
From: Francis Egan [mailto:]
Sent: 01 November 2012 17:04
To: PS John Hayes
Cc: Francis Egan; Lord Browne;
Subject: Letter from Francis Egan, CEO - Cuadrilla Resources Limited

Dear Minister Hayes,

Further to our meeting on Monday, please see the attached letter which will also be sent in hard copy via the post.

Regards,
Francis

Francis Egan
Chief Executive Officer
Cuadrilla Resources Ltd
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Head Office: +44 1543 266444

Francis Egan
Chief Executive Officer
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27/12/2012



CUADRILLA

RESOURCES

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FGE-A-L002/FGE/dmp

1 November 2012

John Hayes MP
Minister of State for Energy
Department of Energy and Climate Change
3 Whitehall Place
London
SW1A 2AW

Dear Minister Hayes

Thank you for the opportunity to meet on 29 October. We appreciated the opportunity to discuss with you and your team the process of exploring for and developing shale gas and the potential growth of this industry in the UK.

You expressed clearly defined goals for shale gas of (i) Ensuring that an effective and efficient Regulatory Framework is in place; (ii) Ensuring that regulations are being implemented and followed properly; (iii) Separating fact from fiction with respect to shale gas; and (iv) Ensuring that there is clarity of oversight in place, given that a number of entities have a stake in the regulatory framework. Cuadrilla is fully supportive of those goals.

You asked me to write with further detail in the following areas:

- 1) What changes have been implemented in Cuadrilla's seismic monitoring and control capabilities to prevent any recurrence of seismic events?
- 2) What changes have been made in Cuadrilla's management systems and processes to guarantee appropriate due diligence in risk identification / management ?
- 3) What is the timetable for a potential development, and what might that development look like, including how many well pads might be required and over what timeframe?
- 4) How does Cuadrilla proposed to manage communication, particularly with local communities to alleviate any community concerns?
- 5) What role can Cuadrilla play in taking the Bowland Shale forward into a Development phase?

As a precursor to answering each of the above, I would like to share with you Cuadrilla's mission statement, because that sets the context for everything that we are about.



Cuadrilla's Mission: To create value for all stakeholders, including the communities where we work, by identifying, securing and responsibly operating exploration opportunities in unconventional hydrocarbons in Europe.

This is a board-approved statement. A key aspect is the role of "all stakeholders, including the communities where we work". Cuadrilla believes that to excel at what we do requires us to combine technical expertise and social expertise into one integrated offering. Our future depends on being excellent in both.

Now let me turn to your specific questions.

- 1) What changes have been implemented in Cuadrilla's seismic monitoring and control capabilities to prevent any recurrence of seismic events?**

Cuadrilla has taken two initiatives to manage seismic risks as we progress our shale exploration work programme in Lancashire. The first of these is to significantly improve our characterisation of the subsurface geology and associated faulting. This enables us to mitigate seismic risks before we drill. To achieve this we completed a 3D seismic mapping of the subsurface. We completed this survey over a 100 km² area and the processing of the survey data acquired has just been completed using state of the art technology. We are still in the process of interpreting this processed data but I can confirm that it has significantly enhanced our capability to "see" into the subsurface geology, map the structure of that geology, including faults, and plan our drilling and hydraulic fracturing programme accordingly to mitigate potential seismic risks.

The second initiative is designed to manage any seismic risk during the process of hydraulic fracturing. In conjunction with industry experts and your team at DECC we have developed a "traffic light" seismic monitoring and mitigation system.

This system consists of three separate seismic monitoring arrays. We are well into the process of installing these at the two well locations in Lancashire that we propose to hydraulically fracture, should DECC give the go ahead to do so. One array is located at ground level and the other two arrays are located in boreholes, in a carefully designed pattern, positioned around each well location. The data recorded by these very sensitive monitors will provide real time detection and recording of tiny "micro-seismic" events in the subsurface as fractures are induced in the shale rock. Should the level of this micro-seismic activity exceed a pre-determined level (set well below the level at which any vibration could be felt at ground level) then the fracturing process can be slowed down (orange light) or if necessary stopped (red light) such that there are no "felt" seismic events at surface.



The concept of a seismic traffic light system itself is not new, having been extensively used for geothermal and other projects worldwide. The traffic light levels set for our potential forthcoming fracturing operation in Lancashire have, however, been set well below levels commonly used worldwide to ensure that we maintain a much larger factor of safety at this exploratory stage.

