



**Dublin Light Rail  
Sustainability Plan  
2011–2015**

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**1.0 BACKGROUND**



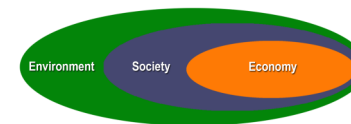
**1.1 Introduction**

The objective of achieving a modal shift from private to public transport is central to Irish Government policy on sustainable development and environmental protection. The Railway Procurement Agency (RPA) has been mandated to provide modern transport infrastructure and services that are highly accessible and offer an attractive alternative to travel by private car. RPA deliver the infrastructure and services included in its mandate through partnership with its contracting partners and with other public sector agencies.

RPA is committed to showing leadership in the sustainable delivery of public transport in relation to both existing Luas services and future projects (Luas and Metro). RPA’s responsibilities for operating and maintaining existing Luas infrastructure are shared with Veolia Transport Ireland and with Alstom. This Sustainability Plan identifies objectives for Luas infrastructure that are shared with our operating partners. These commitments are independent of and do not supersede existing contractual arrangements among RPA, Veolia and Alstom.

**1.2 Sustainability**

The concept of sustainability and sustainable development requires reconciliation between environmental, social and economic demands as illustrated in Figure 1.1. These are not exclusive from each other. Our society is dependent on the environment and our economy is dependent on our society and the environment. Environment and society are vital to support a healthy economy.



**Figure 1.1 Sphere of sustainability**

The UN Brundtland Commission Report defined sustainable development as “Development that meets the needs of the present without compromising the ability of future generations to meet their own needs”

While sustainability itself has been defined as "Sustainability is improving the quality of human life while living within the carrying capacity of supporting eco-systems" (Caring for the Earth: A Strategy for Sustainable Living." (1991) IUCN/UNEP/WWF)

Sustainability is a key driver of Government strategy with environmental and sustainable development objectives set out clearly in a number of Government strategy documents, such as the National Climate Change Strategy 2007–2012, “Making Ireland’s Development Sustainable” and the European Union Sustainable Development Strategy.

## 2.0 THE PLAN



### 2.1 The vision

RPA, Veolia and Alstom have visions that aim to contribute to the sustainable development of Irish cities, through providing reliable public transport with minimum negative environmental impacts and maximum social benefits.

### 2.2 Sustainability objectives

Two main sustainability objectives have been identified. Each objective is designed to deliver measureable sustainability benefits over this four year plan. These objectives are:

1. Energy Consumption  
Reduce energy consumption by 2014 across Infrastructure Delivery (Corporate and Design and Construction) and Service Delivery (Operations and Maintenance) activities

2. Waste Reduction  
Reduce the generation of waste by 2014 across Corporate, Infrastructure Delivery and Service Delivery activities

These objectives assist in reducing reliance on fossil fuels and heavy metals, reducing the contribution to the depletion of non-renewable resources, thus protecting the environment. Achieving these objectives should also reduce the economic cost of building, delivering, operating and maintaining light rail projects over their expected useful life.

The return from these objectives has the potential to be greatest during the design and construction stage of projects where the potential of avoiding the impact is greatest. The potential for greatest benefit after design and construction is management of operations.

## 2.3 Implementation

### 2.3.1 Organisation structure

The sustainability initiative is directed by the Environmental Impact Steering Group (EISG), which includes management of RPA, Veolia and Alstom and draws on a range of professional disciplines within the organisations as illustrated in Figure 2.1. This group is responsible for setting the overall strategy, objective approval and monitoring. This group meets on a monthly basis.

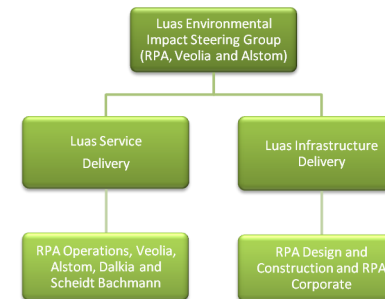


Figure 2.1 Organisation structure

### 2.3.2 Targets, actions and performance indicators

Both of the sustainability objectives are supported by targets, actions and performance indicators to support the delivery of each objective as detailed in Annex 1 of this plan.

