

WRITE YOUR FULL ADDRESS HERE:

Mr John Milne – Case Officer
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ADDRESS 1.....
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DATE.....

P/12/0521/FUL: Development for coalbed methane production at Letham Moss, Falkirk.

Dear Mr Milne,

The residents and parents of Kinnaird Village and the Inches have come together to agree on **2 visions for our community 20 years from now**. The first vision is informed by, and in support of, Falkirk Council policy. The second is based on our collective assessment of scientific and anecdotal evidence from Coalbed Methane (also termed CBM or CSG) operations elsewhere, and is what we believe may materialise if the Dart Proposal proceeds under the current regulatory framework. **To safeguard the first of these visions, we will also set out our Mandate for a new legal framework sufficient to ensure our community will never be at risk from unconventional gas mining.** We believe we also speak on behalf of other communities and individuals in Falkirk and Stirling Local Authorities, the Midland Valley and further afield, who may be affected by this application, or others in future, and welcome their sharing, signing and support of this document.

Our Vision 1) Our Community under the Falkirk Council Structure and Local Plans is happy, prosperous and healthy. We are envied for the quality of our air, water and natural surroundings, and our thriving, sustainable local economy. Visitors and our children want to live and work here. We’ve achieved this future through care for and restoration of our natural environment, and investment in leisure and tourism, sustainable industry and agriculture, and renewables.

Our Vision 2) Our Community if the current Dart Proposal goes ahead is depressed, poor and affected by smog and sickness. Our landscape is peppered with rig flares, our outdoor access is inconvenienced by continuous industrial traffic, and our air, groundwater, rivers and streams, farmland, and natural surroundings are contaminated. Nobody wants to live or create businesses here anymore, many of our children have moved away to find a better life, and there is doubt that Falkirk Local Authority can ever fully recover its lost reputation. Those remaining are unable to sell their houses, get affordable insurance or find desirable jobs.

We believe Vision 2 will have come about because:

- (i) **Existing Local and National Policy on mineral extraction was designed to regulate ‘surface mining’ and was not adequate to cover the indirect impacts of CBM extraction underground**, and, thus, *significant risks* were out-of-scope when considering the Dart Proposal, particularly the effects of dewatering and migration of toxic contaminants, neither of which the mining company or SEPA can completely control.
- (ii) **Dart’s Environmental Assessment was guided by the precedents of “coal, aggregate, peat and fireclay” and therefore, did not fully evaluate the spectrum of hazardous pollutants associated with CBM extraction and their potential adverse effects on the health of people and the natural world.** This includes toxic gases, carcinogens, endocrine disruptors (EDCs), radioactive materials, and bio-accumulative substances and the secondary products of chemical breakdown and reaction. As a consequence, their release into our air, soil and water was insufficiently measured and monitored.
- (iii) **Our Community and Falkirk Council did not act** because most were not aware of the application or of the powerful evidence of the risks from CBM operations elsewhere¹. Moreover, those that were, did not take sufficiently seriously *their personal responsibility to unite in the interests of the safety of their community, their children and their natural environment, or properly consider long-term scenarios and cleaner, cheaper energy alternatives for the area.*

¹ “Contaminated Sites and Accidents Relates Specifically to CSG / LNG in Australia” (CoalSeamGasNew.org, 2012), <http://coalseamgasnews.org/wp-content/uploads/2012/10/Contaminated-sites-and-accidents-related-specifically-to-CSG-in-Australia.pdf>.

Therefore I, standing in complete support of the Community of Kinnaird Village and the Inches; of Larbert, Stenhousemuir and Torwood Community Council²; of Falkirk Council Plans; and of all other local, Scottish and UK communities who will be affected by proposals to extract unconventional gas now, and in the future; will not permit Dart's current application to go ahead near homes, schools, recreational areas, farmland and natural spaces, until: -

- (i) **The Local and National Policy and Regulatory framework has been overhauled in light of scientific and anecdotal evidence of the risks from CBM extraction elsewhere.** We must remind that under EU Law it is a statutory requirement that *if any policy or action has a suspected risk of causing harm to the public or to the environment then, in the absence of scientific consensus that the action or policy is harmful, the burden of proof that it is not harmful falls on those taking the act*³. We therefore demand that under this 'Precautionary Principle' the limitations of current policy are redressed, and we set out our own Mandate and criteria for this below, with selected evidence to support our 'suspicion' of risk.
- (ii) **The Dart Proposal has been re-assessed thoroughly under this new framework and according to the 'Precautionary Principle'**, and if there are extant suspected "risks to the amenity of communities or the local environment", some of which cannot not "be mitigated or eliminated by the use of planning conditions or agreements" then the Proposal "cannot be supported" (according to 'overriding' FSP policy, ENV8 - Principles for Mineral Extraction).
- (iii) **Our Community and Falkirk Council have been comprehensively and transparently informed and consulted regarding the design, implementation and outcomes of any assessment under the new framework, all the potential risks, and are active participants in the subsequent monitoring regime.** This is also a statutory requirement under EU law⁴, and we propose the formation of a 'Committee' for this purpose in our Mandate (see 5) below).
- (iv) **Together, our Community and Falkirk Council have also given proper consideration to renewable energy alternatives** which may have greater consonance with long-term national and local aspirations, and policies, on community quality-of-life environmental restoration, energy and sustainability (notably, the challenging targets of the Climate Act 2009⁵), and are likely to exceed Falkirk Local Authority's "material" obligations to the nation (defined as representing "10% of Scotland's gas demands for 25 years" see Dart Planning Statement 4.3) without adding to a fossil fuel energy burden for which the council area has already suffered more than its fair share.

