decide there is a strong value for money case for inviting operators to bid for franchised services (via a QCS) using LCBs.

Cost of LCB over diesel bus	Pump price (£/l)									
	£1.10	£1.20	£1.30	£1.40	£1.50	£1.60	£1.70	£1.80	£1.90	£2.00
	Indicative time to recover additional costs (years) – Double deck example									
£10,000	1.0	0.9	0.9	0.8	0.8	0.7	0.7	0.6	0.6	0.6
£20,000	2.0	1.9	1.7	1.6	1.5	1.4	1.4	1.3	1.2	1.2
£30,000	3.1	2.8	2.6	2.4	2.3	2.2	2.0	1.9	1.8	1.7
£40,000	4.1	3.8	3.5	3.3	3.1	2.9	2.7	2.6	2.4	2.3
£50,000	5.1	4.7	4.4	4.1	3.8	3.6	3.4	3.2	3.1	2.9
£60,000	6.1	5.6	5.2	4.9	4.6	4.3	4.1	3.9	3.7	3.5
£70,000	7.1	6.6	6.1	5.7	5.4	5.0	4.8	4.5	4.3	4.1
£80,000	8.2	7.5	7.0	6.5	6.1	5.8	5.4	5.1	4.9	4.7
£90,000	9.2	8.5	7.9	7.3	6.9	6.5	6.1	5.8	5.5	5.2
£100,000	10.2	9.4	8.7	8.2	7.6	7.2	6.8	6.4	6.1	5.8

*The fuel efficiency of a certified LCB will be 30% better than an equivalent **double deck** diesel bus. If the additional the capital cost is £100,000 and the future diesel price is £1.60 per litre (less BSOG and VAT) then an LCB might recover the additional cost in 7.2 years. Thereafter operators continue to benefit from lower fuel bills allowing the LTA to factor this into the contract price.*

*See the **financial case for low carbon buses** section of the Toolkit Supporting Information for method used and assumptions used about the extra cost of LCB vs. standard buses.*

## Legislation

Section 19 of the Local Transport Act 2008 amends Sections 124-127 of the Transport Act 2000 to vary the basis on which local quality contract schemes (QCS) are allowed.

There are detailed processes to be followed in the development and making of a QCS, including the involvement of an independent advisory panel, but it is for the LTA to determine whether the major changes involved are proportionate bearing in mind the benefits that it expects to be delivered.

Having made a Scheme, the LTA may vary any aspect of services and fares, including the specification of vehicles. A QCS lasts for 10 years, after which it may be extended. Bus contracts within the QCS can last for a period to be determined by the LTA.

# Issues to consider for taking forward



## Level of Ambition

QCSs are probably the most radical of the various regulatory measures available to an LTA. No LTA has yet committed itself to this path, despite the option having been created over a decade ago by the Transport Act 2000.

## Combining objectives

The reasons for pursuing a QCS will be primarily about the need to grow the market for bus travel in the area. Nonetheless, the opportunity to introduce low-pollution and low-carbon vehicles is a significant possibility and - particularly as LCB technology matures - an opportunity for an LTA to include this technology in its vehicle specification.

## Pace of innovation

The complete tendered nature of the local network makes it much easier to innovate with vehicle technologies and TfL has strongly demonstrated the opportunities, by testing and growing its LCB fleet in London and trialling hydrogen-cell vehicles for possible future exploitation.

For more information see **typical opportunities and checklists** section in the *Toolkit Supporting Information for an activity checklist relevant to developing an LCB supported service (Activity checklist for LCB Network / System / Route conversion)*.

# Case Study - London

While the regulatory environment is quite different from the remainder of the country the contractual nature of services is closest to the situation foreseen by Quality Contracts. Extensive experience has been gained by TfL of diesel-electric hybrid buses since they entered regular operation in 2006. Now, with a fleet totalling over 100 vehicles in a variety of sizes from all Manufacturers. TfL monitoring of vehicles shows they are now as reliable as their diesel counterparts and capable of significant fuel savings. Low carbon bus (diesel-electric and hydrogen) are seen as the way forward for improving the quality of passenger experience and improving the environment in London.

TfL conducted a passenger survey in 2009 on all hybrid buses in the trial (conducting 1,213 on-bus passenger interviews and 40 bus driver interviews).

The key findings have been that support for hybrid buses is very high:

- 96% of customers supported the introduction of hybrid buses with 81% strongly supporting their introduction.
- All bus drivers welcome the introduction of hybrid buses:
  - for environmental benefits.
  - for the smoother, quieter ride.

Driver's remark of the improved driving experience of the hybrids:

“Hybrid buses make it better for the customer. They can listen to their music or talk to their friends without having to shout over the noise of the engine. Plus, the engine being quiet makes it easier for us drivers to concentrate.” (Driver, Go-Ahead).



# 5) Traffic Regulation Condition

## Overview and legislation

Where local environmental conditions are poor the relevant Traffic Commissioner has powers to place a Traffic Regulation Condition (TRC) on bus operator registrations to alleviate the situation under the Transport Act 1985, as modified by the Environment Act 1995. The focus of these widened powers is on the reduction of air pollutants, rather than carbon, but LCBs address both issues.

### Typical Opportunities

#### Deployment Type

On going  
Modest Deployment

#### Objectives

Demonstrate potential viability and/or tackle severe local problem

#### Vehicle Numbers

3 to 20 vehicles for a single service or route

## Potential opportunities

The Traffic Commissioner decides whether and how to use these powers to limit pollution from local bus services. If the LTA can make a strong case the Traffic Commissioner might require high quality vehicles to reduce pollutant emissions.

As well as lowering carbon emissions, most LCBs have the advantage in a TRC of significantly reducing air pollutant emissions such as NO<sub>x</sub> and particulate matter.

Seeking a TRC can give LTAs a useful lever to encourage operators to substantially improve vehicle standards. These could include the LCB option.

A TRC can also be used to reduce frequency or duplication of services if this is a contributory factor to poor air quality. Intense competition between operators could lead to over-supply of services and reductions in overall vehicle standards. The removal of unnecessary vehicle mileages could support a case for investing in fewer, higher quality, cleaner and more desirable vehicles such as LCBs.

Care should always be taken to avoid operators choosing to withdraw service rather than considering cleaner bus replacements. Hence using a TRC, in appropriate circumstances, can raise discussions with operators on the merits of LCBs when exploring all the options available.

## Cost/benefit indicators

In a normal circumstances the operator will seek to reduce its operating costs as far as possible, while maintaining the quality levels required to maintain its market.