For Luas to make measurable progress towards becoming a sustainability leader and to deliver the two objectives, the following will also be focused on over the four year period of this plan:

- Extending the reach of our sustainability objectives in our supply chain through adopting appropriate standards for Green procurement
- Exploring opportunities for partnering with other companies in relation to innovation in the area of sustainability

To deliver on the actions, the relevant RPA, Veolia and Alstom management teams will develop and implement programmes and action plans for their respective areas. Each plan shall include performance indicators and identify the processes required, such as actions, timelines, reporting, responsibilities and resources.

### 2.4 Measuring and reporting

Measuring and reporting progress is central to the success of the sustainability initiative. Veolia, Alstom and RPA will measure progress against targets on a monthly and sometimes more frequent basis to ascertain progress or determine if corrective actions or revisions to processes are necessary. All measuring and reporting will be against agreed baseline data; in the majority of instances this will be the data collated during 2009/2010. However, the respective action plans will detail the actual baseline data as the starting point for measuring progress. The results of this measuring will be reported to the EISG on a quarterly basis. Progress will be reported to staff on a periodic basis.

For measuring and reporting progress in relation to design and construction, actual data is not readily available; therefore, progress will be measured in the first instance in terms of implementation of initiatives.

An annual sustainability report will be prepared reporting on progress against this plan. This annual report will be approved by the EISG, and the Chief Executive Officer will report to the

RPA Board on this progress. The annual Sustainability Report will be published on the RPA website and a summary will also be included within the RPA Annual Report.

### 2.5 Management review

An annual review of the management of this plan will be undertaken with a view to bettering the system and addressing issues encountered during the previous year. The EISG will be responsible for leading the review with input from Corporate, Design, Construction and Operations.

**ANNEX 1 – TARGETS, ACTIONS AND PERFORMANCE INDICATORS INFRASTRUCTURE DELIVERY**

Table 1.1 Infrastructure delivery

Infrastructure Delivery Target – 20% reduction in energy consumption and waste generation for RPA Corporate by 2014					
Ref No.		Action Required	Performance Indicator	Reporting Requirements	Responsibility
ID1	Resources and Budget	ID1.1 Allocate sufficient resources and budget to support delivery of the targets	Roles and responsibilities defined and communicated to the relevant staff Budget allocation and appropriate codes in place. Budget holder clearly identified		Executive
ID2	Energy Consumption	ID2.1 Develop and implement an Energy Action Plan. This shall detail the monitoring and reporting arrangements to be put in place, responsible persons and initiatives to be implemented to contribute to the delivery of the overall objective and target. 2009/2010 data shall be used as the base year data from which the action plan shall be developed and progress measured against	Gas consumption Electricity consumption (one measure of operating energy consumption shall be used for RPA buildings; kWh/m <sup>2</sup> p.a.) Fuel consumption (litres of fuel per 100km)  Register of opportunities for retro fitting RPA buildings with solar panels or alternative power supplies	Green Team quarterly reports	Green Team
		ID2.2 Review depot and lighting design from a sustainability, and in particular an energy efficiency, perspective  ID2.3 Develop a procedure for sustainability assessment of RPA projects including energy efficiency design review and incorporate into the RPA design process	Energy efficient mechanical and electrical specifications to support depot and lighting design  Energy efficiency design review of Luas Broombridge Energy efficiency design review of Metro West Energy efficiency design review of Luas Lucan  Register of opportunities incorporating opportunities for alternative energy supply, such as solar panels, into designs	Design and Construction quarterly progress report	Design and Construction