Why don't we believe current policy is relevant to CBM extraction? In Dart's response (see Planning Statement 3.6) to FCLP EQ32 (General Criteria for Mineral Extraction) they state "*in the absence of specific policies on CBM the proposed development will be assessed against the relevant mineral policies*". Dart also remind us in their responses to subsequent mineral policies EQ33 (Cumulative Impacts), EQ34 (Benefits) and EQ35 (Information from Applicants) that "*although (these policies are) considered at the request of Falkirk Council, the focus (of this policy) is on surface mining and other extractive industries rather than development of the nature and scale of the current proposal*" and indeed "*give no weight*" to policies EQ35.2, 4, 5 and 6 as a result, despite these being of material importance to a full and proper risk assessment (e.g. details of future plans, working practices, restoration plans and contingency measures). Thus, the applicant indicates that the current Local Policy is not relevant to the new processes they intend to employ.

Why do we believe the absence of relevant policy may entail a risk to Falkirk's public and environment? According to a 2012 whitepaper⁶ prepared for 'companies, policymakers and other observers of the emergent energy boom industry' there are 4 main differences between the extraction of coalbed methane and shale gas. The 3 relevant to the current Proposal are: (i) Coal gas is usually shallower than shale, which increases the "*likelihood that gas and produced water could migrate (from the coal*

² "Objection to Planning Application: P/12/0521/FUL - Development For Coalbed Methane Production, Including Drilling, Well Site Establishment at 14 Locations, Inter-Site Connection Services, Site Access Tracks, a Gas Delivery and Water Treatment Facility, Ancillary Facilities, Infrastructure and Associated Water Outfall Point" (Larbert, Stenhousemuir & Torwood Community Council, 2012), <https://dl.dropbox.com/u/725672/Dart%20Energy%20-%20Final%20Submitted%20Objection%20-%203.12.12.pdf>.

³ "The Precautionary Principle" (Europa, 2011), http://europa.eu/legislation_summaries/consumers/consumer_safety/l32042_en.htm.

⁴ "Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters" (UNECE, entered into force 2001 1998), <http://ec.europa.eu/environment/aarhus/>.

⁵ St Andrew's House Scottish Executive, "Climate Change (Scotland) Act 2009," Website Section, December 7, 2009, <http://www.scotland.gov.uk/Topics/Environment/climatechange/scotlands-action/climatechangeact>.

⁶ "The Global Anti-Fracking Movement. What It Wants, How It Operates and What's Next." (Control Risks Group Limited, 2012).

seam) to contaminate the water table"; (ii) Water must be pumped out of, rather than into, mineral deposits and therefore, the "subsurface water risks are greater (than shale gas extraction) insofar as water from adjacent aquifers could migrate into coal formations as reservoir pressures decline. For both coal and shale gas well, water produced from the well is saline and toxic in high concentrations, and require similar types of handling, treatment and disposal"; and (iii) whilst coal is more porous than shale rock, up to "40% of wells are (still) estimated to ultimately require hydraulic fracturing". (See also⁷ for further confirmation of CBM differences and risks).

To add to this, a new assessment of Dart's test results for only their treated water (released into the River Forth) demonstrated that 13 of the 15 chemicals reported were endocrine disruptors and / or carcinogens and that they represented a significant risk at the discharge quantities represented by the Proposal. The paper concluded that "considering the scientific knowledge we possess about the bioaccumulative impacts of (only) these chemicals on health and biological integrity" "the risks to health and life associated with the Proposal far outweigh its economic benefits, and our conscience and duty of care demands that we ban all CBM operations in Falkirk Local Authority with immediate effect"⁸.

In summary, the risks of harm to our soil, water and air through dewatering, migration, and the toxicity of produced and treated waste, are potentially greater with CBM extraction than with shale gas 'fracking' and, whilst not a prerequisite for these adverse impacts, hydraulic fracturing (i.e. 'stimulation') is also routine in CBM processes. Indeed, a gas field services company which "almost all CBM producers choose as their partner"⁹ deems hydraulic fracturing as "necessary" at the outset of CBM operations "for facilitating dewatering and elevating gas production rates to economic levels"¹⁰. Furthermore, Department of Energy and Climate Change documents related to the Airth Pilot Project¹¹ state "one area where work is being carried out in our current activities is investigation into the stimulation of the Lyoncross Coal sequence (and) initial tests carried out on the Airth #1 well show these coals carry very good gas contents", and that "perforation and fracture stimulation of each seam" at Airth constituted the earliest instance of CBM production from vertical wells in the UK¹². Thus, contrary to claims and unbeknown to Council and Community, it seems unquestionable that hydraulic fracturing has already been practised in Falkirk Local Authority during exploratory activities. We need to be certain that the current applicant's denial of any intention to use 'fracking' isn't because they are assuming a narrow definition of the term which pertains only to those processes involved in shale gas extraction, and we need to be certain that the data necessary to establish whether or not hydraulic fracturing is in occurrence is continuous and publicly available.

