

Health and Safety Executive Senior Management Team Paper SMT/09/35			
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HEALTH AND SAFETY EXECUTIVE
Senior Management Team
Emerging Energy Technologies Programme
A Paper by Rosemary Whitbread
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Cleared by Kevin Myers on 27 March 2009

Issue

1. This paper provides the SMT with an introduction to the newly established Emerging Energy Technologies (EET) Programme and the scope of work to be completed within Phase 1.

Timing

2. Routine.

Recommendation

3. For information.

Background

4. Tackling the two long term energy challenges facing the UK (combating climate change by reducing carbon dioxide emissions; and ensuring secure, clean and affordable energy) is a key Government priority and this is driving the emerging energy technology agenda.
5. HSE is facing increasing demands to give advice or make interventions on emerging energy technology issues which inevitably affects delivery on other areas of planned work. The EET Programme has been established to bring together ongoing work and any future projects to address the impact of the non-nuclear aspects of the Government's Energy Policy and deliver:
 - evidence based organisational strategy for the emerging energy technologies and
 - guidance to enable HSE to plan and deliver against this strategy.
6. HSE published an assessment of the health and safety risks arising from recent and future potential energy developments in June 2006¹. The report focused on Government proposals for the nuclear industry and provided an expert and authoritative overview of the five non nuclear emerging energy sectors² and a

¹ HSE's Expert Report was produced at the request of the Energy Minister, Malcolm Wicks MP in response to the Government's Energy Review. <http://www.hse.gov.uk/consult/condocs/energyreview.htm>

² 1) Carbon Capture and Storage; 2) Natural Gas Imports and Storage; 3) Renewables (wind, wave, tidal and biomass); 4) Distributed Generation (including the hydrogen economy); and 5) Cleaner Coal Technology.

summary of further work required by HSE to meet the challenges presented by the emerging energy economy. The conclusions in the non nuclear parts of the report form a convenient base line for the work of the EET Programme.

7. The SMT were most recently updated on the non nuclear energy agenda in May 2008 in a below the line paper clearing the Energy Bill Misc Paper for the HSE Board (SMT/08/12 Energy Bill 2008: The impact on HSE's business).
8. In January 2009 the HSE Board were given an oral presentation on the Emerging Energy Technologies Programme. The presentation and supporting background paper (HSE/09/15) were cleared by Kevin Myers on behalf of the SMT.

Argument

9. The HSE Board gave the following key messages in response to the oral presentation:
 - an endorsement of the programme vision (The vision is “to establish HSE as a responsible enabling regulator working in the public interest to ensure that safety issues are adequately addressed during the introduction and proliferation of the new energy technologies”);
 - to ensure that HSE understands and remains aligned with the Government's plans for promoting the new energy technologies.
 - that HSE should work in partnership with those best placed to fill the knowledge gaps stressing that those creating and benefiting from the risks had the primary responsibility to carry out necessary research.
 - to establish, at an early stage, whether HSE had the necessary resources and skills mix to regulate these new technologies.
10. Taking account of this feedback from the Board, the programme will have two phases. Phase I will produce a situation report on the current state of play of the different technology sectors, the domestic and key international contexts that drive the agenda, the priorities for action by industry and the regulator, and estimated timescales and resource requirements. Phase II will deliver the required organisational strategy and necessary guidance to fulfil the programme vision, informed by the Phase I work. Key details of structure of the EET Programme and the desired outcomes are presented in Annex 1.

HSE's Strategy

11. There is a clear line of sight between the EET Programme and HSE's new strategy; HSE has a role in alerting duty holders to new and emerging risks whilst they in turn have a responsibility to understand and manage those risks. Alongside 'avoiding catastrophe', 'taking a wider perspective' is central to the work of the programme if the UK is to secure the goal of safe, clean, sustainable and affordable energy. Keeping health and safety issues off the 'critical path' for plans to deploy new energy technologies is a key success criterion.