Cost of LCB over diesel bus	Pump price (£/l)									
	£1.10	£1.20	£1.30	£1.40	£1.50	£1.60	£1.70	£1.80	£1.90	£2.00
	Indicative time to recover additional costs (years) – Double deck example									
£10,000	1.0	0.9	0.9	0.8	0.8	0.7	0.7	0.6	0.6	0.6
£20,000	2.0	1.9	1.7	1.6	1.5	1.4	1.4	1.3	1.2	1.2
£30,000	3.1	2.8	2.6	2.4	2.3	2.2	2.0	1.9	1.8	1.7
£40,000	4.1	3.8	3.5	3.3	3.1	2.9	2.7	2.6	2.4	2.3
£50,000	5.1	4.7	4.4	4.1	3.8	3.6	3.4	3.2	3.1	2.9
£60,000	6.1	5.6	5.2	4.9	4.6	4.3	4.1	3.9	3.7	3.5
£70,000	7.1	6.6	6.1	5.7	5.4	5.0	4.8	4.5	4.3	4.1
£80,000	8.2	7.5	7.0	6.5	6.1	5.8	5.4	5.1	4.9	4.7
£90,000	9.2	8.5	7.9	7.3	6.9	6.5	6.1	5.8	5.5	5.2
£100,000	10.2	9.4	8.7	8.2	7.6	7.2	6.8	6.4	6.1	5.8

*The fuel efficiency of a certified LCB will be 30% better than an equivalent **double deck** diesel bus. If the additional capital cost is £100,000 and diesel price is £1.50 per litre (less BSOG and VAT) then an LCB might recover the additional costs in 7.6 years. Thereafter operators continue to benefit from lower fuel bills and these savings could justify the initial higher capital investment in LCBs.*

*See the **financial case for low carbon buses** section of the Toolkit Supporting Information for method used and assumptions used about the extra cost of LCB vs. standard buses.*

## Issues to consider for taking forward



### Proportionality:

The Commissioner would want to be assured that the action being proposed is proportionate and addresses environmental issues, particularly air quality.

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### Independence of the Traffic Commissioner:

The Commissioner is open to propose solutions that he feels meet the bus passengers needs first and then is reasonable to all other parties. LTA proposals must strongly relate to this as the solution to be implemented rests finally with the Traffic commissioner.

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### Benefits of early dialogue:

Traffic Commissioners usually make themselves available for early discussion. This facility for dialogue should be used by LTAs to develop a case that is likely to match the thinking and needs of the Commissioners office while still achieving the LTA's goals.

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For more information see **typical opportunities and checklists** section in the *Toolkit Supporting Information for an activity checklist relevant to developing an LCB TRC*.

## Case Study - City of Bath Tour Bus

In the City of Bath a TRC was invoked to ensure only tour bus operators with lower emission vehicles were allowed to operate in the city centre, and their numbers reduced, in an effort to solve local environmental problems.

### TRC as a means to encourage operator action



The potential to impose a TRC has been used as a method to encourage bus operators to discuss the options for introducing low emission vehicles and agree a timetable of far-reaching improvements (viz the Oxford Low Emission Zone initiative).









# Supporting Information

## Overview

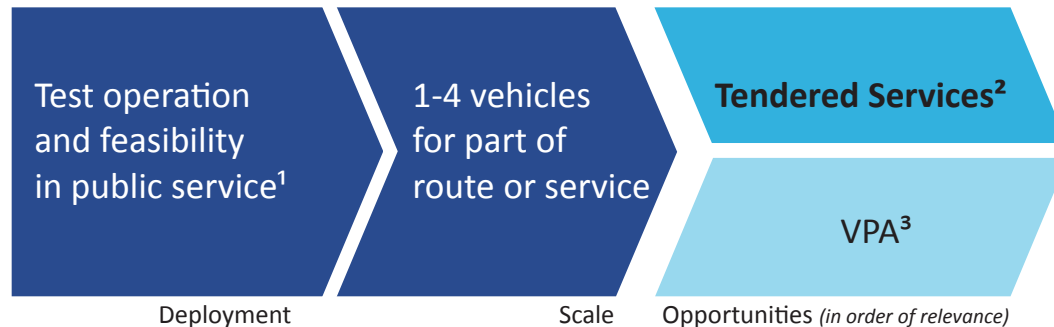
This section of the Toolkit provides supporting information to aid LTA decision making and onward referral to more detailed guidance and documents relevant to bus operations, including those with LCBs.

## Contents

	Page	
Typical opportunities and checklists for LCB deployment	S.2	
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Low carbon bus definition and qualification	S.9	
The financial case for low carbon buses	S.10	
The policy case for low carbon buses	S.14	
Additional case studies	S.18	

# Typical opportunities and checklists for LCB deployment

## Technology Trial



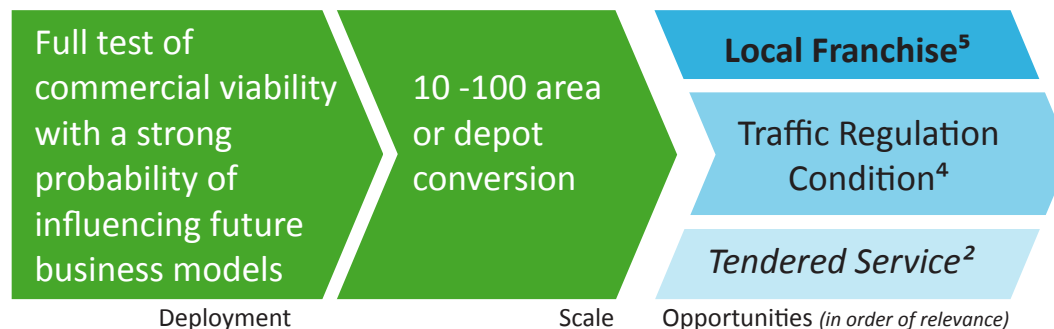
1. Manufacturers are likely to be key players in the Partnership. The LTA may be a relatively minor participant. More loosely defined arrangements may be appropriate to enable different operating options to be tested, with variable commitment regarding key factors, such as duration, to protect service quality and costs.

## On Going (Modest) Deployment



2. Assumes that an appropriate package of all day/week services can be identified to suit the desired scale of local deployment. Fewer opportunities may exist for large scale deployments but could be suitable for LCB application when they arise.

## Full Scale Test



3. Suitable for wide range of applications, but significant competition issues may need to be considered to achieve a non-market distorting approach. These may leave LTAs with less ability to influence an operator-led scheme.

4. Need to demonstrate a technology-based cost-effective solution for locality.

5. 'Local franchise' in this context relates to major non-commercial elements of the network, such as dial-a-ride/demand-responsive services, school networks or city centre distribution services.