In addition to mitigating the potential of any felt seismic activity at ground level, these monitoring arrays will enable Cuadrilla to generate a detailed map of the fracture pattern induced in the Shale rock through any hydraulic fracturing activity. This will allow us to verify that the induced fractures remain thousands of feet below the relatively shallow aquifer and that there is no risk of aquifer contamination induced by the fracturing process.

2) What changes have been made in Cuadrilla's management systems and processes to guarantee appropriate due diligence in risk identification / management ?

Cuadrilla has made significant advances in developing and embedding its risk management system. Specific changes that have been made in recent months are as follows:

Organisation & People:

At Board level a Health Safety and Environmental (HSE) Committee has been established by our Board Chairman, Lord Browne and this committee is chaired by Roy Franklin, OBE, a main Board member. This committee meets with senior management before every Board meeting and its remit includes assessing that Cuadrilla management has in place appropriate systems and processes for the management of HSE risks and reporting to the Board on the effectiveness of those.

The Board has also put in place a Technical Committee chaired by Dr. David Jenkins, former Director of Exploration at BP. This committee provides guidance and support to management in the identification, assessment and mitigation of technical risk.

Cuadrilla has strengthened its senior management team by the recruitment of a new CEO, with 28 years upstream oil and gas operations experience, a new Commercial Director with over 30 years relevant industry experience and by the appointment of a senior external secondee into the new senior management role of Government and Public Affairs Director, a role to which a senior external hire is expected to be appointed in the near future.

Cuadrilla has strengthened its Health, Safety and Environmental (HSE) team by the recruitment of a senior Environmental Engineer and two site-based HSE advisors. We are also currently actively recruiting for a senior Drilling Engineer and have entered into a Service Contract with Baker Hughes for the provision of specialist drilling engineering and support services.



At drilling crew level we have provided additional training to our rig crews in their ability to detect and take action on safety and environmental risk. We have introduced a risk identification and reporting programme. The STAR (Stop, Think, Act, Report) programme encourages every worker to think about the risk associated with each activity they undertake and ensure they are completing that task in the safest and most environmentally responsible way. This has proved very popular and empowering for our crews, maintains a healthy focus on doing the job safely and well, and embeds a safety and environment first culture.

Systems & Processes:

Cuadrilla has updated its Health & Safety and Environment Policies (copies attached) and both have been reviewed and approved by the Board.

To support and give effect to our Policies, Cuadrilla has put in place a risk management framework that follows the established "Plan, Do, Monitor, Review" management cycle. The management framework documents Cuadrilla's commitments in respect of key risk management processes such as Leadership, Risk Evaluation, Risk Control, Risk Monitoring, Emergency Preparedness and Audit & Review.

In addition we have completed a self-assessment against the recommendations of the Royal Society and Royal Academy of Engineering's July 2012 Report into Hydraulic Fracturing. This report concluded that "The health, safety and environmental risks associated with hydraulic fracturing as a means to extract shale gas can be managed effectively in the UK as long as operational best practices are implemented and enforced through regulation."

We have shared our self-assessment with senior officials from DECC and have worked with those officials to demonstrate that Cuadrilla's operations will be fully compliant with all of the Royal Society / Royal Academy of Engineering's recommendations should hydraulic fracturing be permitted to recommence. This work has included the implementation of further measures such as: (i) installation of ground gas monitoring stations at all our well sites, to establish baseline levels of methane (if any) in the groundwater and track and record those levels as drilling and/or fracturing progresses, (ii) the initiation of further Environmental Risk Assessments covering proposed hydraulic fracturing activities (with input and guidance from environmental experts at Cranfield University who have also advised the Government on best practice for conducting these assessments), (iii) putting in place additional financial security to address any concerns about well abandonment commitments, (iv) enhancing the role of the independent Well Examiner to include well environmental assessment in addition to well integrity assessment and ensuring that the Well Examiner will be at site to monitor and record activities at key stages of drilling and completing the well and (v) the afore-mentioned seismic monitoring and traffic light measures

The entire management team has also been trained in the STAR programme and regularly participates in risk management / training exercises, one of which is scheduled in the next two weeks. Individuals also participate in external risk identification and management training.

3) **What is the timetable for a potential development, and what might it look like, including how many well pads might be required and over what timeframe?**

The go-forward timetable depends on (1) technical and geological factors, and (2) how the socio-political factors encourage or discourage investment.

The Bowland Shale in Lancashire is a remarkable formation, unusual in its thickness. Whereas in the US the shale is measured in hundreds of feet, here we have a formation that is 3,000 feet thick, up to 5,000 feet in places. This implies that the Shale in Lancashire might enjoy an unusually efficient development pathway.