Developing a Knowledge Strategy

12. There is a pressing need for HSE to develop a plan for acquiring sufficient knowledge to be an effective regulator and policy negotiator and to otherwise secure HSE's and partner organisations positive influence on the EET

community. These new areas of energy technology have attracted significant interest within the science community. Academic research and numerous joint industry projects are beginning to flourish. Leading research bodies are making significant grants available. HSE's own major hazard and corporate science plan identifies c. £1m of potential expenditure on related research projects in 2009/10 although this is currently being scrutinised for savings prior to a final firm bid for extra/intramural funding. The total UK related expenditure on research relating to carbon capture and storage alone is in the order of £40m.³

13. The EET Programme will establish where further research is required by clearly defining the necessary outcomes and determining what information is already available. A high level science committee, chaired by Patrick McDonald and including heavyweight representatives from the science community will enable HSE to effectively influence the broader research agenda and provide guidance on the nature and extent of HSE's participation in any research where there is a specific benefit to us.

Consultation

14. HID (including Finance), FOD, Policy Group, and RPD (via the EET Programme Board). DCE and CSAG.

Presentation

15. The EET Programme is developing a robust communication plan in line with HSE's overall strategy.
16. The emerging energy agenda is attracting regular media interest. The work of the EET Programme provides significant scope to enhance HSE's corporate profile and support its recently launched strategy. There are also reputational risks which will need alert and careful management, for example to avoid getting entangled with campaigners against aspects of the energy agenda⁴ or in appearing to impede projects⁵ unnecessarily.
17. The Phase 1 work will need to operate in parallel with HSE operational and policy work undertaken in response to urgent pressures from new projects in the emerging non nuclear energy sectors (i.e. before the HSE strategy for EET functions is developed). Some of the 'immediate' challenges are described in the offshore regulatory paper (SMT/09/19) which is also presented below the line at the April 09 SMT meeting. The EET programme will work closely with relevant HSE colleagues and other key public and industry stakeholders in order that HSE can deal with the challenges and the accompanying risks to the EET Programme vision arising during Phase I, and establish greater clarity about the scale and nature of the risk and the effectiveness of current control measures.

³ Excluding Government investment in the demonstration CCS project

⁴ Examples are: Greenpeace's opposition to using biomass from Brazil – Europe's largest current supplier; and, local opposition to underground storage of gas in populated districts

⁵ Examples are in HSE taking a precautionary approach to LUP CD's for carbon capture ready sites being seen to sterilise economic land (i.e. in anticipation of future adoption of the technology); and in taking enforcement action against projects which have broad media support such as South Hook LNG terminal.

Costs and Benefits

18. The costs and benefits for the Programme have not been quantified but a summary narrative is included in Annex 2. Further consideration will be given to costs and benefits when developing the options for Phase II.

Financial/Resource Implications for HSE

19. HSE is facing increasing demands to give advice or make intervention on emerging energy technologies (as referenced in paragraph 17). Our current best estimate of resources being deployed by HSE Divisions to meet these demands is in excess of 900 staff days per year, excluding HSL
20. The EET Programme is new work. Although corporate, HID has been nominated as the Directorate through which the Programme resources (£s) will be managed. Key staff resources for Phase I of the EET Programme (April – December 2009) have been estimated at 1,346 staff days spread across B6 – SCS. The payroll costs for delivering Phase I are therefore £290k which are expected to be met by parent divisions. Of this 1,346 days we estimate that 550 days (41%, £119k) of this resource will be directly deployed by the EET Programme to delivery of Phase 1 key products. These products will be delivered progressively throughout the lifetime of Phase 1..
21. Excluding science (see paragraphs 12 and 13), there are some additional costs to HSE in the non payroll items (communications, T&C, and T&S). A bid was made for additional resources for 2009/10 via HID in response to the recent calling note, of which £83k was intended for Phase 1. Current estimates for Phase 1 (April – December 2009) non-payroll costs are now £126.5k (estimates for the additional costs are evolving as the organisation to deliver EET is being set up). The Programme Team is working closely with officers from HID finance and BEU to optimise value for money.

