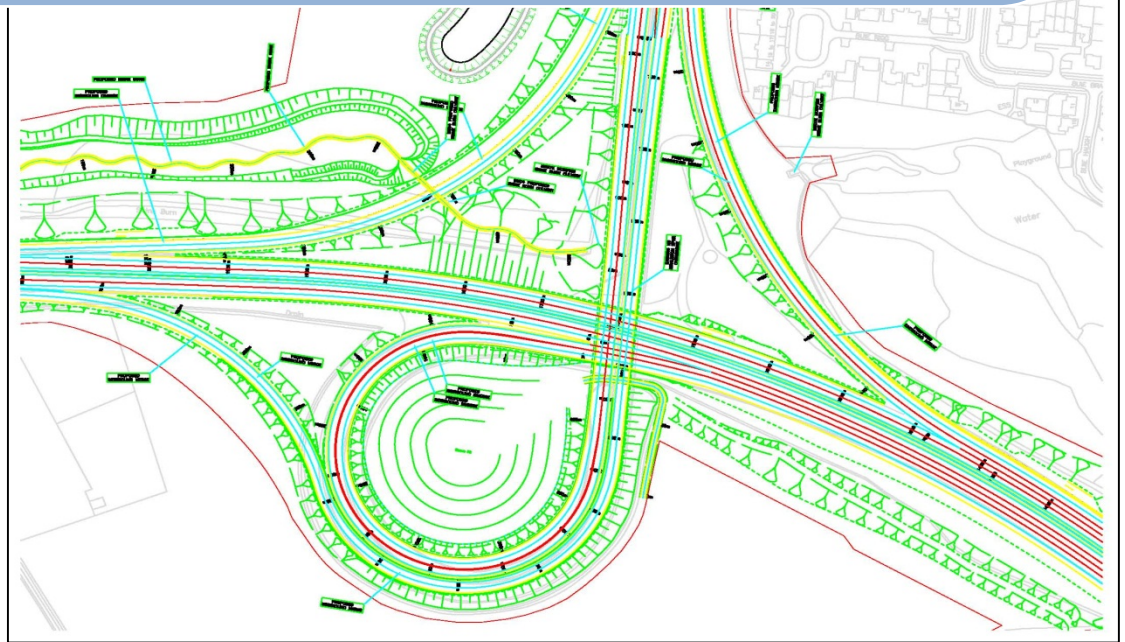




FORTH REPLACEMENT CROSSING M9 Junction 1a OPERATIONAL ENERGY PLAN






Issue 2: April 2012

FORTH REPLACEMENT CROSSING M9 Junction A1

OPERATIONAL ENERGY PLAN

CONTROLLED DOCUMENT (Unless Printed)			
Report No: OEP 02			
Status:	Construction Issue	Copy No:	Issue 2

	Name	Signature	Date
Prepared by:	Roland Tarrant		April 2012
Checked SRB:	Paraic McCarthy		April 2012
SRB Approved:	Paraic McCarthy		April 2012

Revision Record					
Rev	Date	By	Summary of Changes	Chkd	Aprvd
02	30-04-12	RT	Revised to reflect comments from the EDT on CR00233	RT	PMc

Forth Replacement Crossing,
Project Office,
King Malcolm Drive,
Rosyth,
KY11 2DY

OPERATIONAL ENERGY PLAN

Introduction

As detailed in CL3.9.1 Part A1 of the Employers Requirements, the purpose of this Plan is to detail the energy requirements for the execution and Completion of the Works

Definition of the Operation Energy Plan

Operational Energy Plan means a plan that sets out the energy requirements of the design of the Works that will provide the information from which the Contractor can consider and implement renewable energy generation.

Operational Energy – Roles

Roland Tarrant (SRB – Quality and Environmental Office) will act as the SRB Sustainability Manager to achieve the goals of the Operational Energy Plan.

Operational Energy Plan Objectives

The Key Objectives of the plan are to determine how the execution and completion of the Works is to be powered. This will be carried out for the following areas:

- Construction Phase
- Operational Phase

Construction Phase

- Plant and Machinery
 - Mobile Plant
 - Semi Mobile Plant
 - Fixed Plant
 - Site Vehicles
- Compound Power

Plant and Machinery

The spread out nature of the site and the short duration of individual works elements means that the only practical option for mobile and semi-mobile plant and machinery is to be operated using diesel power. The main reasons for this are:

- Spread out nature of the site and the construction elements restrict the efficient laying of cabling for electric power of plant to ensure that all areas are covered
- The need for constant movement of plant and machinery eliminate the potential for electric power of even the smallest units of plant such as generators
- The underdevelopment, lack of constant availability, machinery warranty issues and cold weather limitations of bio-diesel as a realistic alternative to diesel, even in large ratio mixes, means that “red” diesel is the only viable option for powering plant and machinery.
- Health and Safety considerations prevent the laying of large lengths of cabling to facilitate either renewable or electricity powered plant

This includes the following categories of plant:

Mobile Plant	Semi-mobile plant	Site Vehicles
Excavators	Pumps	4x4 Site Jeeps
Piling rigs	Compressors	Site Cars
ADT Dump trucks	Large and medium sized generators	
Tipper lorries		
Directional drilling rigs		
Sheet piling rigs and cranes		

In the case of fixed plant such as the site offices, then electricity supply is the most energy efficient option. Solar power or wind power are not viable for the following reasons:

- Solar power generation in Scotland is not sufficient for year round generation of power and a back-up electric supply would be required to be engaged for much of the time. The additional cost of the installation of the solar panels would not make this a viable or efficient energy saving option.
- Wind power is not sufficient because, like solar, a back-up supply would be required. Although Scotland has much potential for wind generation, the site in Stirling Road has not been assessed during the planning phase for wind generation potential. Given the sensitive nature of the Scheme, it is not likely that a wind turbine of the required size would be acceptable or that it could be installed for the relatively short duration of the project so that even minor energy benefits could be derived.

Compound Power

As discussed in the Energy Management Plan, the optimum power supply for the compound is electricity. SRB will seek to obtain the greenest tariff that is economically feasible so that maximum energy and carbon gains can be obtained.

Operational Phase

In CL 17.11.3.1 and 18.3.24 of Part A1 ER, there is no option for SRB to introduce renewable forms of energy into items such as the ITS systems or traffic counters, gantry lighting, public lighting etc. The most practicable option is to seek the greenest tariff available for the power supply to these pieces of equipment.

Review of Operational Energy Plan

The Operational Energy Plan will be reviewed every six months or sooner, depending on results from site audits and reviews.