## Small-scale LCB trials – activity checklist

Key steps	Questions to bear in mind
1. Identify key policy objectives	Why are we doing this? What are we seeking to achieve? Where is the 'policy fit'?
2. Seek opportunities for research/pump-priming funding.	What wider interest is there in this technology? What will a trial here add to the sum of human or significant environmental knowledge?
3. Identify what partnerships could add to this emerging project.	What other local agencies (such as health or environmental), EU-wide research project partners (if EU funding is being sought), operators, manufacturers or other suppliers, research interests may add new and valuable dimensions to the project?
4. Scope and size the project. Determine length of commitment to the initial service.	What size of trial will be effective? Is there value in two or more LCB technologies, variants or manufacturers being involved to yield comparative data?
5. Identify a suitable service performing an appropriate role	Where and when is this concept/technology best tested? Where is it likely to maximise its potential?
6. Tailor funding applications to the appropriate audience	Who is trying to achieve what here? What are the central goals? How can the project best be 'sold' to funding organisations with a wide range of differing objectives?
7. Monitoring & evaluation framework. Determine range of exit strategies	What are we trying to understand and measure? Who needs to collect what data to establish the value of outputs and outcomes resulting and their implications?
8. Refine the project specification and seek full commitment to the project from all funding partners, including those with 'in kind' contributions	Refine early work to be absolutely clear of what needs to happen, who is/are responsible for making them happen? How are the project risks allocated between participants?
9. Develop a sound implementation plan	What needs to happen? How will partners need to work together to maximise the value of each others' contribution? Agreement on the timing of tasks. What contingency plans are required?
10. Launch and test	What is needed to launch the project? To what extent is initial publicity important? How will the project be monitored; operational problems be addressed; plans for solving them?
11. Close down project, report on results and organise dissemination.	Who needs to know what and when? How successful was the project against its benchmark? LCB reliability; economy; global and air quality performance; passenger and driver reactions; etc. Who should know the project results, through what channels and at what stage(s)?

## Major LCB route / corridor conversion – activity checklist

Key steps	Questions to bear in mind
1. Identify key policy objectives	Why are we doing this? What are we seeking to achieve? Where is this project taking us? Are we sufficiently close to fully commercial take-up operation to justify a large-scale non-commercial implementation? How can we build LCB usage in the specification?
2. How can operators best be encouraged to take a leading/owning role?	What is the state of the commercial case? What is the funding gap? How significant are the risks and what are they? How can existing experience best be captured and built upon?
3. Are there other parties that should be involved?	Do manufacturers, other suppliers or external interested parties have a significant role to play? What is the likely interest of Central Government and national agencies? What research interests can be fruitfully exploited?
4. Develop a common understanding with a single operator or, if public funding is to be injected, ensure all local operators are adequately engaged. In consultation, determine the project leader role.	What are the 'state aid' implications of what is being planned? How is ongoing consultation and engagement best handled? What is the level of operator enthusiasm? Who should take the lead role, an operator, the LTA or an involved third party?
5. Assuming funding is involved, design a suitable competition.	How is funding to be injected – revenue or capital or both – and at what stages? What are the criteria by which a competition is going to be judged and what are the weightings placed on different criteria?
6. Identify what the LTA is seeking to learn from the deployment and how this is best achieved.	How is learning to take place? How are commercially sensitive issues to be handled? Is an independent intermediary required to monitor key outputs and outcomes?
7. Assemble service specifications and draft agreements.	What is required of whom to ensure successful delivery and maximise value for public investment? How is non-compliant bidding best handled?
8. Run competition and judge results	How is best value secured? Are non-compliant bids worthy of detailed consideration?
9. Launch service	What is needed to launch the project? To what extent is initial publicity important and could this aid LCB utilisation? How will progress in service be monitored and operational problems addressed and managed?
10. Evaluate according to the project specification and build on learning	Who needs to know what and when? LCB reliability; economy; global and air quality performance; passenger and driver reactions; etc.

# LCB Network / System/Route conversion (including Quality Contracts) – activity checklist

Key steps	Questions to bear in mind
1. Role played by low carbon technologies in service transformation.	Where does low-carbon usage fit in the broader policy framework for service development/transformation?
2. Identify main costs and risks.	What is the justification for a low-carbon transformation? What are the potential (mainly capital) costs and (mainly revenue) savings and what are appropriate ranges of cost involved? What are key risks and how are these best managed? Can/should some party other than LTA or operator be sought to carry some of these risks? If so, whom and how?
3. Consider appropriate timing.	What is known now and what is likely to be known at or around the time of key decision points about the performance of the technology being planned? Who will have the fullest insights and how can these insights be made available to all potential players?
4. Estimate funding implications and consider costs and benefits in terms of the local and national policy frameworks.	Who gains, what do they gain and at what cost? Does a low-carbon option pass commercial or value for money tests now? If so demonstrate how. If not, could it do so later?
5. Assess overall project risk created by the low-carbon option.	What is the risk to the LTA? Can it be mitigated or scaled? What is the ‘best’ low-carbon option to compare with a conventional option? LCB reliability; economy; carbon, air pollution; passenger and driver reactions; etc.
6. Determine the preferred technology, bearing in mind the opportunities for future innovation.	What are the life-time costs? What are the life-time environmental costs (e.g. Clean Vehicles Directive)? What level of support is there from the manufacturer or what training in maintenance and support is required for different technologies?

*[Proceed from step 5 for major route/corridor conversion for implementation]*

# Local Transport Act 2008

## Overview

There are many opportunities for Local Transport Authority to be involved in low carbon public transport operations, through powers amended by the Local Transport Act 2008 (the Act):

- **Subsidised service procurement, includes:**
  - dial-a-ride and other demand responsive services
  - park & ride services
  - city centre distributor buses
  - school services
- **Voluntary partnership agreements (VPA)**
- **Quality Partnership Scheme (QPS)**
- **Quality Contract Scheme (QCS)**

## Headlines

### Subsidised Service Procurement

The Act makes some changes to the existing legislation about tendering for subsidised services. Tendered subsidy contracts now have a maximum duration of eight years (up from five years). The legislation is now clearer that subsidy may be paid to secure improvements in the standard of existing services (*as well as to secure the provision of services that would not otherwise be provided*).

### Voluntary partnership agreements (VPA)

There are currently hundreds of voluntary partnership agreements working effectively across the country, where local authorities and bus operators have agreed to work together to improve bus services. Where the right conditions are in place to enable partnerships to work effectively, real improvements can be delivered and patronage increased. However, there are too many cases where partnerships do not work as well as they might.

The perceived impact of competition law - when a local authority wishes to enter into partnership discussions with more than one operator - was one of the reasons given for voluntary partnership agreements not being used as effectively as they might. This has been addressed in the LTA 2008. These new arrangements also apply to agreements between bus operators (called “qualifying agreements” in the legislation), where they are endorsed and certified by the local authority.

It is important to note that effective voluntary partnership between local authorities and bus operators often depends on strong political leadership to implement changes such as bus priority measures, tougher parking policies, or to identify resources for new facilities like real-time information displays. It also depends on a clear commitment by commercial operators to invest in measures like new vehicles, increased service frequencies and other improvements, as part of the partnership.