Infrastructure Delivery Target – 20% reduction in energy consumption and waste generation for RPA Corporate by 2014					
Ref No.		Action Required	Performance Indicator	Reporting Requirements	Responsibility
ID3	Carbon Footprint	ID 3.1 Develop and establish a carbon footprint of corporate activities  ID 3.2 A carbon footprint procedure shall be developed and implemented. This shall detail the monitoring and reporting arrangements to be put in place, responsible persons and initiatives to be implemented to contribute to the delivery of the overall objective and target. 2009/2010 data shall be used as the base year data from which the action plan shall be developed and progress measured against	Carbon footprint of corporate activities  Calculation of our carbon footprint will consider direct, indirect and optional emissions where energy use, waste stream, and purchasing patterns generated to operate the Agency's offices coupled with transport for supplies, services and staff  In 2011, all emissions shall be converted to and reported in CO2 equivalent metric tonnes  In 2012 we shall adopt a recognised accredited format for reporting our carbon footprint	Quarterly carbon footprint	Green Team
		ID 3.3 Increase knowledge and understanding of embodied carbon associated with our works and how it can be managed by December 2011  ID 3.4 Develop and implement a RPA Concrete Policy, incorporating green concrete. This shall be included in all works issued by March 2011  ID 3.5 Review all construction specifications and incorporate green requirements by December 2011	Embodied carbon briefing session  RPA Concrete Policy  Revised construction specifications	Design and Construction quarterly progress report	Design and Construction
ID4	Waste Generation	ID 4.1 Develop and implement a procedure for waste through the design and construction phase of a project  ID 4.2 Review design of projects in the planning and design phase for opportunities to reduce the generation of waste through cut and fill and reuse and recycle opportunities  ID 4.3 Prepare construction stage waste management plans for all projects in the design and planning phase  ID 4.4 Review the waste associated with disposal of assets for the presence of chemicals and compounds with potential to negatively impact the environment and identify opportunities for elimination and/or substitution of such products	RPA sustainability assessment procedure and checklist  Peer review of Luas Broombridge  Waste management plans for each of the projects in the design and planning phase  Register of materials, products, chemicals and compounds for elimination and or substitution and a programme for phasing out	Design and Construction quarterly progress report	Design and Construction

Infrastructure Delivery Target – 20% reduction in energy consumption and waste generation for RPA Corporate by 2014					
Ref No.		Action Required	Performance Indicator	Reporting Requirements	Responsibility
		<p>ID 4.5 Review waste streams for opportunities to minimise the generation of waste and seek suggestions from all staff</p> <p>ID4.6 Review all waste streams for the presence of chemicals and compounds that build up in society and identify opportunities for elimination and/or substitution of such products</p> <p>ID4.7 Review all waste streams for materials and products with the potential for negative environmental effects and identify opportunities for elimination and or substitution of such products</p>	<p>Register of opportunities to minimise the generation of waste</p> <p>Monthly waste disposal weights</p> <p>Register of materials, products, chemicals and compounds for elimination and/or substitution and a programme for phasing out of the particular products</p>	Green Team quarterly reports	Green Team
<b>ID5</b>	<b>Water Consumption</b>	<p>ID 5.1 Establish baseline water consumption per employee for 2010</p> <p>ID 5.2 Develop and implement a water conservation programme covering the metering, monitoring and reporting of water use in all RPA buildings</p> <p>ID 5.3 Assess the opportunities for retro fitting RPA buildings with rain water harvesting infrastructure</p>	<p>Monthly water readings per employee at all RPA offices</p> <p>A 20% reduction in water consumption per employee in 2014</p> <p>Life cycle assessment and cost benefit analysis of rain water harvesting infrastructure</p>	Quarterly reports	Green Team
<b>ID6</b>	<b>Awareness</b>	<p>ID 6.1 Develop and implement an awareness campaign targeting the 20% reduction</p>	<p>Two energy awareness initiatives will be run each year</p> <p>Energy, natural resource, chemical and waste minimisation awareness training resources and opportunities for staff will be developed and the number of staff trained will be recorded and reported each year</p>	<p>Green Team quarterly reports</p> <p>Quarterly training record reports</p>	Green Team
		<p>ID 6.2 Develop and implement an energy awareness campaign targeting the reduction</p>	<p>Design and construction energy, natural resource, chemical and waste minimisation awareness training resources and opportunities for staff will be developed and the number of staff trained will be recorded and reported each year</p>	Quarterly training record report	Design and Construction
<b>ID7</b>	<b>Procurement</b>	<p>ID 7.1 Review RPA Procurement Policy for opportunities to minimise energy consumption and waste generation through the procurement process</p> <p>ID 7.2 Develop and implement a Procurement Sustainability Guide</p>	<p>Procurement Policy taking account of the commitment to sustainability</p> <p>Procurement Sustainability Guide published and communicated to all staff by June 2011</p>	Procurement quarterly reports	Project Services
		<p>ID 7.3 Review RPA design and construction specifications for opportunities to minimise energy consumption and waste generation</p>	<p>Revised design and construction specifications taking account of the principles of sustainability</p>	Design and Construction quarterly	Design and Construction