Do other countries, territories and organisations believe the absence of relevant policy may entail a risk to public and environment? There follows a selection of bans and moratoriums pertinent to the current planning application. 24/08/12 *Australia*. The State of Victoria put a halt on new coal seam gas exploration licences, and a ban on the use of hydraulic fracturing in CBM extraction, until a *new national regulatory framework for regulating coal seam gas* was put in place by federal government¹³. 19/12/12 *Canada*. The British Columbian Government announced CBM development would be permanently banned from the headwaters of all major salmon rivers¹⁴. 19/02/13. *Australia*. The State of New South Wales announced a state-wide ban on all CBM activities within 2km of residential areas and industry clusters, such as horse breeders and wine producers, and initiated a full review by the Chief Scientist and Engineer "to identify any gaps in the management of risks arising from CSG activities"¹⁵ ¹⁶. *Europe*¹⁷. Processes involving hydraulic fracturing have been banned in France (30/06/11) and Bulgaria (18/01/12), and moratoriums have been imposed in Ireland (12/05/12), Romania (16/05/12) and the Czech Republic (03/09/12) pending detailed scientific analysis and advice on the processes, proof that it won't harm the environment, and *clear rules for*

⁷ "Golden Rules for a Golden Age of Gas. World Energy Outlook: Special Report on Unconventional Gas." (International Energy Agency, 2012), pp28-41 http://www.worldenergyoutlook.org/media/weowebsite/2012/goldenrules/weo2012_goldenrulesreport.pdf.

⁸ M Parnell and J Hamilton, "Potential Public Health Risks Associated with Application P/12/0521/FUL," 2013, https://dl.dropbox.com/u/5187209/Potential%20Public%20Health%20risks%20associated%20with%20Application%20P_12_0521_FUL.pdf.

⁹ "Coalbed Methane" (Halliburton Company, 2007), <http://www.halliburton.com/ps/default.aspx?navid=1603&pageid=3457>.

¹⁰ "Hydraulic Fracturing of Coalseams," in *Coalbed Methane: Principles and Practices* (Halliburton Company, 2008), 357.

¹¹ "DECC239. Airth - Kincardine - Clackmannan. Coalbed Methane Development Plan. Phase 2: Airth Area Pilot Project." (DECC, 1997), <http://frack-off.org.uk/wordpress/wp-content/uploads/2013/02/DECC239.pdf>.

¹² "The Unconventional Hydrocarbon Resources of Britain's Onshore Basins - Coalbed Methane (CBM)" (DECC, 2012), pp24.

https://www.og.decc.gov.uk/UKpromote/onshore_paper/Promote_UK_CBM.pdf.

¹³ "Australia's Victoria State Bans Coal Seam Gas 'Fracking'," *Reuters*, 2012, <http://www.reuters.com/article/2012/08/24/us-australia-csg-victoria-idUSBRE87N06D20120824>.

¹⁴ "Sacred Headwaters Ban on Coalbed Methane Made Permanent," *The Common Sense Canadian*, accessed March 16, 2013, <http://thecanadian.org/hot-links/item/1861-sacred-headwaters-ban-on-coal-bed-methane-extended>.

¹⁵ H Broome, "CSG Company Slams NSW Govt Changes," *Ballina Shire Advocate*, 2013, <http://www.ballinaadvocate.com.au/news/csg-company-slams-nsw-govt-changes/1792996/>.

¹⁶ "Dead in the Water: O'Farrell Buries Coal Seam Gas Plans," *The Sydney Morning Herald*, accessed March 14, 2013,

<http://www.smh.com.au/environment/dead-in-the-water-ofarrell-buries-coal-seam-gas-plans-20130218-2eniw.html>.

¹⁷ Johnny Linehan, "Global List of Fracking Bans and Moratorium," *Keep Tap Water Safe*, 2013, eptapwatersafe.org/global-bans-on-fracking/.

the sector. The International Energy Agency (IEA) also stresses that safe management of CBM extraction “requires action” by national and local government to “set the (new) regulatory framework, promulgate the required principles and provide support through many related activities, e.g. scientific research”. The IEAs ‘Golden Rules’ also offer potent support for our perception of the risks, our proposed policy framework, and our demand for a truly integrated and transparent interrelationship with local communities at “each phase of a development”¹⁸.

Our COMMUNITY MANDATE for a new CBM Policy framework (the original version of which was agreed by consensus in workshops involving a group of local residents and parents): The signatories of this document are in unanimous agreement that the above constitutes unequivocal evidence of ‘suspected risk’ sufficient to necessitate a new policy framework for governing CBM processes. Thus, before we would permit any Proposal to go ahead in Falkirk Local Authority, we demand that governing policy must satisfy the following 5 minimum requirements (we include a small selection of evidence that highlights “suspected risks” not covered adequately, or at all, by current policy and, therefore, not properly considered in the Proposal):

1) It must govern the full breadth of the impacts of unconventional gas extraction, requiring a comprehensive scientific assessment of environmental system factors, and direct and *indirect* risks associated with both surface and *subsurface* processes. Risks not considered in the current application include (but are not limited to); (i) Air contamination from fugitive gas emissions by routine leaking and migration¹⁹; (ii) Risk of watercourse and soil contamination through migration of produced water and drilling fluids²⁰; (iii) Risk of long-term impacts on ground water levels and contamination through dewatering²¹; (iv) Risks of ‘cavitation’, ‘stimulation’, and other processes that involve hydraulic fracturing, or other alterations to hydrogeological structure (irrespective of classification or interpretation²²). Sufficient regulation of these risks necessitates ongoing, independent monitoring of seismic activity to ensure prohibited processes and / or other potentially harmful impacts on subsurface hydrogeology are not in occurrence.