Action

22. That the SMT note the work of the EET Programme.

Programme Vision

“To establish HSE as a responsible enabling regulator working in the public interest to ensure that safety issues are adequately addressed during the introduction and proliferation of the new energy technologies.”

Relevant Industry Sectors

- Carbon Capture and Storage: removing carbon from the power generation process in the form of CO₂ and transporting it in its dense (liquid) phase to be stored permanently in deep geological strata.
- Natural Gas Storage and importation: replacing declining reserves with imported gas stored in natural strata or prepared underground voids. Also the importation, storage and regasification of liquefied natural gas (LNG).
- Renewable Energy: the range of renewable energy sources including; biofuels, wave and tidal, and wind generation (on and offshore).
- Distributed Generation: increasing power generation at or close to the end user, including the development and proliferation of hydrogen cells.
- Cleaner Coal Technology: the refinement and development of mature cleaner coal combustion techniques and energy abstraction from new coal seams without mining.

Desired Outcomes

Phase I (April – December 2009)

1. Across the work streams HSE will have a better understanding of:
 - The **hazard/risk profile** of the industry sectors. And where further evidence or research is required of major accident hazard potential and control measures
 - The **domestic and international context** for example the current status of these new industries in the UK.; Government plans for the deployment of the new energy technologies and the influence of EU and wider international policies. We will also have reviewed available data on the current public perception of the risks.
 - What the relevant **legislative framework** looks like at a domestic, European and International level including any regulatory gaps (to inform Phase 2 options for regulatory strategy)
 - The relevant **industry standards and guidance** and the significant gaps where no standards exist (to inform Phase 2 options for intervention strategy)
 - The **HSE resource** / skills mix currently working on the EET agenda and the impact on and opportunities for our cost recovery (to inform Phase 2 options for resource strategy)
 - This information will be presented as a situation report for publication.
2. A plan for acquiring sufficient knowledge for HSE to be an effective regulator and policy negotiator and principles for HSE's involvement in research.
 - This information will be presented as a Knowledge Strategy.
3. A clear and consistent message so that audiences are aware of what HSE's EET programme is and how they can engage with it.
 - This information will be presented as a Communication Strategy and plan.

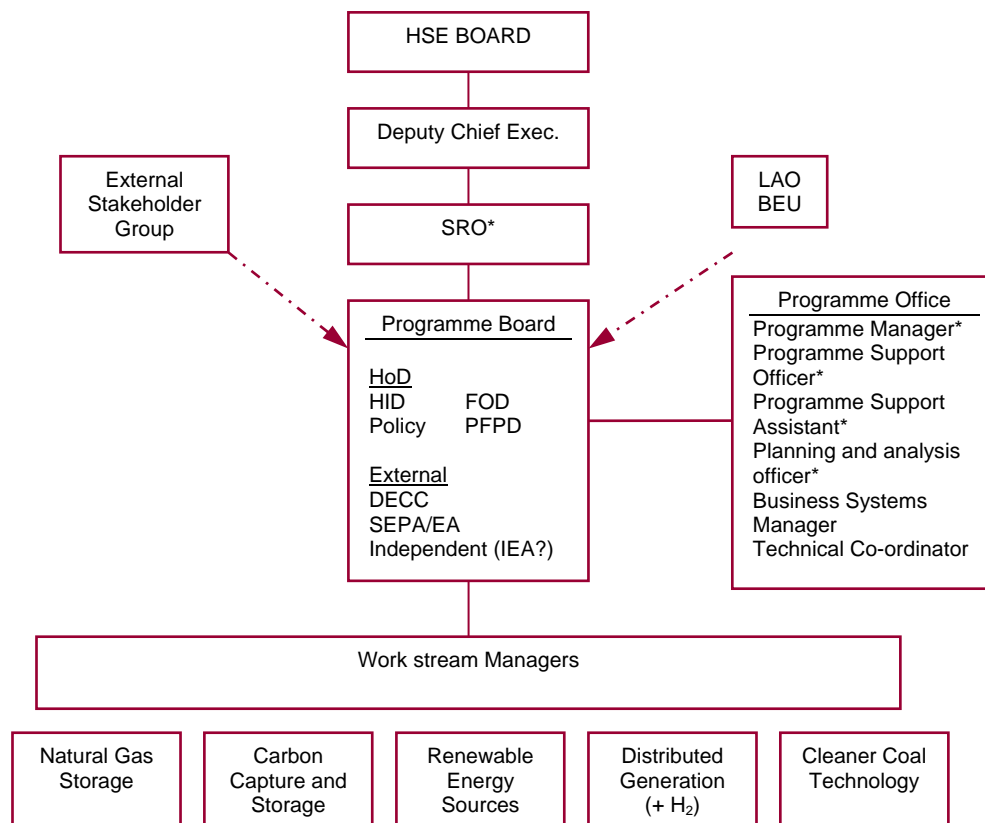
4. Design options for delivering Phase II.
This information will be presented as an options paper for approval by HSE.