Infrastructure Delivery Target – 20% reduction in energy consumption and waste generation for RPA Corporate by 2014					
Ref No.		Action Required	Performance Indicator	Reporting Requirements	Responsibility
		ID 7.4 Review design and construction specifications for non-biodegradable toxic compounds and chemicals and consider opportunities for elimination and/or substitution of such products	Register of non biodegradable toxic compounds and chemicals for elimination and/or substitution	progress report	
<b>ID8</b>	<b>Innovation</b>	ID 8.1 Research and establish developments in the area and identify opportunities for innovation that Luas could support	Register of opportunities that Luas could support to be in place by June 2011 and reviewed on an annual basis thereafter	Quarterly progress report	Executive

## ANNEX 2 – TARGETS, ACTIONS AND PERFORMANCE INDICATORS

Table 1.2 Service delivery

Service Delivery Target – 15% reduction in energy consumption and waste generation by 2014					
Ref No.		Action Required	Performance Indicator	Reporting Requirements	Responsible Person
<b>SD1</b>	<b>Resources and Budget</b>	SD 1.1 Allocate sufficient resources and budget to support delivery of the targets	Roles and responsibilities defined and communicated to the relevant staff Budget allocation and appropriate codes in place. Budget holder clearly identified		Veolia Operations
<b>SD2</b>	<b>Energy Consumption</b>	SD 2.1 Develop and implement an Energy Action Plan	Gas consumption Electricity consumption Fuel consumption	Veolia quarterly progress report	Veolia Operations
<b>SD3</b>	<b>Carbon Footprint</b>	SD 3.1 Develop a procedure and year on year establish the carbon footprint for Operations	Carbon footprint	Veolia quarterly progress report	Veolia Operations
<b>SD4</b>	<b>Waste Generation</b>	SD 4.1 Review all waste streams for the presence of for non-biodegradable toxic compounds and chemicals and identify opportunities for elimination and/or substitution of such products SD 4.2 Monitor and report on all paper use across the organisation SD 4.3 Review the supply chain for opportunities to reduce the generation of waste by 20%	Register of materials, products, chemicals and compounds for elimination and/or substitution Monthly waste statistics Monthly paper consumption per person	Veolia quarterly progress report	Veolia Operations

Service Delivery Target – 15% reduction in energy consumption and waste generation by 2014					
Ref No.		Action Required	Performance Indicator	Reporting Requirements	Responsible Person
SD5	<b>Water Conservation</b>	SD 5.1 Establish baseline water consumption in 2010 SD 5.2 Develop and implement a water conservation plan covering the metering, monitoring and reporting of water use in all buildings and facilities	Monthly water readings at all locations Daily/weekly readings prior to automatic transfer of water consumption data Register of opportunities and associated cost benefit analysis for water conservation initiatives	Veolia quarterly progress report	Veolia Operations
SD6	<b>Awareness</b>	SD 6.1 Develop and implement an energy and natural resource awareness campaign, targeting the reduction SD 6.2 Develop and implement a waste minimisation awareness campaign targeting the 15% reduction SD 6.3 Develop and implement a chemical awareness campaign	Two energy awareness initiatives each year Energy awareness training resources and opportunities for staff will be developed and the number of staff trained will be recorded and reported each year 1 Natural resource awareness initiative will be run each year 2 Waste reduction awareness initiatives will be run each year Waste minimisation awareness training resources and opportunities for staff will be developed and the number of staff trained will be recorded and reported each year	Quarterly training record report incorporated into the Veolia quarterly progress report	Veolia Operations
SD7	<b>Innovation</b>	SD 7.1 Research and establish developments in the area and identify opportunities for innovation that Luas could support	Register of opportunities that Luas could support to be in place by June 2011 and reviewed on an annual basis thereafter	Veolia quarterly progress report	Veolia Operations
SD8	<b>Procurement</b>	SD 8.1 Review Procurement Policy for opportunities to minimise energy consumption and waste generation through the procurement process SD 8.2 Review construction specifications for opportunities to minimise energy consumption and waste generation SD 8.3 Develop and implement a Procurement Sustainability Guide SD 8.4 Review the supply chain and construction specifications for non-biodegradable toxic compounds and chemicals and consider opportunities for elimination and/or substitution of such products	Revised Procurement Policy taking account of the commitment to sustainability Procurement sustainability guide published and communicated to all staff by May 2011 Register of toxic compounds and chemicals for substitution Register of revised construction specifications	Veolia quarterly progress report	Veolia Operations