2) It must require the comprehensive auditing and measurement of all contaminants that may be produced directly, or indirectly, by unconventional gas extraction throughout the lifecycle of the operation to establish their potential and cumulative risks to the health of local public and environment; and the implementation of a continuous, transparent monitoring regime to be reviewed every 6 months for novel or emergent risks, and in light of new scientific evidence. Assessment and regulation must encompass both short-term direct impacts of production and the long-term secondary effects of chemical breakdown, reaction, and accumulation following production. For collectively agreed *potential* risks (see 5) below), baseline measures must be obtained for *each* drilling site (to account for local variations in geology and faulting), acceptable levels must be negotiated, and a continuous Company-funded monitoring framework implemented which is capable of immediate automatic shut-down should levels be breached. All related data should be made freely available to Falkirk Council and our Community on an ongoing basis via an elected “Committee” (see 5) below). This audit must include (but is not limited to) a comprehensive analysis of the known and potential chemical constituents of: (i) Drilling Fluid; (ii) Produced Water; (iii) Treated Water; (iv) Emissions from Flares^{23 24}, Vents and Potential Leaks^{25 26}; (v) Fugitive Emissions²⁷; (vi) Other Waste Products (for impacts of i, ii, iii and vi from CBM extraction in Australia see²⁸); together with (vii) A Transparent Risk Assessment and Independent Monitoring of All Technology for Storing, Processing and Transferring Potentially Toxic Substances and Waste; and (viii) Independent and Transparent Co-monitoring of all Waste Discharge and Disposal.

- **Community Notes regarding 1) and 2).** If the above criteria had been considered in the Proposal’s assessment, we believe strongly Dart would not have been able to claim that their operations would have “no significant effect” on Air

¹⁸ Golden Rules for a Golden Age of Gas. World Energy Outlook: Special Report on Unconventional Gas.” (International Energy Agency, 2012), pp43-49 http://www.worldenergyoutlook.org/media/weowebiste/2012/goldenrules/weo2012_goldenrulesreport.pdf.

¹⁹ Douglas R. Tait et al., “Enrichment of Radon and Carbon Dioxide in the Open Atmosphere of an Australian Coal Seam Gas Field,” *Environmental Science & Technology* (February 27, 2013).

²⁰ B Cubby, “Methane Leaking from Coal Seam Gas Field, Testing Shows,” *Sydney Morning Herald (online)*, 2012, <http://www.smh.com.au/environment/climate-change/methane-leaking-from-coal-seam-gas-field-testing-shows-20121114-29c9m.html>.

²¹ *Oil and Gas at Your Door? A Landowner’s Guide to Oil and Gas Development*, 2nd ed. (Oil & Gas Accountability Project, 2005).

²² “The Global Anti-Fracking Movement. What It Wants, How It Operates and What’s Next.” (Control Risks Group Limited, 2012).

²³ “AB 2588 Combustion Emission Factors” (Ventura County Air Pollution Control District, 2001), <http://www.aqmd.gov/prdas/pdf/COMBEM2001.pdf>.

²⁴ Douglas M. Leahey, Katherine Preston, and Mel Strosher, “Theoretical and Observational Assessments of Flare Efficiencies,” *Journal of the Air & Waste Management Association* 51, no. 12 (2001).

²⁵ Andrew Nikiforuk, “Shale Gas: How Often Do Fracked Wells Leak?,” *The Tyee*, 2013, <http://thetyee.ca/News/2013/01/09/Leaky-Fracked-Wells/>.

²⁶ *ARD - Munich - German Report - Concerned Residents, Contaminated Lands (English Sub)*, 2012, http://www.youtube.com/watch?v=bGtqn1eUDRI&feature=youtube_gdata_player.

²⁷ Douglas R Tait et al., “Enrichment of Radon and Carbon Dioxide in the Open Atmosphere of an Australian Coal Seam Gas Field,” *Environmental Science & Technology* (February 27, 2013).

²⁸ *Dr Mariann Lloyd-Smith Speaking About Toxic Risks of CSG at Lismore, NSW, 1 March 2012*, 2012, http://www.youtube.com/watch?v=gz2mq5GYnR0&feature=youtube_gdata_player.

Quality EQ30A, Farmland EQ30 / EQ32.3, the Water Environment EQ32.7 / EQ27, the Wider Ecosystem²⁹ (FSP ENV 3 / FCLP EQ32.5/ EQ24 / EQ25 / EQ28 / Biodiversity Action Plan / Inner Forth Landscape Initiative) or that *“the main potential impacts of the proposed development upon residential amenity would be (only) from visual impact, noise, dust and lighting”* (Planning Statement 3.11).