However we have to caveat this. While there is very large quantity of gas in place, all shale fields have idiosyncrasies. No industry can develop without fundamental data about the rock formation, and the experience and data gained by actually drilling and fracturing. We need more data and experience. Without this any long-term development projection is incomplete.

Our forward plan is predicated therefore on three distinct stages: (i) Exploration, (ii) Pilot Development Pad(s) and (iii) Full Field Development Pads. Taking each stage in turn:

- (i) **Exploration:** We are currently in this stage, having drilled three exploration wells, in the process of drilling a fourth well (which will include the first horizontal well drilled in the Shale), completed a 3D seismic survey of the sub-surface geology and partially fractured and flow-tested one well before fracturing was suspended. We have, we believe, already demonstrated that there is a very large quantity of gas contained in the Bowland Shale.

Producing gas from Shale however is critically dependent on the total volume of surface area that can be opened by the tiny (grain-of-sand wide) fractures created by hydraulic fracturing to allow the gas to flow from its adsorbed state in the rock. Developing these flow-paths in the Shale is the sole purpose of fracturing. We can use our micro-seismic array, discussed above, to measure the size and effectiveness of the flow paths created, and we can also get a sense of this from the water injection rate and volume whilst fracturing.

The initial production rate of gas (IP) from a well is a function of the flow patterns created by fracturing and the number of fracture stages in any given well. Establishing the IP rate is very important to any development plan. Over time this initial flow rate will decline, relatively quickly in the first one to two years of production, before stabilising for potentially several decades of "steady state" relatively low-rate production.

Establishing the shape of this production decline curve, particularly in the first two year period, is equally important to any development plan.

The key next steps in the Exploration stage for Cuadrilla therefore are to complete our on-going fourth exploration well (including the drilling of a horizontal leg) and to fracture and flow test that horizontal well and one other already drilled vertical well. The data gained from this activity set will enable us to make initial estimates of what IP rate might be expected from the Bowland Shale. Having established the IP rate(s) we would then propose, subject to National and Local Government consent and necessary regulatory approvals, to flow these two wells into the national gas system for a period of 18 months to 2 years to establish the shape of the initial production decline curve.

With Government support we believe that we could have established initial flow rates by mid-2013 and be establishing production decline curves over the course of 2014.

- (ii) **Pilot Development Pad(s)**: The next phase of Development would entail the construction of most likely one, at most two, Development Pads. A "Well Pad" in industry terminology is a collection of wells, 6 to 10, clustered on one football pitch sized site. One drilling rig is allocated to the site and it drills each well in turn. Multiple horizontal wells are drilled from each vertical well. After each well has been drilled it is hydraulically fractured and flowed.

The purpose of a Pilot Development Pad is to scale up from the initial Exploration well and demonstrate that a well pad can be successfully completed from a technical and financial perspective – and equally importantly, from a community perspective.

Again with local and national and community support we could envision first production from an initial Pilot Development Pad in 2015.

- (iii) **Full Field Development**: This phase entails scaling up from the initial Pilot Development Pad and single rig operation to a number of rigs working simultaneously on a number of Development Pads. Development of a Shale Gas reservoir is different in this respect from so-called Conventional oil and gas fields where most of the development takes place up front ahead of any production. In Shale, development and production progress hand-in-hand throughout the field life, and the nature of development is thus much more incremental.



We believe the nature of this thick shale will allow the stacking of lateral wells at various depths. This means that for any one vertical well location there will be multiple horizontal wells (each approximately 8" in diameter) radiating from the vertical well like the tines of a fork, approximately a mile beneath the surface. Each horizontal well is several thousand feet long. For each individual well pad therefore, with 10 vertical wells, and approx. 8 or more horizontal legs per vertical well, we can envisage in effect 80 or more sub-surface wells. This minimises the surface impact. Once the rig has departed the Pad site, the ten surface wellheads (each a collection of valves about the size of a post-box) are appropriately shielded and landscaped, and should have very low visual impact. We see these pads as being tailored to meet the requirements of the local community. Because the pad remains for the duration of well production, the aesthetics can be tailored to suit the environment.

Whilst it is too early to assess ultimate numbers of well pads, our scoping studies envisage building in steps over a period of 8 to 10 years up to approximately 10 rigs working simultaneously on 10 well pads across the entire licence area.

This brings me to the second, potentially more important constraint -- socio-political challenges.

You will be aware that there is already a very successful onshore oil and gas business in the UK that has been co-existing in harmony with local communities for more than 60 years. Onshore well pads, development drilling – including horizontal laterals – are well established.