## Quality Partnership Scheme (QPS)

In some respects, a QPS is similar to a voluntary partnership agreement. It involves the council providing “facilities” while operators wishing to use those facilities must provide services to a particular “standard” specified in the scheme. A QPS is a statutory scheme, and the Traffic Commissioners have powers to impose sanctions on operators who use the facilities without meeting the standard.

As a result of the Act, QPSs are now able to include requirements about service frequencies, timings or maximum fares as part of the specified “standard of service”. Prior to LTA 2008 these things were excluded from the scope of the schemes. QPSs can help local authorities to ensure that, where they are providing new facilities that help operators, passengers too get a fair share of the resulting benefits through improved standards of service.

## Quality Contract Scheme (QCS)

A QCS involves replacing the existing deregulated market with a system of contracts – e.g. London. Under a QCS, the LTA specifies the bus services to be provided in the scheme, and invites tenders from operators to provide them under contract.

The Act makes QCSs a more realistic option for LTAs by removing the old requirement for them to show that a QCS was the “only practicable way” to deliver its objectives. Instead, five “public interest” criteria are set out in its place. The Act also removes need for approval by the Secretary of State for schemes in England. Schemes will instead need submitting to an independent board for consideration, but the final decision to make a QCS in England will rest squarely with the local authority.

The legitimate interests of bus operators will be safeguarded by the five public interest criteria, the independent scrutiny provided by the QCS boards, and the right to appeal to a tribunal.

The table below summarises the powers that are available for LTAs to introduce LCBs or protect current deployment of these vehicles. It is a quick guide to the appropriate legislation, the changes to local public transport powers under the Local Transport Act (2008) and their application to date.

For further information please consult:	
	DfT <a href="#">Local Transport Act (2008), overview of Bills legislative process and outcomes</a> webpage, including and relevant extracts from previous legislation (2000 Act, 1985 Act etc)
	DfT <a href="#">LTA 2008 overview document</a> <sup>1</sup>
	DfT <a href="#">Guidance on voluntary partnership agreements</a>
	DfT <a href="#">Guidance about quality partnership schemes</a>
	DfT <a href="#">Quality Contracts Schemes: Statutory Guidance</a>
	<a href="#">CPT/pteg bus partnership initiative</a>

<sup>1</sup> The Local Transport Act 2008: Creating the right public transport system for your area.

## Summary of Powers Available to LTAs

Instrument	Use of powers before 2008 Act	Scale of change introduced by 2008 Act	Application of powers in recent years	
			Nationally	Typical LTA
<b>Subsidised Service Procurement</b>	Commonplace, typical LTA activity	Very modest	Commonplace	Probably used by every LTA.
<b>Voluntary Partnership Arrangements</b>	Very common, but mainly informal.	Modest, but with significant underlying competition tests now applied.	Common, though still rarely formalised in a written agreement incorporating rewards, penalties and/or remedies.	Used by many LTAs in a wide variety of forms, but typically without formal agreements.
<b>Traffic Regulation Conditions</b>	Relatively little used by Commissioners, with infrequent pressure from LTA to propose them.	None	Relatively rare	A few authorities do <sup>2</sup> have the relevant experience.
<b>Quality Partnership Schemes</b>	A small number of schemes in place.	Significant widening of local authority powers, complex determination procedure.	A few further schemes made, though with little use of new powers facilitated by 2008 legislation.	A few authorities <sup>3</sup> have the relevant experience.
<b>Quality Contract Schemes</b>	None	Significant changes to the process of approval. Little to the end product.	None. No scheme has yet entered formal consultation phase.	A small number of authorities to date have considered in any detail using these powers.

<sup>2</sup> Suggest that LTA considering this approach make contact with B&NES, Oxfordshire County Council.

<sup>3</sup> Suggest that LTA considering this approach make contact with South Yorkshire or Greater Manchester PTEs, Nottingham City Council or B&NES/West of England partnership.



# Low carbon definition and qualification

The definition of an LCB was developed by the LowCVP members and is based upon the Green House Gas [GHG] emissions from the vehicle and from the fuel production. The full definition of a LCB is as follows:


*“A Low Carbon Bus produces at least 30% fewer Greenhouse Gas Emissions than the average Euro 3 equivalent diesel bus of the same total passenger capacity. The Greenhouse Gas (GHG) emissions will be expressed in grams of carbon dioxide equivalent measured over a standard test, and will cover “Well-to-Wheel” (WTW) performance, thereby taking into account both the production of the fuel and its consumption on board”.*

All currently certified LCBs achieve their lower emissions through lower fuel consumption. An LCB should normally be expected to produce lower air quality pollutants as well.

To qualify as an LCB the bus must achieve the LCB GHG target against a real life bus drive cycle such as the MLTB Route 159 test cycle developed with Millbrook by Transport for London (TfL), or a recognised equivalent test. Manufacturers will possess appropriate certification for all qualifying buses.

Although a low carbon bus may use any technology or fuel, a vehicle cannot qualify as an LCB solely by substituting one fuel type for another to achieve a 30% reduction in its GHGs, except biomethane and bioethanol, but only when documentation can prove that these vehicles qualify for and receive the BSOG supplement for low carbon buses.

## For further information please consult:

-  [LowCVP Market monitoring on roll-out of low carbon bus fleets](#)
-  [LowCVP Definition of a LCB](#)
-  [LowCVP LCB accredited and available in the UK](#)
-  [DfT BSOG payments for LCB vehicle manufacturers](#)
-  [bus operators](#)

# The financial case for low carbon buses

Significant benefits stem from reduced energy consumption, characteristic of LCBs. In financial terms a fuel-efficient vehicle will shield the operator from a proportion of rising fuel prices. The higher the fuel cost (per litre) the faster an operator of an LCB will recover any additional (upfront) capital investment in the vehicle.

The following illustrative analysis looks at the indicative speed of payback an operator of an LCB might achieve under different combinations of

1. additional capital cost for an LCB and
2. fuel price.

The assumptions made in this simplified analysis are as follows:

- Service: 45,000 miles per annum (72,405 km).
- Fuel consumption: 8 mpg for a conventional single deck bus, 6 mpg for double deck bus and 30% better fuel efficiency for the equivalent LCB.
- LCB maintenance costs are assumed to be similar to a standard diesel bus until sufficient operational data exists on the latest hybrid technology.

- Fuel costs are displayed in the tables and charts at regular bulk/forecourt price, with all duty paid. However, a large proportion of fuel duty is recovered by bus operators through BSOG and reclaiming VAT, and it is this 'discounted' price of fuel which is actually used in these calculations.
- BSOG: the anticipated 20% reduction from 2012/13 is taken into account, as is the 6p per km extra BSOG grant for LCBs.
- Since BSOG is frozen in 2011/12 and then reduced by 20% in 2012/13 (to £0.346 per litre net) operators will have to bear the full additional cost of any future fuel price increases after 2011.

