

### 1.1 Purpose

This Field Development Plan relates to the proposed development of PEDL 133, initially centred on the Airth area[ ]

### 1.2 Background

PEDL 133 is an onshore UK licence granted to Dart heritage company, Composite Energy in 2004. The licence area is 330 km<sup>2</sup>, situated approximately 60 km NW of Edinburgh and 50 kmNE of Glasgow (Figure 1).[ ]

Area has been extensively mined for coal from 18<sup>th</sup> to 21<sup>st</sup> Century. CBM exploration and appraisal has been previously carried out in the 1990's by Coalbed Methane Limited (CBML) and Composite Energy/Dart Energy from 2004 onwards.

Carboniferous coals, comparable with those of the US Appalachian Basins (e.g. Black Warrior Basin) are the production targets.

### 1.3 Project Scope

[ ]

**Stage 1, Early Commercialisation and Appraisal of the South Letham Area:** the connection of up to three production wells to a gas fired generator, associated switch gear, and transformer to provide a complete and functional power generation facility. Commercial gas production expected during 2Q 2012 (this was the subject of a FDP application in November 2006 "Airth Pilot CBM Development");

[ ]

### 1.5 Project Schedule

[ ]

Copies of relevant planning consents are provided in Appendix 1. [ ]

#### Field Management Plan

The fundamental principles underlying the field management plan are to ensure safe operations, be a good neighbour in the community and maximise product return through maximising recovery and monetisation of gas over field life while controlling costs.

#### Decommissioning Plan

The field will be decommissioned in accordance with the requirements of the applicable planning approval, and with generally accepted practices in the onshore oil and gas industry.

## 2. FIELD DESCRIPTION

### *2.1 Seismic interpretation and structural configuration*

PEDL 133 lies within the northeast-southwest trending Midland Valley of Scotland, an area of low-lying ground approximately 80km wide. The parallel Highland Boundary and Southern Uplands Faults separate the Midland Valley from the Lower Palaeozoic and older metamorphic terrain of the Grampian Highlands and the relatively unmetamorphosed Lower Palaeozoic ocean trench sequence of the Southern Uplands (Figure 3).

Carboniferous sedimentary basins in the Midland Valley of central Scotland result from lithospheric tensional stretching. Deposition took place within a complicated Lower Carboniferous rift environment controlled by fractures with orientations inherited from basement Caledonian trends. By the Upper Carboniferous, complex basin development had simplified into more homogenous crustal sag.

Structural configuration was assessed in an integrated approach using 244km of 2D seismic acquired between 1982 and 1986 along with various mining data, drilling records and BGS mapping. Airth area is characterised by an uplifted fault block in a series of tilted fault blocks which typically step down to the south, on the western limb of the Clackmannan Syncline. Coals within the development area typically dip to the east, towards the axis of the syncline at 5-10 degrees [ ]

### *2.2 Geological interpretation and reservoir description*

The regional geological setting is very well documented after centuries of mineral extraction and associated geological analysis by mining companies and academic institutions. Detailed knowledge of the target coal seams results from historical mining and coal exploration supplemented by 5 CBM wells drilled in the 1990's by CBML and a further 10 vertical and horizontal CBM wells drilled by Composite Energy/Dart Energy since licence award in March 2004 as shown in Figure 5.

The targets of PEDL 133 development are gas-bearing coal seams of the Namurian, Limestone Coal Formation. Four seams in the Main Coal group will be completed for production being the Greenyards, Upper and Lower Bannockburn Main and Knott Seams (from shallow to deepest). The Limestone Coal Formation consists of repeated short sequences of black or grey mudstone passing upwards into siltstone or laminated silty mudstone and sandstone which are overlain in turn by seatearth and relatively thick coal. The formation was laid down during an episode of primarily non-marine/paralic deposition, driven by rapid sedimentation sourced from the erosion of the recently uplifted Highland High to the north.

[ ]

[ ]

### 3. DEVELOPMENT AND MANAGEMENT PLAN

#### 3.1 Preferred development plan, reserves and production profiles

[ ]

**Stage 1, Early Commercialization and Appraisal of the South Letham Area:** the connection of three production wells to a gas fired generator, associated switchgear, and transformer to provide a complete and functional power generation facility. This is in place and operational.

[ ]

#### 3.3 Process facilities

[ ]

#### Venting & Flaring

Only cold venting shall be undertaken at the LTS main processing facility in line with UK legislation. A licence shall be in place for an allowable five tonnes per day cold venting which represents an annualised volume equivalent to 2.65 days at full capacity blow-down. There will be provision to facilitate venting and flaring at well sites, on an emergency basis.