However there is something of a myth of great opposition to shale gas development. We recently completed qualitative and quantitative research. Across Lancashire, when asked about "development of natural gas from shale" 23% oppose, 35% support, and the balance is undecided or needs more information. There is a good deal of misunderstanding and some misinformation, and we take great pains to provide the facts to all parties, including an appreciation of the risks, their potential severity, and how they are being managed.

One finding in research with both Lancastrians and at the national level is a noticeable lack of discussion about energy. Ordinary people polled demonstrate a lack of awareness of the importance of natural gas, and certainly of the UK's current and future import dependency. What they do understand are rising energy costs.

Unless there is both a felt need to produce domestic gas (mitigate import dependence, keep costs down, enable renewables) and a picture of local benefit, then there is insufficient quid pro quo, and development will be resisted. After all, what's in it for the local community?



This brings us to the development process itself. There is a certain inconvenience that the local population bears in hosting development of this industry or indeed any other industry. As such there needs to be a local quid pro quo – benefits in return. There are of course jobs, directly and indirectly in products and the associated supply chain. We consider that there should also be financial benefits in the form of a share of the tax take distributed at a local level. We would be happy to discuss our ideas in this regard with national and local government.

In our opinion, without a coordinated national and local government position on gas, and a regulatory regime that is seen to be coherent and strong, development will be a slow process. People need to hear the message that (1) the UK needs to develop sources of domestic gas to reduce import dependency, keep cost down, and as an enabler for renewable energy; (2) that a coherent, joined-up regulatory regime, working with experienced and committed Operators is protecting communities from environmental and safety risks as the industry moves from exploration to development, and (3) that there is a quid pro quo of benefits to the community for hosting development, including both financial and project benefits, and the community's rights to tailor the development footprint, functionality and aesthetic fit.

4) How does Cuadrilla proposed to manage communication, particularly with local communities to alleviate any community concerns?

Cuadrilla adopts an "Engagement" model, which means just that. The community is consulted before, during, and after the planning application process, and there is communication before, during, and after operations to inform and educate, and to promote conversation about the issues and methods of addressing them.

We have participated in hundreds of meetings, small and large. We have mailed letters, distributed pamphlets to the home, run advertising, and conducted research. We have hosted hundreds of individuals, many in groups, on our sites. Our management team routinely spends two nights/ week participating in meetings or giving presentations. We have answered hundreds of individual questions that come into our website or our information line.

Transparency and openness are key aspects of the corporate culture we have created. We believe there are only two kinds of information that we don't make public. One is personal – the travel and personal details of Cuadrilla people. The other is contractual -- matters between Cuadrilla and suppliers. All other aspects of our operation are transparent and available to stakeholders. We have always published the contents of our (very simple and non-toxic) fracturing fluids, despite the mis-information that we don't publish this.



Cuadrilla is a believer in third party communications that improve the quality of public discourse. We have sponsored independent studies from reliable entities that can contribute to public knowledge about shale gas (Pöyry and Regeneris are two that have become public).

Going forward, our plans are to engage both industry and the public in a discussion of what development looks like. This will be done through our own and coordinated efforts by 3rd parties.

5) **What role can Cuadrilla play in taking the Bowland Shale forward into a Development phase?**

At Cuadrilla we say we are on two journeys. One is the geological and technical. The other is the socio-political. It is our aspiration that the Cuadrilla brand will be renowned for doing both well.

We know that we are unlikely to be the only company to develop shale gas in the UK, but we want to always be the most experienced and trusted. Experience is something we can promise and confidently deliver. Trust has to be earned. Earned trust has to be placed not only in Cuadrilla, but also in the regulatory regime that is a precursor to the formation of an industry that will have productive effect on the UK's future.

We have the capacity, capability and willingness to take this forward in a safe, sensible and transparent fashion provided the Government wishes to do so.

Yours sincerely,

X
Francis Egan
Chief Executive Officer

X
Head Office: +44 1543 266444

CC: Lord Browne of Madingley – Chairman, Cuadrilla Resources Holdings Limited

HEALTH AND SAFETY POLICY

CUADRILLA RESOURCES LIMITED is committed to providing and maintaining a healthy, safe and injury free working environment for its employees, its contractors and all others engaged in, or impacted by, its operations.