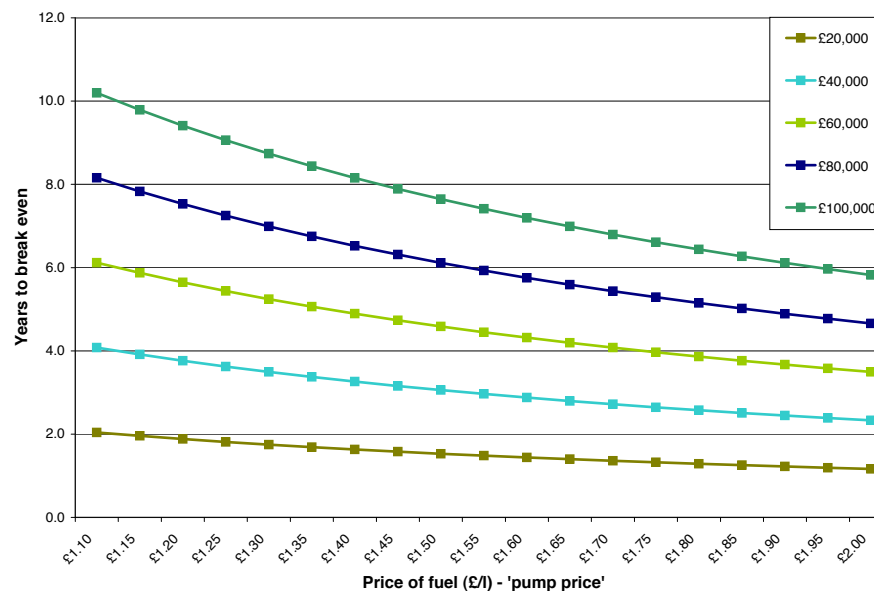
The full tables of data for single and double deck buses are presented here. Both the tables and charts present the same data, in a different format, indicating the time required to recover additional costs for LCBs over equivalent diesel buses. Various levels of additional capital cost are presented along with different pump fuel prices.

Summary tables derived from these data are included in each section - Part 1 to 5 of the Toolkit, under the key opportunities.

## Double-deck bus (6mpg) - Years to recover additional LCB cost over diesel equivalent

Price of fuel - 'pump price' (£/l)																				
Additional cost of LCB over diesel equivalent	£1.10	£1.15	£1.20	£1.25	£1.30	£1.35	£1.40	£1.45	£1.50	£1.55	£1.60	£1.65	£1.70	£1.75	£1.80	£1.85	£1.90	£1.95	£2.00	
	Time to recover additional costs (years)																			
£10,000	1.0	1.9	0.9	0.9	0.9	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.6	0.6	0.6	0.6	0.6	0.6
£20,000	2.0	2.0	1.9	1.8	1.7	1.7	1.6	1.6	1.5	1.5	1.4	1.4	1.4	1.3	1.3	1.3	1.2	1.2	1.2	1.2
£30,000	3.1	2.9	2.8	2.7	2.6	2.5	2.4	2.4	2.3	2.2	2.2	2.1	2.0	2.0	1.9	1.9	1.8	1.8	1.8	1.7
£40,000	4.1	3.9	3.8	3.6	3.5	3.4	3.3	3.2	3.1	3.0	2.9	2.8	2.7	2.6	2.6	2.5	2.4	2.4	2.4	2.3
£50,000	5.1	4.9	4.7	4.5	4.4	4.2	4.1	3.9	3.8	3.7	3.6	3.5	3.4	3.3	3.2	3.1	3.1	3.0	3.0	2.9
£60,000	6.1	5.9	5.6	5.4	5.2	5.1	4.9	4.7	4.6	4.4	4.3	4.2	4.1	4.0	3.9	3.8	3.7	3.6	3.6	3.5
£70,000	7.1	6.9	6.6	6.3	6.1	5.9	5.7	5.5	5.4	5.2	5.0	4.9	4.8	4.6	4.5	4.4	4.3	4.2	4.2	4.1
£80,000	8.2	7.8	7.5	7.2	7.0	6.7	6.5	6.3	6.1	5.9	5.8	5.6	5.4	5.3	5.1	5.0	4.9	4.8	4.8	4.7
£90,000	9.2	8.8	8.5	8.2	7.9	7.6	7.3	7.1	6.9	6.7	6.5	6.3	6.1	5.9	5.8	5.6	5.5	5.4	5.4	5.2
£100,000	10.2	9.8	9.4	9.1	8.7	8.4	8.2	7.9	7.6	7.4	7.2	7.0	6.8	6.6	6.4	6.3	6.1	6.0	6.0	5.8

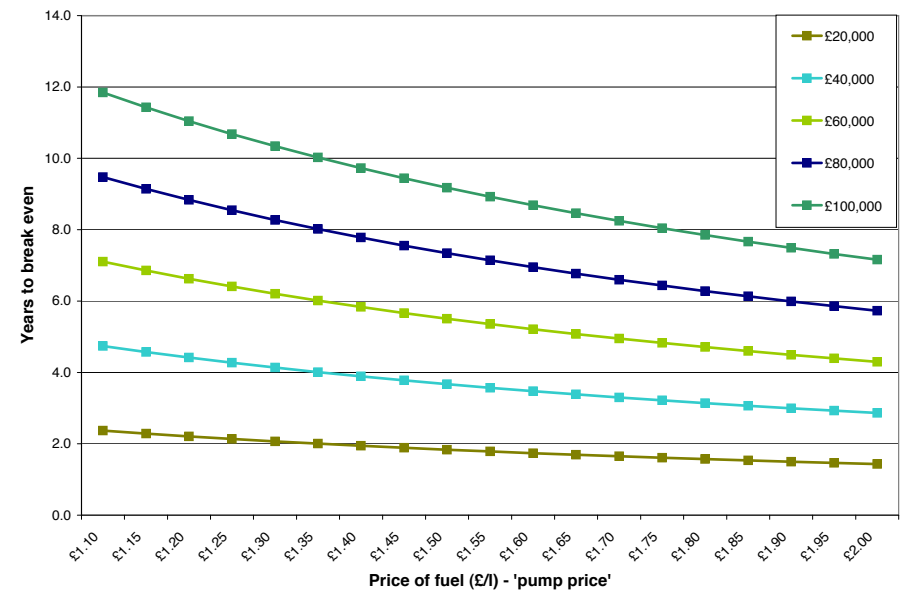
Double deck bus - impact of increasing fuel costs on recovery time for additional costs