[ ]

Figure 1 – Copy attached

Figure 3 – Copy attached

Appendix 1 – Copy attached



# FIGURES

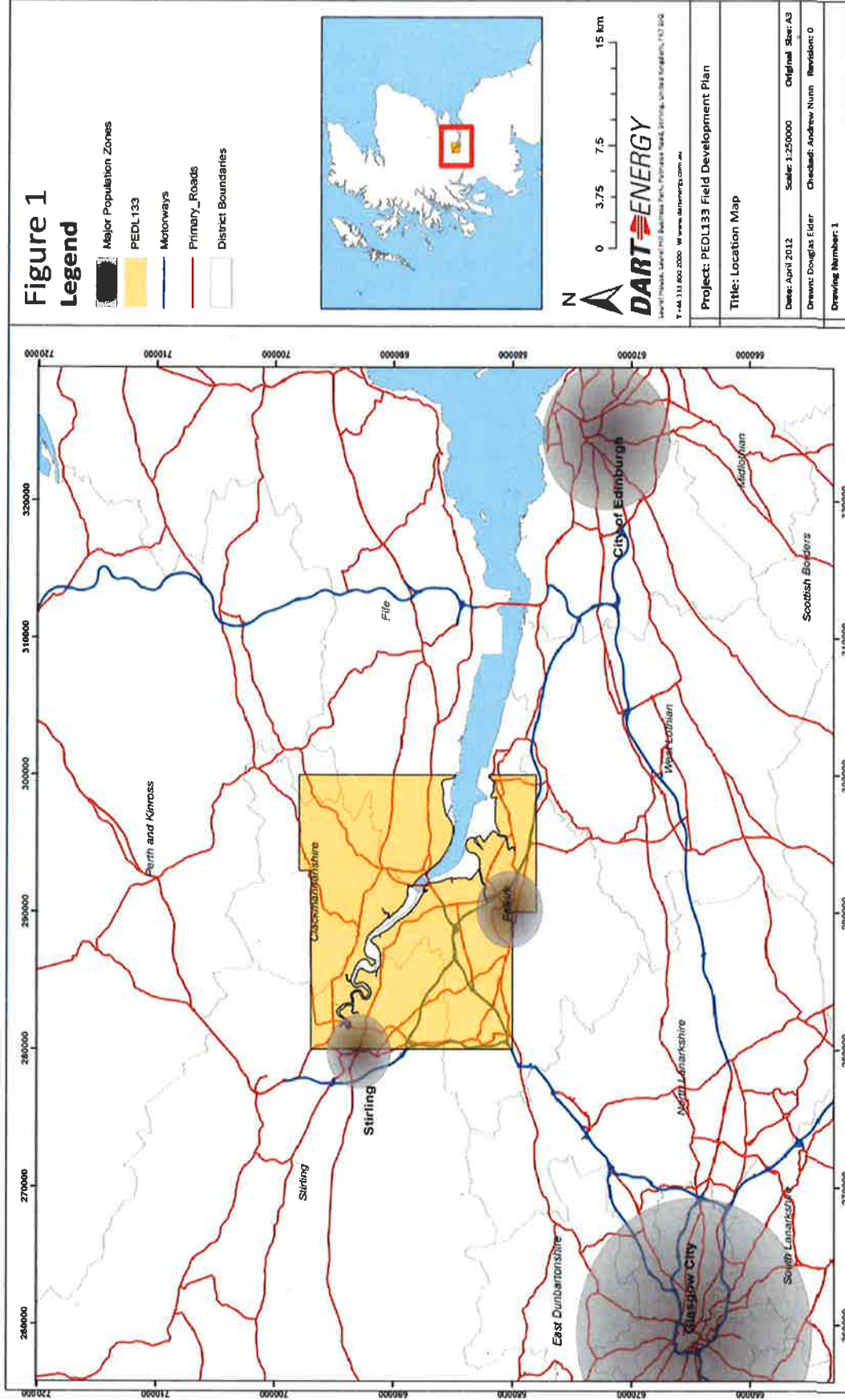


Figure 1 - Location Map



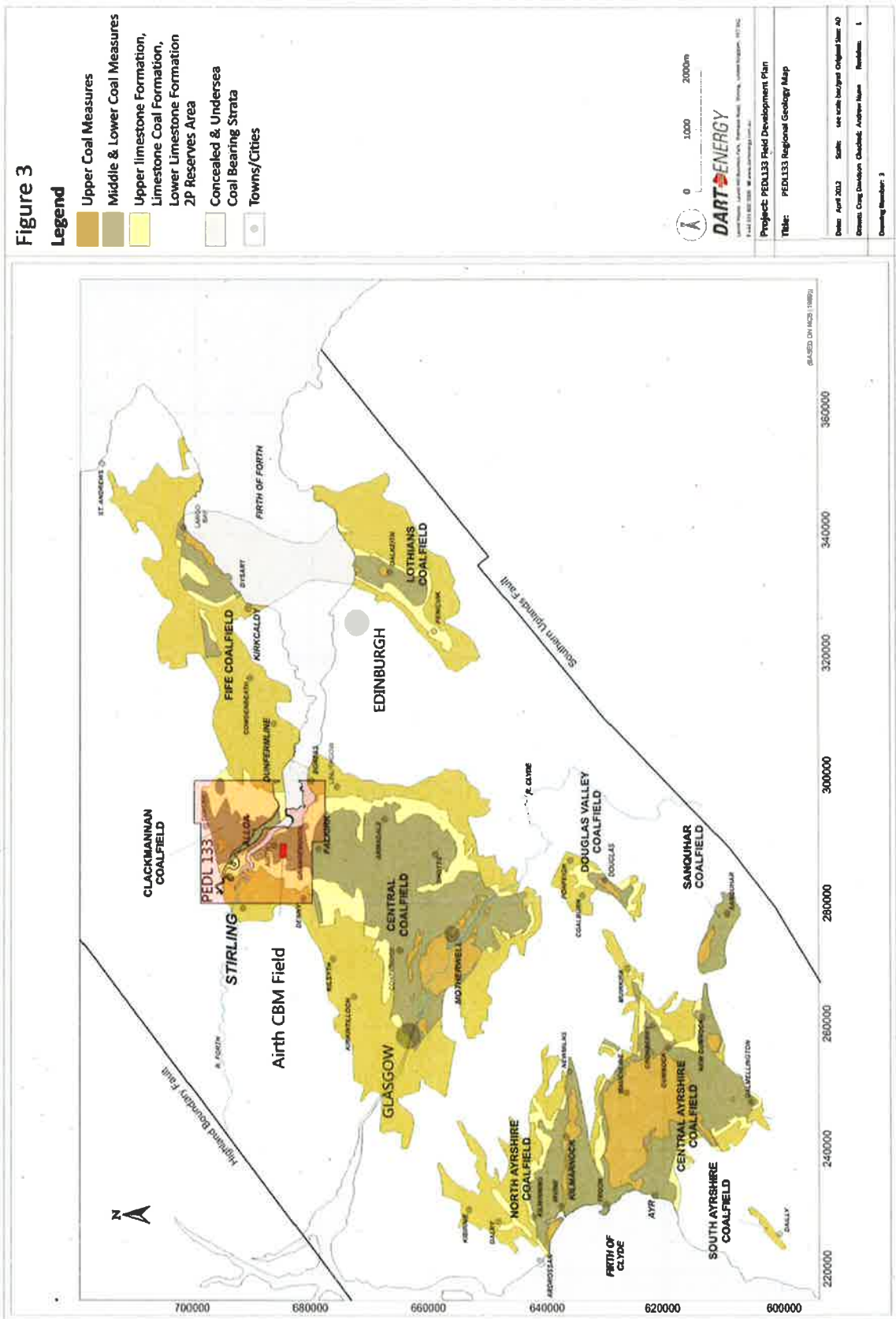


Figure 3 - PEDL 133 Regional Geology Map





## APPENDICES

### Appendix 1: Planning Applications (Granted & Pending)

	<b>Planning Application</b>	<b>Granted (decision notice attached)</b>
1	25 well cluster development (Longannet Power Station),	Fife Council 11 March 2008
2	4MW Power Generation scheme (Airth 2/5 Site)	Falkirk Council 17 April 2008
4	375kW Power Generation Scheme (1/7/10 site)	Falkirk Council 15 February 2011
5	School Wood Temporary Appraisal Borehole	Clackmannanshire Council 13 April 2012
6	Variation to Planning Permission at 1/7/10: increase to 2.2MW of generation capacity	Falkirk Council 27 April 2012
7	Production Well: Airth-13/14 (Rosehill)	Stirling Council 4 May 2012 Falkirk Council 21 June 2012 (to follow)
	<b>Planning Application</b>	<b>Pending (planning application available on request)</b>
1	Airth FDP: Gas Delivery and Water Treatment Plant, 15 production wells, gas gathering and ancillaries	Planning Application Notice submitted 26 April 2012 (targeting planning permission by December 2012)