Cuadrilla will pursue this commitment by:

- Ensuring that the health and safety risks associated with our operations are identified, assessed and effectively managed to ensure safe, injury free outcomes
- Meeting or exceeding all applicable Health & Safety regulations
- Responsibly using and storing any chemicals approved for use in our operations and ensuring that the use of such chemicals poses no material health risk to our staff, contractors or the local community
- Maintaining our equipment and plant so that it is in excellent running order
- Providing appropriate resources to ensure that our work activities are planned and discharged in a professional and safe manner
- Working only with contractors and suppliers who share our health & safety commitment and adhere to our risk management framework and procedures
- Encouraging two way communication and engagement with employees, contractors, suppliers, visitors and with members of the local community
- Regularly reviewing and seeking to improve the effectiveness of our Health, Safety & Environmental management system
- Maintaining an appropriate readiness to respond effectively to any Health and Safety related incident

Francis Egan
Chief Executive Officer
CUADRILLA RESOURCES LIMITED

Date of issue: 19 October 2012

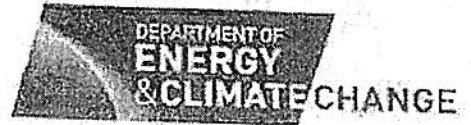
ENVIRONMENT POLICY

CUADRILLA RESOURCES LIMITED is committed to conducting its operations in an environmentally responsible manner and to protecting the interests of the communities in which we operate. We will pursue this commitment by:

- Choosing well sites to minimise the impact on members of the local community, heritage, ecology and biodiversity
- Providing appropriate resources to ensure that our operations are planned and discharged in an environmentally responsible manner
- Ensuring that environmental risks associated with all stages of our operations are identified, assessed and effectively managed to prevent pollution
- Designing, constructing and testing the integrity of our wells such that underground gas bearing strata are fully isolated from aquifers and that there are no unplanned escapes of gas to the surface
- Ensuring that hydraulic fractures do not allow gas to migrate into aquifers
- Disclosing any chemical additives approved by the Regulator for use in our fracturing water, and minimising the use of such additives
- Reducing water usage by continually improving operational efficiency and reusing or recycling water where practicable
- Storing and disposing of all produced and waste water and any other waste in a safe and environmentally responsible fashion
- Measuring and disclosing data on water use, on the volumes and characteristics of waste water and on methane emissions
- Taking steps to minimise any emissions of methane during the entire productive life of the well
- Meeting or exceeding all relevant environmental regulations
- Using best industry practice to plug wells at the end of their productive lives and continuing to monitor for any methane leakage for an appropriate period thereafter
- Working only with contractors and suppliers who share our environmental commitment and adhere to our risk management framework and procedures
- Reducing, as far as reasonably practical, energy and fuel consumption in our operations
- Regularly reviewing and seeking to improve the effectiveness of our Environmental management system
- Maintaining an appropriate readiness to respond to any environmental incident

Francis Egan
Chief Executive Officer
CUADRILLA RESOURCES LIMITED

Date of issue: 19 October 2012



John Hayes MP

Minister of State

Department of Energy & Climate Change

3 Whitehall Place

London

SW1A 2AW

Mr John Browne
Cuadrilla Resources
Cuadrilla House
Stowe Court, Stowe Street
Lichfield
Staffordshire
WS13 6AQ

Our ref: INV2012/15279/IM

4 October 2012

Dear John,

Thank you for your email dated 27 September, inviting me to the launch of an independent report by the University of Central Lancashire, on 23 November.

Unfortunately, I am afraid that I am unable to accept your kind invitation, as my diary is heavily committed on that day.

However, I will keep a visit in mind for when I am next in the region, and I would ask that you contact my Head of Ministerial Outreach, in order to arrange this.

Yours sincerely,

JOHN HAYES

CUADRILLA RESOURCES

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FGE-H-L003/FGE/dmp

8 October 2012

John Hayes MP
Department of Energy and Climate Change
3 Whitehall Place
London
SW1A 2AW

Dear Mr. Hayes

Invitation to the launch of the University of Central Lancashire report 'Engineering: Skills for the Future'

I am writing to invite you formally to participate in the launch of a new piece of academic research, undertaken by the University of Lancashire and led by Professor Joe Howe, and commissioned by Cuadrilla Resources. The report is being launched at the University of Central Lancashire on the morning of the 23rd November. This piece is intended to inform Cuadrilla and its partners about how best to maximise the skills and supply footprint of potential shale gas extraction for the local people in Lancashire. Given your long-standing interest in the skills agenda, and of course your current portfolio as energy minister, I thought that this may be of particular significance for you.