# Single-deck bus (8mpg) - years to recover additional LCB cost over diesel equivalent

Price of fuel - 'pump price' (£/l)																			
Additional cost of LCB over diesel equivalent	£1.10	£1.15	£1.20	£1.25	£1.30	£1.35	£1.40	£1.45	£1.50	£1.55	£1.60	£1.65	£1.70	£1.75	£1.80	£1.85	£1.90	£1.95	£2.00
	Time to recover additional costs (years)																		
£10,000	1.2	1.1	1.1	1.1	1.0	1.0	1.0	0.9	0.9	0.9	0.9	0.8	0.8	0.8	0.8	0.8	0.7	0.7	0.7
£20,000	2.4	2.3	2.2	2.1	2.1	2.0	1.9	1.9	1.8	1.8	1.7	1.7	1.6	1.6	1.6	1.5	1.5	1.5	1.4
£30,000	3.6	3.4	3.3	3.2	3.1	3.0	2.9	2.8	2.8	2.7	2.6	2.5	2.5	2.4	2.4	2.3	2.2	2.2	2.1
£40,000	4.7	4.6	4.4	4.3	4.1	4.0	3.9	3.8	3.7	3.6	3.5	3.4	3.3	3.2	3.1	3.1	3.0	2.9	2.9
£50,000	5.9	5.7	5.5	5.3	5.2	5.0	4.9	4.7	4.6	4.5	4.3	4.2	4.1	4.0	3.9	3.8	3.7	3.7	3.6
£60,000	7.1	6.9	6.6	6.4	6.2	6.0	5.8	5.7	5.5	5.4	5.2	5.1	4.9	4.8	4.7	4.6	4.5	4.4	4.3
£70,000	8.3	8.0	7.7	7.5	7.2	7.0	6.8	6.6	6.4	6.2	6.1	5.9	5.8	5.6	5.5	5.4	5.2	5.1	5.0
£80,000	9.5	9.1	8.8	8.5	8.3	8.0	7.8	7.6	7.3	7.1	7.0	6.8	6.6	6.4	6.3	6.1	6.0	5.9	5.7
£90,000	10.7	10.3	9.9	9.6	9.3	9.0	8.8	8.5	8.3	8.0	7.8	7.6	7.4	7.2	7.1	6.9	6.7	6.6	6.4
£100,000	11.8	11.4	11.0	10.7	10.3	10.0	9.7	9.4	9.2	8.9	8.7	8.5	8.2	8.0	7.9	7.7	7.5	7.3	7.2

## Single deck bus - Impact of increasing fuel costs on recovery time for additional costs



Cost estimates have also been produced assuming a lower bus mileage of 30,000 miles p.a. for comparison, rather than 45,000 miles p.a. used in the earlier examples.

### Double-deck bus (6mpg) - Years to recover additional LCB cost over diesel equivalent (lower mileage)

Price of fuel - 'pump price' (£/l)																			
Additional cost of LCB over diesel equivalent	£1.10	£1.15	£1.20	£1.25	£1.30	£1.35	£1.40	£1.45	£1.50	£1.55	£1.60	£1.65	£1.70	£1.75	£1.80	£1.85	£1.90	£1.95	£2.00
	Time to recover additional costs (years)																		
£10,000	1.5	1.5	1.4	1.4	1.3	1.3	1.2	1.2	1.1	1.1	1.1	1.0	1.0	1.0	1.0	0.9	0.9	0.9	0.9
£20,000	3.1	2.9	2.8	2.7	2.6	2.5	2.4	2.4	2.3	2.2	2.2	2.1	2.0	2.0	1.9	1.9	1.8	1.8	1.7
£30,000	4.6	4.4	4.2	4.1	3.9	3.8	3.7	3.6	3.4	3.3	3.2	3.1	3.1	3.0	2.9	2.8	2.8	2.7	2.6
£40,000	6.1	5.9	5.6	5.4	5.2	5.1	4.9	4.7	4.6	4.4	4.3	4.2	4.1	4.0	3.9	3.8	3.7	3.6	3.5
£50,000	7.6	7.3	7.1	6.8	6.6	6.3	6.1	5.9	5.7	5.6	5.4	5.2	5.1	5.0	4.8	4.7	4.6	4.5	4.4
£60,000	9.2	8.8	8.5	8.2	7.9	7.6	7.3	7.1	6.9	6.7	6.5	6.3	6.1	5.9	5.8	5.6	5.5	5.4	5.2
£70,000	10.7	10.3	9.9	9.5	9.2	8.9	8.6	8.3	8.0	7.8	7.6	7.3	7.1	6.9	6.8	6.6	6.4	6.3	6.1
£80,000	12.2	11.7	11.3	10.9	10.5	10.1	9.8	9.5	9.2	8.9	8.6	8.4	8.2	7.9	7.7	7.5	7.3	7.2	7.0
£90,000	13.8	13.2	12.7	12.2	11.8	11.4	11.0	10.7	10.3	10.0	9.7	9.4	9.2	8.9	8.7	8.5	8.3	8.1	7.9
£100,000	15.3	14.7	14.1	13.6	13.1	12.7	12.2	11.8	11.5	11.1	10.8	10.5	10.2	9.9	9.7	9.4	9.2	8.9	8.7

### Single-deck bus (8mpg) - Years to recover additional LCB cost over diesel equivalent (lower mileage)

Price of fuel - 'pump price' (£/l)																			
Additional cost of LCB over diesel equivalent	£1.10	£1.15	£1.20	£1.25	£1.30	£1.35	£1.40	£1.45	£1.50	£1.55	£1.60	£1.65	£1.70	£1.75	£1.80	£1.85	£1.90	£1.95	£2.00
	Time to recover additional costs (years)																		
£10,000	1.8	1.7	1.7	1.6	1.6	1.5	1.5	1.4	1.4	1.3	1.3	1.3	1.2	1.2	1.2	1.1	1.1	1.1	1.1
£20,000	3.6	3.4	3.3	3.2	3.1	3.0	2.9	2.8	2.8	2.7	2.6	2.5	2.5	2.4	2.4	2.3	2.2	2.2	2.1
£30,000	5.3	5.1	5.0	4.8	4.7	4.5	4.4	4.2	4.1	4.0	3.9	3.8	3.7	3.6	3.5	3.4	3.4	3.3	3.2
£40,000	7.1	6.9	6.6	6.4	6.2	6.0	5.8	5.7	5.5	5.4	5.2	5.1	4.9	4.8	4.7	4.6	4.5	4.4	4.3
£50,000	8.9	8.6	8.3	8.0	7.8	7.5	7.3	7.1	6.9	6.7	6.5	6.3	6.2	6.0	5.9	5.7	5.6	5.5	5.4
£60,000	10.7	10.3	9.9	9.6	9.3	9.0	8.8	8.5	8.3	8.0	7.8	7.6	7.4	7.2	7.1	6.9	6.7	6.6	6.4
£70,000	12.4	12.0	11.6	11.2	10.9	10.5	10.2	9.9	9.6	9.4	9.1	8.9	8.7	8.4	8.2	8.0	7.9	7.7	7.5
£80,000	14.2	13.7	13.3	12.8	12.4	12.0	11.7	11.3	11.0	10.7	10.4	10.2	9.9	9.7	9.4	9.2	9.0	8.8	8.6
£90,000	16.0	15.4	14.9	14.4	14.0	13.5	13.1	12.7	12.4	12.0	11.7	11.4	11.1	10.9	10.6	10.3	10.1	9.9	9.7
£100,000	17.8	17.1	16.6	16.0	15.5	15.0	14.6	14.2	13.8	13.4	13.0	12.7	12.4	12.1	11.8	11.5	11.2	11.0	10.7