Natural gas operations have been shown to involve at least 632 chemicals, only 353 of which are currently described in the open scientific literature³⁰. The evidence cited in support of 2) demonstrates meaningful links between CBM processes elsewhere and air contaminants, including HAPs, VOCs, Benzene, Ozone, Sulphur Dioxide, Hydrogen Sulphide and NoX; and ground / water pollutants, including 5-8 tonnes of salt per rig every 10 days, radioactive materials, and BTEX chemicals³¹. Most of these chemicals occur naturally in coal seams, their removal is not guaranteed by current treatment methods³² and some are dangerous below detection levels. *“To date the only information publicly available about the toxins produced by Dart’s operations pertains to measurements of (15 chemicals) in their Treated Produced Water” (to be released into the River Forth). “Of these chemicals, over two thirds are endocrine disrupters, and a third are Group 1 carcinogens”* which have been shown to constitute health risks even at minute concentrations due to their *“far reaching”* effects, particularly *“in the foetus, in infancy, in puberty and in pregnancy”*. Four feature in the ATSDR’s (Agency for Toxic Substances and Disease Registry) top 10 priority list of substances *“which are determined to pose the most significant potential threat to human health due to their known or suspected toxicity”*³³.

Moreover, fugitive methane leaks reported near Denny (about which the Planning Officer has been informed) together with a BP paper which states that the Airth CBM field is *“densely mined and faulted, making migration and leakage a strong possibility”*³⁴, strongly suggest that area’s geological integrity may not be as reliable as Dart’s environmental assessment assumes. All the above evidence considered, it seems reasonable to suppose these processes may *“pose an unacceptable risk to the amenity of communities and the local environment, which cannot be mitigated or eliminated by the use of planning conditions or agreements”* and may contravene the Falkirk Council’s core policy promise to *“identify, protect and enhance the area’s key environmental assets, require new development to conserve these assets, and to attain a consequently higher level of design quality than has hitherto been achieved”* (FCLP Ch 2.23).

3) There should be a legal obligation to provide a *comprehensive* estimate of the Ecological Footprint for the *total unconventional gas production lifecycle*, from exploration to decommission, and from production to end-user. This must include direct and indirect greenhouse emissions and waste products, for which volume, chemical content, and the location and manner of their release, or ultimate disposal, should be subject to periodic assessment and review by the Committee (see 5) below). This would ensure that the application is consonant with National and Local policy, principles and targets related to Sustainability and Zero Waste (FCLP ST18), and that our Community and Falkirk Council adheres to their requisite duty of care for the transboundary environmental impacts of processes originating within our Local Authority. This estimate must include (but need not be limited to) all activities associated with: (i) Exploration; (ii) Construction, Maintenance and Decommission; (iii) Production (Drilling, Processing, Transport and Waste Products)³⁵; (iv) Indirect Contributors (Fugitive Emissions, Leaks, Dewatering and Migration)³⁶; (iv) Storage, Supply and End-usage.

4) It must entail an economic cost / benefit analysis of a Proposal, in relation to an option involving a renewable energy alternative. Material considerations in the analysis must include (but need not be limited to): (i) Benefits: the total estimated value of each option to the Local Authority in the form of direct and indirect employment, tax and business rates, and the provision of resources; and (ii) Costs: the Ecological Footprint (see 3) above), and the potential impact on the attractiveness of the area for new and existing, businesses and residents (after an assessment that fulfils the criteria set out in 1) and 2) above).

²⁹ “Coalbed Methane Extraction: Detailed Study Report” (U.S. Environmental Protection Agency Office of Water, 2009) Section 4, http://water.epa.gov/lawsregs/lawguidance/cwa/304m/upload/cbm_report_2011.pdf.

³⁰ T Colborn, “Chemicals in Natural Gas Operations” (TEDX, 2013), <http://www.endocrinedisruption.com/chemicals.introduction.php>.

³¹ Mariann Lloyd-Smith, “Toxic Chemicals in Unconventional Gas Exploration and Production” (National Toxics Network, 2012), <http://www.ntn.org.au/wp/wp-content/uploads/2013/02/NTN-Toxics-in-UG-Activities-Briefing.pdf>.

³² *Dr Mariann Lloyd-Smith Speaking About Toxic Risks of CSG at Lismore, NSW, 1 March 2012.*

³³ *Ibid.*”

³⁴ M Saunders et al., “NGCAS _ Next Generation Capture and Storage” (Exploration and Production Technology Group - BP Exploration, 2005), <http://www.arkadiansystems.com/wp-content/uploads/2013/03/Next-Gen-Gas-Storage-Airth.pdf>.

³⁵ N.P. Myhrvold and K Caldeira, “Supporting Information for Greenhouse Gases, Climate Change, and the Transition from Coal to Low-Carbon Electricity” (Environmental Research Letters 7, no. 1, 2012), <http://iopscience.iop.org/1748-9326/7/1/014019/media/erl410200suppdata.pdf>.

³⁶ J Tollefson, “Methane Leaks Erode Green Credentials of Natural Gas,” 2013.

- **Community Notes regarding 3) and 4).** Given the choice between the two, there would be strong Community support for the application area being used for the development of renewables (solar, wind, hydro) over gas mining. Whilst we would prefer neither due to the possibility of detrimental impacts on the (visual and aural) landscape, the general consensus is that renewables development has manifold benefits over the current Proposal. It is cheaper³⁷ and has significantly greater consonance with National and Local policy (particularly, the Climate Act 2009³⁸ and FCLP ST20 / ST21). It would not involve novel processes with unknown health risks for public and environment, and could be decommissioned or upgraded easily should superior technologies be developed. Lastly, it would provide a solid basis for long-term energy and employment security with inestimably greater viability than CBM's '20yrs of diminishing returns' model.