The research will carry out labour skills and supply mapping that estimates the potential for the local West Lancashire economy as a result of potential shale gas extraction. It is very important for Cuadrilla to understand how best to provide sufficient skilled employees from the local area, supporting local people from the point of education to the point of employment. As part of the process a 'skills pipeline' is being developed that will document the current skills footprint and match this up to expected demand. The University of Central Lancashire has conducted in-depth and independent research in order to present an accurate and impartial analysis and conclusions.

Simultaneously, I would also like to invite you to visit the Cuadrilla drill sites in Lancashire. At Cuadrilla, we are very proud of the engineering feats that have been undertaken in Lancashire, all of which have been undertaken with Cuadrilla machinery by Cuadrilla staff. It would be great to have the opportunity to show you the drill sites first hand.



I know that our Chairman, Lord John Browne, has previously been in contact with regards to the above, but please find a more detailed suggested agenda below:

10:00 – arrive

10:30 – UCLan report launch

12:00 – lunch with Lord Browne

13:00 – visit to the Cuadrilla drill pads with full tour provided from engineers

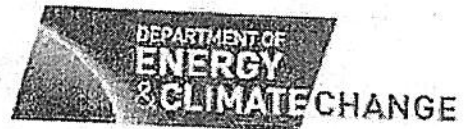
16:00 - finish

My office will be in touch very shortly in the hope of securing your attendance or please do RSVP to me at . I understand that your diary will be congested, but I do very much hope to meet you on the day.

Yours sincerely,

Francis Egan
Chief Executive Officer

Head Office: +44 1543 266444



John Hayes MP

Minister of State

Department of Energy & Climate Change

3 Whitehall Place

London

SW1A 2AW

Our ref: PO2012/14940/JH

Your ref: FGE-H-L002/FGE/dmp

Francis Egan
Managing Director
Cuadrilla Resources Ltd
Cuadrilla House
Stowe Court, Stowe Street
Lichfield
WS13 6AQ

2nd October 2012

Dear Mr Egan,

Thank you for your letter dated 19 September, introducing me to the work of Cuadrilla Resources Ltd and inviting me to a meeting to discuss matters relating to my portfolio. Thank you also for your kind message of congratulations following my appointment as Minister of State for the Department of Energy and Climate Change.

I am delighted to be joining the department at such a crucial time delivering secure, affordable energy for all. I am looking forward to working on these challenges.

I would be pleased to accept your kind invitation, subject to urgent parliamentary business. Please contact my Diary Manager; make
the necessary arrangements. Please quote the above reference number when doing so. X

Yours sincerely,

JOHN HAYES

From:
Sent: 27 September 2012 12:44
To: PS John Hayes
Cc: Maine, Simon
Subject: Cuadrilla Resources

On Behalf Of Browne, John

Dear John

May I congratulate you on your new role.

I am writing to you in my capacity as Chairman of Cuadrilla Resources to alert you to the launch of an independent report by the University of Central Lancashire. That report which seeks to identify the skills needed to ensure that local people can maximise the potentially significant employment benefits of shale gas extraction. As someone for whom skills have been a lifelong interest, we would very much like you to attend the launch. If you were available, we would be very keen for you to visit at the same time the neighbouring Cuadrilla drill sites.

This will be taking place on the 23 November, which I am aware might be difficult as it is a constituency day. I hope you can consider this invitation. A full proposed itinerary for the day and formal engagement request will be sent from Cuadrilla executives in due course.

If you have any further questions at this stage please contact

Yours

John Browne

CONFIDENTIALITY NOTICE:

Riverstone Europe LLP is authorised and regulated by the Financial Services Authority.

27/12/2012

CUADRILLA

RESOURCES

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FGE-H-L002/FGE/dmp

19 September 2012

John Hayes MP
Department of Energy and Climate Change
3 Whitehall Place
London
SW1A 2AW

21 SEP 2012

Dear Mr Hayes

Meeting request: Cuadrilla Resources

I am writing to congratulate you in your new role as Minister of State for Energy at the Department of Energy and Climate Change and to take this opportunity to introduce you to Cuadrilla Resources.

As you may already know Cuadrilla is a UK company based in Staffordshire whose focus is on exploring for, discovering and recovering natural hydrocarbon resources from tight sandstone and shale. We have, as you may be aware, discovered significant quantities of natural gas in the Bowland shale in Lancashire.

Currently we are awaiting a decision from the Department of Energy and Climate Change on whether we can continue our planned exploration programme, including demonstrating that hydraulic fracturing of the Bowland shale can be executed in a safe, environmentally responsible and effective manner.