# The policy case for low carbon buses

The adoption of low carbon vehicles is supported by the following **European, national and local policies:**

- **Carbon reduction:** The UK Energy White Paper and Climate Change Act; Renewable Transport Fuels Obligation; The Nottingham Declaration; Local Authorities' Carbon Management Programmes and Local Plans.
- **Air quality:** European Clean Vehicles Directive; National Air Quality Strategy; Local Air Quality Management process and Action Plans.
- **Economy:** DfT Low Carbon Transport Innovation Strategy & DfT White Paper (Creating Growth, Cutting Carbon – Making Sustainable Local Transport Happen); Local Sustainable Transport Fund.

## *The UK Energy White Paper and Climate Change Act*

The Energy Review 2006 sets out the big challenges we face, the need to work with other countries to tackle climate change by cutting greenhouse gas emissions, and the need to ensure we have secure energy supplies. Each is vital for future prosperity being global issues that call for international and UK action.

The Energy White Paper (2007) sets out a framework to address these challenges and help manage their risks. It sets out an international strategy which recognises the need to tackle climate change and energy security.

With the Climate Change Act (2008) the UK passed legislation that introduces the world's first long-term legally binding framework to tackle the dangers of climate change. This Act aimed to create a new approach to managing and responding to climate change in the UK, by:

- setting ambitious, legally binding targets
- taking powers to help meet those targets
- strengthening the institutional framework
- enhancing the UK's ability to adapt to the impact of climate change
- establishing clear and regular accountability to the UK Parliament and to the devolved legislatures

## *Renewable Transport Fuels Obligation*

The current Renewable Transport Fuels Obligation (RTFO) was introduced in 2008 and places an obligation on owners of liquid fossil fuel to ensure that either a certain amount of biofuel is supplied or that a substitute amount of money is paid when used in road transport.

## *The Nottingham Declaration*

Launched in October 2000 in Nottingham, the Declaration has now been signed by more than 300 English Councils. All Scottish and Welsh councils have signed their own versions.

By signing the Declaration councils and their partners pledge to systematically address the causes of climate change and to prepare their community for its impacts.

The Declaration is underpinned by a unique Partnership of all the key bodies that support English local authorities on climate change.

## *Local Authorities' Carbon Management Programmes and Local Plans*

Many councils and local strategic partnerships have developed climate change and sustainable energy plans and strategies.

For example, when organisations signed the Nottingham Declaration they made a commitment to: Develop plans with our partners and local communities to progressively address the causes and the impacts of climate change.

Councils can address climate change adaptation and mitigation through their roles as:

- Estate Managers
- Service Providers
- Community Leaders

Ideally a Climate Change Action Plan would cover all aspects, but it may be too much to tackle all of these in one go so there are examples of Councils focussing on one area as a first step.

## *European Clean Vehicles Directive*

The Directive on the Promotion of Clean and Energy Efficient Road Transport Vehicles aims at a broad market introduction of environmentally friendly vehicles. Public procurement can be a powerful market mover for the introduction of new technologies.

The Directive extends to all purchases of road transport vehicles, as covered by the public procurement Directives and the public service regulation. The Directive requires that energy and environmental impacts linked to the operation of vehicles over their whole lifetime are taken into account in purchasing decisions. These improved lifetime impacts on vehicle shall include, as a minimum, energy consumption, CO2 emissions plus emissions of the regulated pollutants, NOx, NMHC and particulate matter. Purchasers may also consider other environmental impacts as well.

Longer term, this Directive is expected to result, in a wider deployment of clean and energy efficient vehicles. Increased sales will help reduce costs through economies of scale, resulting in progressive improvement in the energy and environmental performance of the whole vehicle fleet.

## *National Air Quality Strategy*

Government action to improve air quality is important because of negative health effects and environmental damage seen to be caused by air pollutants. Tackling air pollution requires international, national and local action.

The UK Government and the devolved administrations published the most recent Air Quality Strategy for England, Scotland, Wales and Northern Ireland in July 2007. The strategy contains policies for the assessment and management of UK air quality and implementation of European Union (EU) and International agreements.

The strategy sets out a way forward for work and planning on air quality issues, the air quality standards and objectives to be achieved, while introducing a new policy framework for tackling fine particles. It identifies potential new national policy measures that modelling indicates could give further health benefits and moves closer towards meeting the strategy's objectives.

### *Local Air Quality Management process and Action Plans*

Local authorities in the UK have statutory duties for managing local air quality under Part IV of the Environment Act 1995 and in Northern Ireland, Part III of the Environment (Northern Ireland) Order 2002. They are required to carry out regular reviews and assessments of air quality in their area against standards and objectives prescribed in

regulations for the purpose of local air quality management (LAQM) before undertaking Action Planning if air quality is found to breach the regulations.

Defra and the devolved administrations provide support for local authorities and practitioners to meet these requirements including the operation of a helpdesk, tools for air quality modelling and monitoring.

## *Low Carbon Transport Innovation Strategy*

The Low Carbon Transport Innovation Strategy (LCTIS) was published at the same time as the Government's Energy White Paper, setting out an overall framework through which the Government will encourage innovation and technology development in "lower carbon" transport technologies. It also contains specific chapters on the road, aviation, rail and maritime sectors - setting out in detail the technologies that can contribute to "lower carbon" transport and the steps the Government is taking to encourage them.

The Government's approach to low carbon transport innovation recognises the range of market failures and barriers to entry that have impeded development and commercialisation of new technologies in this area. These include the early proving stages of many relevant technologies, limited demand from consumers, a still evolving regulatory environment and the high capital cost for "lower carbon" transport vehicles and infrastructure. These presently expensive



and un-commercial capital costs mean that LCB growth in the public transport sector has been slow without outside financial support, though this could improve markedly in future as fuel prices increase and future changes to BSOG take effect [*see the Financial Benefits section*]. Clearly, these difficult conditions have justified and could still attract a range of interventions by Government at national and local level to help stimulate the development of “lower carbon” transport technologies at all stages in the innovation chain and for all major modes of transport.

### ***DfT White Paper (Creating Growth, Cutting Carbon – Making Sustainable Local Transport Happen)***

The Local Transport White Paper sets out the Government’s vision for a sustainable local transport system that supports the economy and reduces carbon emissions. It explains how the Government is placing localism at the heart of the transport agenda, taking measures to empower local authorities when it comes to tackling these issues in their areas. The White Paper also underlines Central Government’s support to local authorities, including via the Local Sustainable Transport Fund.