Phase II (January 09 – March 11)

Dependant on the options approved at Phase I

5. An evidence based organisational strategy for the emerging energy technologies including the key elements of regulation, intervention, organisation and resource.
6. Guidance to enable HSE divisions to plan and deliver against this strategy

Programme Organisation



Senior Responsible Owner	Taf Powell	HID
Current Board Members: (as at January 2009)	Susan Mackenzie	HID
	David Snowball	FOD
	Les Philpott	PG
	Steve Dennis	PEFD
Legal advisor	Caroline Croft	LAO
Non Executive Board Members	Bronwen Northmore	DECC
	Colin Bayes (to be confirmed)	SEPA
	Independent Energy Consultant	IEA?
Programme Manager:	Rosemary Whitbread	HID

Programme team:	Charles Ransome (0.1/yr)	HID
	Kelvin McFadyen	HID
	Ron Evans (0.2/ yr)	HSL
	Julie Ann Hobson	FOD
	Meg Harper	HID
Workstream Managers:		
Natural Gas Storage	Steve Wing	HID
Carbon Capture and Storage	Gwyneth Deakins	PG
Renewable	Tim Galloway	PG
Distributed Generation	TBA	
Cleaner Coal Technology	TBA	
BEU support	John Hunter	
IA support	tba	

Annex 2 Summary of Costs and Benefits

The emerging energy sector is characterised by rapid change and demanding deadlines which are being driven forward by both domestic and global policies. Across the Divisions, HSE is facing a significant but short term drain on its resources as it is asked to give advice or make interventions on these developing issues. Inevitably, this is effecting delivery on other areas of planned work.

The EET Programme has been established to managing these increasing demands and deliver HSE's role as a responsible enabler in the new energy economy.

The cost of establishing a 'task and finish' programme is off-set by the benefits summarised below. Further consideration will be given to the costs and benefit when outlining options for the development and delivery of an appropriate organisational strategy.

High level benefits and costs avoided

1. HSE is aligned with the Government/Global energy agenda
 - a. Risks to HSE are clearly identified and effectively managed.
 - b. Opportunities to 'live' the new strategy are maximised.
 - c. Health and safety issues associated with the deployment of new energy technologies are kept off the 'critical path'.
2. HSE's priorities within the new energy agenda are clearly defined
 - a. Work is taken forward based on business needs
 - b. Areas of duplication are identified and minimised
 - c. The limits of HSE's responsibilities are clearly defined.
3. HSE resources are secured to support these priorities
 - a. Proactive management of the impact of the new energy agenda minimises the disruption to planned work.
 - b. Resourcing decisions are based on the wider picture and are forward looking.

Costs

4. Salary costs and GAE for Phase I is calculated at £417k. Of this 86% is consumed within HSE's existing payroll plan and a bid for additional funds submitted by HID in February. A further bid for an additional £43.5k for Phase 1 is currently under discussion with HID (see para 21 for derivation of this sum).
5. Loss of cost recovery opportunities is negligible as resources for the Programme Team have not been drawn from front line staff .