Cuadrilla strongly believes that the exploration for and development and production of shale gas in the UK can be conducted in a safe and environmentally responsible fashion. We are committed to achieving this in our Lancashire licence area by setting and attaining industry leading standards in all of our operations. We have already been working co-operatively with your Department and very much hope that we can continue this under your leadership.

I myself am relatively new in post as CEO of Cuadrilla Resources and would welcome the opportunity to meet with you to discuss how best we can work together in the future and answer any questions you may have regarding Cuadrilla's operating practices and exploration and development plans.



My office will be in touch with you shortly in the hope of setting up a meeting, or please do RSVP to

I very much look forward to hearing from you.

Yours sincerely,

Francis Egan ✓
Chief Executive Officer

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Cuadrilla Resources Limited
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Mr Charles Hendry, MP
Minister for State
Department of Energy and Climate Change
3 Whitehall Place
London
SW1A 2AW

25 May 2012

A handwritten signature in dark ink, appearing to read "David Charles".

Thank you for your letter dated 11 May 2012. I look forward to meeting you on 2 July.

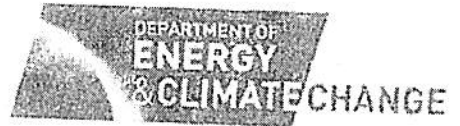
In the meantime I wanted to inform you of several steps we have already taken to enhance Cuadrilla's communications with DECC, as well as its general strength as operator:

- The Board has constituted a new Health and Safety Committee under the chairmanship of Roy Franklin. This committee will have responsibility to oversee the company's health and safety performance and will receive instant reports of any material incidents as they arise, and ensure they are appropriately reviewed and communicated.
- The Board has undertaken to refresh and augment the current management team, including the appointment of a new CEO and the creation of a number of new senior roles such as a Director of Communications. This transition will be complete before the end of the summer.
- The company has established and communicated a clear policy that operational incidents judged to have a potentially serious impact on health and safety or infrastructure integrity will be communicated to DECC immediately, before testing whether such matters are indeed germane. This is as acknowledged by CEO Mark Miller in a letter to *[redacted]* on March 16.

I hope these steps demonstrate the Board's continuing commitment to safe operations. I look forward to hearing your views on these at our meeting.

A handwritten signature in dark ink, appearing to read "The Lord Browne of Madingley".

The Lord Browne of Madingley
Chairman of the Board



Charles Hendry MP

Minister of State

Department of Energy & Climate Change

3 Whitehall Place

London

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www.decc.gov.uk

Lord Browne of Madingly, FRS, FREng
Chairman of the Board
Cuadrilla Resources Ltd.
Cuadrilla House
Stowe Court, Stowe Street
Lichfield
Staffs, WS13 6AQ

11 May 2012

Dear John,

I am writing to you in your capacity as the current Chairman of the Board of Cuadrilla Resources.

You will be aware that my Department is concerned that Cuadrilla failed to recognise the significance of the casing deformation experienced in the earth tremor triggered by fracking operations on 1 April 2011. So much so, that the company did not report it to my officials in contemporary discussions as to the possible cause of the tremor and the possibility that it might be linked to the fracking. In the light of Cuadrilla's responses to the Department's subsequent inquiries, I have formed the view that this failure discloses weaknesses in Cuadrilla's performance as a licensee, which need to be addressed.

I would like to discuss these matters with you, your Chief Executive Officer, and the Board representative of AJ Lucas, as soon as may be convenient, to hear what improvements you might propose to address these concerns, and how these might best be implemented.

Perhaps your office could contact my diary manager,
arrange a suitable date.

to

I very much hope we can resolve this in the
near future.

Yours sincerely,
Charles Hendry

CHARLES HENDRY

CUADRILLA

CUADRILLA RESOURCES LIMITED

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Lord Marland
Parliamentary under Secretary of State
Department of Energy & Climate Change
3 Whitehall Place
London SW1A 2AW

9 February 2012

Dear Minister,

EXPLORATORY SHALE GAS DRILLING IN LANCASHIRE

I am writing to request a meeting to brief you in person on the nationally significant on-shore shale gas exploration underway in Lancashire in order to ensure you are fully appraised of our future exploration plans in view of your role in answering for the department on oil and gas matters in the House of Lords. We are approaching a key decision on the resumption of hydraulic fracturing which is likely to attract considerable interest in both Houses of Parliament.

As you will be aware, in September, we announced a gas in place figure of 200 trillion cubic feet based on our initial core samples and surveys from the Bowland Basin. Recoverable reserves will be a proportion of this figure but the scale of this find has the potential to contribute significantly to the UK's domestic energy security, reduce the present reliance on imported natural gas, lower the cost and price volatility of energy to consumers and reduce greenhouse gas emissions when compared to current coal-fired base load generating capacity.