### ***Local Sustainable Transport Fund***

The Government announced, as part of the Local Transport White Paper, the creation of a Local Sustainable Transport Fund (“the Fund”) to help build strong local economies and address the urgent challenges of climate change. It reflects the Government’s core objectives of supporting economic growth by improving the links that move goods and people and meeting its commitment to reducing greenhouse gas emissions.

The Fund represents a stage in the Government’s move away from specific grants to provide local authorities with the freedom to develop the targeted transport packages that address their particular transport problems. The aim is to facilitate best practice in the delivery of a wide range of sustainable transport schemes. The Fund presents an opportunity for transport authorities to capture the benefits from previous demonstration projects and identify how those benefits can be transferred and brought to life in their own particular areas.

# Case Study - Nottingham City Council (Supported Service Procurement)

Nottingham City Council was successful in its application to the Green Bus Fund Round 1 for four electric-battery midi-buses and has recently ordered vehicles to replace conventional diesel mini-buses on its CitiLink services in Nottingham city centre. The service is being run by TrentBarton. The delivery of the project includes a charging point in a city centre bus station to allow the buses to operate all day. This element of the project is being part-funded by a Cenex 'Plugged in Cities' grant.



The City Council subsequently applied for further electric-battery buses for its Medilink services through Round 2 of the Fund. It was again successful. Medilink provides a demand responsive, semi-fixed route set of services in a number of areas of the city with an emphasis on links to the city's hospitals, shopping centres and the city centre. Services provide opportunities for interchange with tram and conventional bus services. These services will be partly converted to electric operations during 2011-12. Again the investment secured through the 'Plugged in Cities' programme - at tram park & ride sites - is being used to complement the investment in vehicles.

The city council is pursuing an 'electric city' theme in its local sustainable transport fund bid and is looking to associate further electric bus investment alongside proposed extension to the NET tram system serving Beeston and Clifton, which should be fully operational by 2014.

# Case Study - GMPTE (Supported Service Procurement)

Greater Manchester PTE has deployed a fleet of 19 diesel-hybrid buses, part of up to 66 midibus vehicles it placed with the support of Green Bus Fund money. These entered service in early 2011 through a contract with FirstGroup on the Metroshuttle free city centre bus services that operate on three routes linking main bus stations, car parks, shopping centres and businesses in Manchester and Salford. These Metroshuttle routes operate with up to 6 minute frequencies, and the services are run by FirstGroup.



In parallel with the purchase of buses, the PTE has also entered into a maintenance contract with the bus manufacturer.

# Case Study - Dorset County Council (Supported Service Procurement)

**Dorset County Council supports a large proportion of bus services** in a County characterised by smaller towns and rural areas, with predominantly supported services. Dorset County Council (DCC) owns a significant fleet of vehicles used by operators (who hire them) in contracts on supported services. In addition, the Council contracts services to operators who own their own vehicles. [*The life-cycle for a service in Dorset is generally commenced by using Council vehicles with the aim of building patronage to ensure a reasonable tender price when it is fully contracted to an operator.*]

DCC bid to the GBF for 2 vehicles (battery electric Optare Solo vehicles), which are currently on order. The Solo is a common vehicle used in the County. Mid-sized vehicles suit the lower demand with limited ranges and the less intensive duties (*typically no evening services*). Consequently re-charging demands for electric vehicles are lower than they would be in major cities. The electric vehicles are destined for a supported service route (*and passed to an operator as part of the contract*). As a fall back they will be operated from DCC's own fleet and hired to an operator. A potential option is that vehicles are charged with green electricity from the Poundbury Biomass Plant (owned by Duchy of Cornwall). S106 monies are also being used to fund some additional features on the vehicles. In future DCC is hoping to convert existing diesel vehicles to Battery Electric operations. The LCEB initiatives in Dorset are part of a wider package approach for bringing quality public transport services that includes upgrading ticketing to smart card operations and installing Real-Time Information systems.

# Case Study - Oxfordshire County Council (Voluntary Partnership Agreement)

Oxfordshire County and Oxford City Councils have been pursuing sustainable transport policies for a significant time and have adopted radical strategies to manage traffic and prioritise bus travel in the City of Oxford. The area is serviced by Stagecoach, the Oxford Bus Company and other more minor providers. Stagecoach successfully bid in the first round of the GBF and Oxford Bus Company the second, with the County Council providing supporting statements to assist both bids. Stagecoach now runs **diesel electric hybrid double deck vehicles** for city centre service, which were previously run by Oxford Bus Company with EEV standard diesel buses. Oxford Bus Company plans to deploy diesel-electric hybrids on a commercially operated Park & Ride service.

Voluntary partnership agreements have been in place between the operators and County and recently a qualifying agreement was ratified (cleared by OFT and DfT) enabling a co-ordinated timetable between the main operators. The benefits for the City of Oxford and operators includes fewer buses running in the city creating less pollution and GHGs. Using fewer vehicles, operators also gain with higher passenger numbers carried per vehicle, e.g. 45 – 50 diesel-electric hybrids have replaced circa 100 older vehicles.



Work is underway on a QPS to ensure operators have confidence in their vehicle investment that serves the 4 main corridors into Oxford.

## ***Case Study - Bringing operators to the table*** **(Traffic Regulation Condition)**

In a number of cases LTAs have used the weight of a potential action they might take, under the regulations, to bring operators to the table and discuss less onerous options. The powers of the Traffic Commissioner to impose vehicle emission restrictions added to the powers of the LTA to pursue a Quality Contract are among the options invoked to persuade an operator that the LTA is willing to shake up the status quo unless some positive steps are taken to provide higher quality vehicles in their area.

Other examples include the option of developing a Quality Contract scheme, which has been used to bring operators to the negotiating table. Given that national groups have significant purchasing plans each financial year it is important for LTAs to consider how they can make theirs a priority area for deploying new vehicles, including LCBs.

## Low Carbon Bus Manufacturers

For reference, these are the contact details of LCB manufacturers.

### Alexander Dennis

Web-site address: <http://www.alexander-dennis.com>

Telephone: 01483 571271

### MAN Truck and Bus

Web-site address: <http://www.mantruckandbus.co.uk>

Telephone: 0179344880

### Optare

Web-site address: <http://www.optare.com>

Telephone: 0113 264 5182

### Volvo

Web-site address: <http://www.volvobuses.com>

Telephone: 01926 401777

### Wright Group

Web-site address: <http://www.wrightbus.com>

Telephone: 028 2564 1212

## Low CVP Toolkit Web links

### Low CVP Website

<http://www.lowcvp.org.uk>

### Certified LCB's

<http://www.lowcvp.org.uk/lceb/accredited/index.asp>

### CPT / pteg Bus Partnership Initiative

<http://www.buspartnership.com>



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