Moreover, giving support to the exploitation of a new fossil fuel is morally irresponsible, particularly one that could be a greater accelerator of Climate Change and Ecocide³⁹ (grievous destruction of ecosystems) than coal-fired power once the whole ecological footprint is considered⁴⁰ and that entails no legal obligation to report on greenhouse gas emissions or the manner and destination of toxic waste's ultimate disposal. The International Energy Agency warns that "no more than one-third of proven reserves of fossil fuels can be consumed prior to 2050 if the world is to avoid the 2°C 'tipping' point"⁴¹. Our global temperatures are rising rapidly, with new evidence suggesting they are now the highest the Earth has witnessed in 4000 years⁴² and there has been an alarming increase in the incidence and cost of extreme weather in the UK in recent years⁴³. The author of the 2006 Government-commissioned review on Climate Change now admits he significantly underestimated the risks, and the threat posed to our economy by rising temperatures is "*far, far worse*"⁴⁴. Our environmental systems are breaking down⁴⁵, we know the causes and therefore we have a collective responsibility to pursue mitigating action. We also believe strongly that a Falkirk renewables 'alternative' is possible that could deliver an equivalent energy output to that represented by the gas fields, that would generate almost zero waste over its lifecycle, and that could provide a solid base for our long-term economic prosperity and community sustainability, and true energy independence.

We are also firmly of the opinion that the Proposal's contribution to the local economy has neglected key considerations. We do not feel the non-specified "*number of local employment positions* (direct or indirect)" put forward by Dart (Planning Application 3.40) would be in keeping with the aspirations and character of the area, as this implies primarily short-term or non-skilled work. Once the 3-4 month drilling period for each well is complete, which requires only 12 people on 24hr shift work⁴⁶, Dart state that most of the operations will be unstaffed. This would then, we believe, leave mainly security and transport positions, or servicing a potential 'Boom Town' influx of temporary workers, all of which sources an employment catchment area well beyond the Authority's boundary (Pre-Application Consultation Report 5.23-5.26).

Moreover, having remained in, or moved to, the area for its peace and natural surroundings, we reject Dart's view that operations lasting a generation will "*be seen as minor elements within a wider landscape setting and will integrate with existing natural and / or man-made elements of the landscape*" (EQ22 / EQ32.3 / ENV2 / EQ20 / Dart Planning Statement 3.14). We do not believe that there will be no "*adverse impacts*" of noise⁴⁷, lighting or transport during drilling and operations (EQ32.1 / Dart Planning Statement 3.16 and 3.18). Industrial activities and traffic will compromise our access to the outdoors, our active travel aspirations (EQ29 / ST2), the leisure and tourism opportunities in the area (EP14/ EP15/ EP16), and Falkirk Council's outstanding Green Space initiative⁴⁸ (ENV 1 and 2 /

³⁷ Donald McCubbin and Benjamin K. Sovacool, "The Hidden Factors That Make Wind Energy Cheaper Than Natural Gas in the United States," *The Electricity Journal* 24, no. 9 (November 2011)

³⁸ "Renewables Revolution Aims for 100%," *Scottish Government (Website)*, 2011, <http://www.scotland.gov.uk/News/Releases/2011/05/18093247>.

³⁹ "Ecocide," *Wikipedia, the Free Encyclopedia*, March 11, 2013, <http://en.wikipedia.org/w/index.php?title=Ecocide&oldid=543394857>.

⁴⁰ P Peduzzi and R Harding, "Gas Fracking: Can We Safely Squeeze the Rocks?" (UNEP, 2012), p4,

http://www.grid.unep.ch/products/3_Reports/GEAS_Nov2012_Fracking.pdf.

⁴¹ "World Energy Outlook 2012" (International Energy Agency, 2012), <http://www.iea.org/publications/freepublications/publication/English.pdf>.

⁴² Shaun A. Marcott et al., "A Reconstruction of Regional and Global Temperature for the Past 11,300 Years," *Science* 339, no. 6124 (March 8, 2013): 1198–1201.

⁴³ "UK 'Must Adapt' for Weather Extremes," *BBC*, March 4, 2013, sec. Science & Environment, <http://www.bbc.co.uk/news/science-environment-21651067>.

⁴⁴ H Stewart and L Elliot, "Nicholas Stern: 'I Got It Wrong on Climate Change – It's Far, Far Worse'," *The Guardian*, 2013,

<http://www.guardian.co.uk/environment/2013/jan/27/nicholas-stern-climate-change-davos>.

⁴⁵ "HARDtalk: Fatih Birol - Chief Economist, International Energy Agency," *BBC*, 2013,

http://www.bbc.co.uk/iplayer/episode/b01prkpt/HARDtalk_Fatih_Birol_Chief_Economist_International_Energy_Agency/.

⁴⁶ "FAQs," *Dart Energy in Scotland*, 2012, <http://www.dartenergyscotland.co.uk/coal-bed-methane-process/faq.html>.

⁴⁷ *Oil and Gas at Your Door? A Landowner's Guide to Oil and Gas Development*. 2nd ed. (Oil & Gas Accountability Project, 2005).

⁴⁸ "Falkirk Greenspace Clinches Quality in Planning Award" (Landscape Initiative, 2012),

http://www.landscapeinstitute.org/news/index.php/news_articles/view/falkirk_greenspace_clinches_quality_in_planning_award/.