By way of background, Cuadrilla Resources is a UK based company founded in 2008 by oil and gas industry practitioners with decades of exploration experience. We have established industry-leading best practice for the setting up and operation of on-shore sites which will ensure that issues which have arisen in a small number of cases in the United States do not occur here.

Cuadrilla has previously provided detailed written and oral evidence to the House of Commons Energy and Climate Change select committee which explained how we can guarantee the safe operation of our activities without presenting any risk to groundwater. The select committee were, following a site visit to our Lancashire operations and a separate fact finding tour to the US, fully satisfied with the robustness of our operating procedures. The select committee's official report concluded that shale gas exploration posed little environmental threat to the UK under the current regulatory framework.

In addition, we were pleased that energy minister Charles Hendry MP visited our drilling and hydraulic fracturing locations in March 2011, together with senior representatives of the Health & Safety Executive and the Environment Agency, to view the operations first hand. The Environment Agency and HSE have since been frequent visitors for both announced and unannounced site inspections.

In order to prove the scale of the commercially recoverable reserves held in Lancashire we now need to complete our programme of hydraulic fracturing which

has been on-hold since two minor seismic events took place in April and May last year. Extensive efforts have been undertaken to thoroughly investigate the seismic events which took place on 1 April and 27 May 2011 – now ten and eight months ago respectively.

It is our view that these technical findings can now only be validated by taking the recommended procedures to the field for testing. As we have indicated to your officials, it is our intention to restart hydraulic fracturing operations in a cautious manner, using revised job procedures and a very safe and conservative traffic light system. Our proposals for the resumption of hydraulic fracturing and associated seismic monitoring are designed for the present phase of operations, namely to establish the commercial viability of the natural gas resource. During this phase we will learn much more about how these proposals work in practice and we expect to revise them accordingly.

The studies conducted so far also suggest that seismicity will be negligible and can be carefully controlled. That conclusion has recently been publicly echoed by the British Geological Survey and Keele University. We are confident that we can test our new fracture design and traffic light system while maintaining an environment that is safe for the local residents and their property.

I hope it will be possible to brief you personally on this important matter and answer directly any questions you may have so that you can be fully aware of the nature of our operations.

For information I have also written in similar terms to the new Secretary of State, Edward Davey MP, to welcome him to his post and offer an introductory briefing, and have updated Charles Hendry MP as the Minister of State for energy in writing earlier this week on the detail of our proposed timetable for our Lancashire operations this year and next year.

Yours sincerely,

Mark Miller
Chief Executive

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THE ENERGY COMPANY

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Mr Charles Hendry
Minister of State for Energy
Department of Energy & Climate Change
3 Whitehall Place
London SW1A 2AW

8 February 2012

Dear Minister,

RESUMPTION OF HYDRAULIC FRACTURING IN LANCASHIRE

I am writing to update you on the extensive efforts which we have undertaken to thoroughly investigate the seismic events which took place on 1 April and 27 May 2011, now some ten and eight months ago respectively. Throughout this time we have been working extensively with your officials who have no doubt been keeping you fully informed on the progress with the substantial material we have submitted.

If we are given clearance to proceed, it is our intention to restart hydraulic fracturing operations in a cautious manner, using revised job procedures and a very safe and conservative traffic light system. Our proposals are designed for the present phase of operations, namely to establish the commercial viability of the natural gas resource. During this phase we will learn much more about how these proposals work in practice and we expect to revise them accordingly.

The studies conducted so far also suggest that seismicity will be negligible and can be carefully controlled. That conclusion has recently been publicly echoed by the British Geological Survey and Keele University. We are confident that we can test our new fracture design and traffic light system while maintaining an environment that is safe for the local residents and their property.

For information, the provisional timetable we have shared with your officials is as follows:

- Q1 2012 Formal end of fracturing suspension (date to be confirmed)
- March 2012 Community engagement and other preparations for resumption
- April 2012 Start fracturing and testing of Grange Hill and Beconsall wells
- May 2012 Commence drilling and testing of three additional wells
- Dec 2012 Third-party estimate of recoverable reserves
- Q1 2013 Submission of long-term production test plan to DECC
- Q1 2013 Initiate long-term test production
- Q4 2013 Submission of field development plan to DECC

Should there be any remaining issues on which you require any clarification I would be pleased to personally discuss these with you.

Yours sincerely,

Mark Miller
Chief Executive