EQ19 and 20), and new Sustainable Development and Climate Change Action Plan⁴⁹. We also feel strongly that these factors will dissuade anyone who is considering moving to the area. Indeed, the idea that *parts of the site are as close as 20m from numerous residents' homes, and Dart will be drilling less than 1000m beneath many more, is horrifying, particularly, in light of evidence of New South Wales' recent ban "on all (CBM) activity within 2km of residential areas and industry clusters across the state"*⁵⁰.

Upon consideration of these factors and the potential risks (textbook examples of "incompatible uses (FCLP SC7)"), *some residents reluctantly intend to move, while others have already put their houses up for sale.* The loss of community value and trade resulting from a mass exodus and deterred incomers will have knock-on impacts for the local economy far in excess of the non-committal and vague benefits promised by the Proposal. Such dynamics would betray the inspiring promises at the heart of the Falkirk Council Structure Plan, such as to facilitate "a dynamic and competitive economy", "improved quality of life for each community", and "prosperity and quality of life through sustainable development" (FCLP Ch 2.22).

5) It must include unequivocal conditions that enable an ongoing interrelationship of trust and transparency between Company(s), Falkirk Council and our Community, and which protect against the potential for corporate abuse or exploitation.

This must include (but not be limited to): (i) the formation of a Committee which includes stakeholder representatives elected by the Company(s), Falkirk Council, our Community Council, and local residents on a rotating membership. The purpose of the Committee is to regularly meet, review company activities, monitor data and, if required, negotiate actions. They will be responsible for appointing regulators and environmental impact assessors for the Company(s), and managing associated interrelationships. All information reasonably requested by the Committee for decision-making purposes should be made transparent and available by the Company(s), protected by Confidentiality Agreements where necessary; (ii) Full details of reserves in surrounding land, as registered with DECC and SEPA, and Company(s) interest in any likely future extensions to current applications and future adjacent sites; (iii) Clear consequences for failure of Company(s) obligations or responsibilities, and explicit contractual conditions under which their licence may be revoked and operations terminated; (iv) An explicit requirement for *all* new wells and / or new well sites to necessitate new planning applications which give clear details of the well numbers and function; (v) An explicit requirement for all new owners (and sub-contractors / partners) to be bound by the same agreements as past ones, should licences change hands or responsibilities be 'farmed out'; (vi) A clear method statement detailing site working practices, Quality Management Systems under which the Company(s) and their contractors / partners operate, and plans / costs for site restoration; (vii) An independent and transparent assessment of the technological risks associated with the production infrastructure with dependable accident contingencies and clean-up estimates; and (viii) a Bond sufficient to satisfactorily cover reparations in event of company bankruptcy, industrial accidents, or force majeure.

- **Community Note regarding 5).** It is our view that detailed information with respect to (ii) and (vi) above should *already* have been submitted under policy requirements EQ35.5 and 6 (Information from Applicants). Presently, these have been "given no weight" by the applicant because "(the policy) is considered to primarily relate to coal, aggregate, peat, fireclay, and therefore (is) not considered relevant to CBM exploration or development (see Planning Statement 3.42)". It is critically important, therefore, that our new policy framework makes explicit that this condition and others partially, or totally, disclaimed by the applicant (e.g. EQ33, EQ34 and EQ35) apply unequivocally to CBM processes. For example, neither the applicant's planning documents nor Falkirk Council are able to clarify precisely the number of wells covered by the current application (for example, what are the "additional drilling operations at two existing and established well sites"? Dart Planning Statement 2.4), and whether it includes the commercialisation of the other 16 wells currently owned by Dart⁵¹. Considering the potential environmental impact of a single well⁵² we consider such knowledge to be of material importance to any responsible assessment. As well as the dangers discussed above, there is also powerful evidence to demonstrate that substantial hazards associated with the CBM technological infrastructure have been glossed over in the current Proposal, for example, those in relation to the Gas Compression and Water Treatment Station⁵³, well casing⁵⁴ and pipelines⁵⁵. Moreover, independent consultants have recently warned that the

⁴⁹ "Sustainable Development & Climate Change Action Plan 2013-15" (Falkirk Council, 2013), http://www.falkirk.gov.uk/services/development/sustainability/2013/Sustainable_Development_Climate_Change_Action_Plan.pdf.

⁵⁰ "Dead in the Water: O'Farrell Buries Coal Seam Gas Plans," *The Sydney Morning Herald*, accessed March 14, 2013, <http://www.smh.com.au/environment/dead-in-the-water-ofarrell-buries-coal-seam-gas-plans-20130218-2eniw.html>

⁵¹ "Airth Natural Gas Production Project" (Dart Energy Scotland, 2013), <http://www.dartenergyscotland.co.uk/assets/pedl133.html>.

⁵² *Ibid.*

⁵³ *Dallas PA School Compressor Station*, 2011, http://www.youtube.com/watch?v=gW4zSayf9O4&feature=youtube_gdata_player.

⁵⁴ G Palast, "Fracking in Ireland and Being Dependent on Halliburton's Mu," 2012, <http://www.arkadiansystems.com/wp-content/uploads/2013/03/Fracking-in-Ireland-and-Being-Dependent-on-Halliburtons-Mud1.pdf>.

calorific value of gas from PEDL133 may be unlikely to be high enough for the National Grid unless it is blended with higher quality stock. This will raise the cost of their 'cheap gas' and could entail adding up to 100 tonnes of propane a day: a high-risk process, not included in the current planning application and which would require part of the site to be regulated by the Health and Safety Executive as a "major accident hazard"⁵⁶.

We recognise that the novelty and scope of these processes, and their still obscure impacts on the health of public and the environment, present a formidable challenge for SEPA. This is particularly so in a context of Government cutbacks, a public who do not wish to fund regulation out of their own pockets, and a legacy of abuses that continue to slip through the net in the Falkirk Local Authority area⁵⁷ (and which we do not want repeated). We have been made aware, at Dart and SEPA's own admission⁵⁸, that no testing beyond the produced water analyses has yet been conducted in the area, no baseline measures have been set for a range of risks (particularly, those resulting from migration⁵⁹), and also that it would be impossible for SEPA to administer a monitoring regime of the standard required by the Community (relevant to FCLP EP18 Hazards). Frankly, we are appalled that the public and environment of Falkirk Local Authority may have been exposed to significant risks for an 18 year exploratory period without knowledge, consultation, or a monitoring framework sufficient to ensure our safety and provide the data necessary to responsibly assess the current Proposal.

In light of the above, therefore, we recognise, and accept, our own civic responsibility to enact a duty of care in such matters. We demand that meaningful community participation in the regulation of CBM operations be integral to any planning condition. Whilst we make no prejudice with respect to the character and intent of the applicant, we believe there is sufficient evidence from CBM operations elsewhere of an unchecked 'unconventional gas' profit-motive overriding social, economic and environmental concerns^{60 61 62} to merit extreme caution in the management and monitoring of all similar activities occurring within Falkirk Local Authority. Although we appreciate SEPA may not be in possession of the evidence we have gathered here, their recent support of Dart's refusal to release the full field development plan for the current Proposal⁶³ on the basis that it "*prejudices (Dart's) commercial undertaking and economic interest*" can also be viewed as an exemplar of corporate concerns overriding Community entitlement and safety. We requested this under the Freedom of Information Act, it is a legal requirement under FCLP EQ35 and EU law⁶⁴, and our representation makes it clear that this information is critical to judging the application responsibly. In this context of confused values, we refuse to risk judgements – upon which our safety depends – getting distorted by vested interests. Therefore, we will no longer accept mineral workings where EIAs and monitoring, and supply of SEPA's test samples, are overseen by sub-contractors appointed and managed by the Company(s) alone. The dialogue between public, council and company, enabled by the Committee proposed, is a solution that will address all of these issues, and ensure an ongoing positive relationship that strikes the best balance between the interests of all parties.

Yours Sincerely,

..... **IMPORTANT! YOUR SIGNATURE**

..... **IMPORTANT! PRINT YOUR FULL NAME**

⁵⁵ *ARD - Munich - German Report - Concerned Residents, Contaminated Lands (English Sub)*, 2012, http://www.youtube.com/watch?v=bGtqn1eUDRI&feature=youtube_gdata_player.

⁵⁶ "Burning Issue: Poor Gas Quality Could End Scots Drilling Plan | Herald Scotland," accessed April 8, 2013, <http://www.heraldscotland.com/news/home-news/burning-issue-poor-gas-quality-could-end-scots-drilling-plan.20723754>.

⁵⁷ "Dead in the Water: O'Farrell Buries Coal Seam Gas Plans," *The Sydney Morning Herald*, accessed March 14, 2013, <http://www.smh.com.au/environment/dead-in-the-water-ofarrell-buries-coal-seam-gas-plans-20130218-2eniw.html>.

⁵⁸ (S40-00831) *Air Quality Regulations (Breaches) (Grangemouth)*, 2012, http://www.youtube.com/watch?v=5dr4qG3G_6A&feature=youtube_gdata_player.

⁵⁹ M Williams, "Minutes of the First Meeting of Local Residents of Kinnaird Village and The Inches to Discuss Dart Energy's Coalbed Methane Planning Application," 2012, <https://dl.dropbox.com/u/725672/Residents%20meeting%20minutes%202012-11-22%20Final.pdf>.

⁶⁰ C Everitt, "F0183628 Response to Request to SEPA for Information About Baseline Methane Measurements in PEDL133" (SEPA, 2013), http://www.arkadiansystems.com/wp-content/uploads/2013/04/No-Baseline-Measurements_F0183628-Response-EIR.pdf.

⁶¹ S Christopherson and N Rightor, "How Should We Think About the Economic Consequences of Shale Gas Drilling?" (Cornell University, 2011), http://www.greenchoices.cornell.edu/downloads/development/marcellus/Marcellus_SC_NR.pdf.

⁶² Fiona Harvey, Damian Carrington, and Terry Macalister, "Fracking Company Cuadrilla Halts Operations at Lancashire Drilling Site," *The Guardian*, March 13, 2013, sec. Environment, <http://www.guardian.co.uk/environment/2013/mar/13/fracking-cuadrilla-halts-operations-lancashire>.

⁶³ *Senator Larissa Waters on SKY News Talking About CSG*, 2013, http://www.youtube.com/watch?v=lc6g1Z0gJ2U&feature=youtube_gdata_player.

⁶⁴ C Everitt, "Letter in Response to Freedom of Information Request by Mr Attwood" (SEPA, 2013), <http://www.arkadiansystems.com/wp-content/uploads/2013/03/F0183627-Response-EIR.pdf>.

⁶⁵ "Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters" (UNECE, entered into force 2001 1998), <http://ec.europa.eu/environment/aarhus/convention-on-access-to-information-public-participation-in-decision-making-and-access-to-justice-in-environmental-matters>.