

SCOTTISH ENERGY ADVISORY BOARD

1 March 2016

Edinburgh

MINUTES OF THE MEETING

Ministers

- * Rt Hon Nicola Sturgeon MSP, First Minister (chair)
- * Fergus Ewing MSP, Minister for Energy, Enterprise and Tourism

Members

- * Professor Sir Jim McDonald, Principal, University of Strathclyde (co-chair)
- * Dr Graeme Sweeney, Independent Energy Consultant with Ardnacraggan Ltd
- * Charles Hammond, Group Chief Executive, Forth Ports Plc
- * David Sigsworth, Chair, Scottish Fuel Poverty Forum
- * Dick Winchester, Managing Director, Pipistrelle Ltd
- * Niall Stuart, Chief Executive, Scottish Renewables
- * Professor Alex Kemp, Professor of Petroleum Economics, University of Aberdeen
- * Les King, Director of Power and Technology, Doosan Babcock
- * Roy MacGregor, Chair, Global Energy
- * Andrew Jamieson, CEO, ORE Catapult
- * Deirdre Michie, Chief Executive Oil and Gas UK
- * Damien Yeates, Chief Executive, Skills Development Scotland
- * Stephen Boyd, Assistant Secretary, STUC
- * Stuart Crooks, Managing Director – Generation, EDF Energy
- * Melfort Campbell, Chair and Chief Executive, IMES Group
- * Jim McColl, Chairman and CEO, Clyde Blowers Ltd
- * Cordi O'Hara, Director, UK Market Operation, National Grid
- * Keith Anderson, Chief Corporate Officer, Scottish Power Renewables
- * Sam Ghibaldan, Consumer Futures Manager, Citizens Advice Scotland
- * Maggie McGinlay, Director, Energy & Clean Technologies, Scottish Enterprise

Attendees

- * Lena Wilson, Chief Executive, Scottish Enterprise,
- * Jim Smith, Managing Director for Energy Portfolio Management, SSE
- * Mary McAllan, Director of Energy and Climate Change, Scottish Government
- * Calum Davidson, Director of Energy and Low Carbon, Highlands & Islands Enterprise
- * Malcolm Fleming, Special Adviser, Scottish Government
- * Hazel Wilson, Deputy Private Secretary, Scottish Government
- * Kate Morrison, Policy Officer, Citizens Advice Scotland
- * Chris Stark, Head of Energy Division, Scottish Government
- * Kat White, Head of Energy & Climate Change Projects, Scottish Government

Secretariat

- * Stuart Strachan, Scottish Government
- * Nina Ballantyne, Scottish Government

Welcome and Introductions

1. The First Minister opened the meeting by thanking all attendees for coming to the first meeting of SEAB in 2016. As the final SEAB of this Parliamentary term she expressed her appreciation for the work of SEAB to date, and noted SEAB's work was also greatly valued by her predecessor. She then updated SEAB on some changes with regards to membership:

- * Cordi O'Hara (National Grid) was attending in place of Mike Calviou for the first time. Cordi's expertise on the UK system will be very welcome. Mike Calviou has now moved on to a Senior Vice President position in National Grid's American operations. The First Minister passed on SEAB's best regards.
- * Trevor Garlick and Paul Warwick have now retired from their previous roles and will no longer attend SEAB. SEAB's gratitude for their input, particularly during the recent challenging time for the Oil and Gas sector was noted, .
- * Maggie McGinlay, a regular contributor, will now attend for Paul Lewis as Paul's position as Managing Director for Scottish Development International and SE International Operations have seen his responsibilities change.
- * Finally Sam Ghibaldan, Citizens Advice Scotland's Consumer Futures Manager, will now represent CAS at SEAB. The First Minister welcomed Sam to the Board.

2. The First Minister noted the importance of the two substantive agenda items; the development of an overarching Energy Strategy and an update from Lena Wilson on the Energy Jobs Task Force in relation to the Oil and Gas sector.

Matters Arising

3. Professor Sir Jim McDonald then noted the apologies received.

- * Alistair Phillips-Davies, Chief Executive Officer, Scottish and Southern Energy
- * Trevor Garlick, Regional President (North Sea), BP
- * Paul Lewis, Managing Director of Industries and Policy, Scottish Enterprise
- * Ian Marchant, Chair, the Wood Group
- * Frank Mitchell. CEO, SP Energy Networks

4. The draft minutes of the previous SEAB meeting were approved as an accurate record and associated actions in the minutes have been taken forward. Members were reminded the 50:50 by 2020 challenge is ongoing. It was acknowledged that many SEAB members' respective organisations were committed to this agenda and further contributions could be made through the SEAB secretariat.

5. Although they would not be discussed in detail at this time, members were reminded that additional papers on supply chain and economic benefit to Scotland and the commitment to a Scottish security of supply assessment had been circulated. Discussion on progress against the former's recommendations is likely to form part of the agenda at a later SEAB meeting. Sir Jim informed the board that the working group and its chair, Sandy Biggar, would very much welcome comments on the report from members in the meantime, and these should be directed through SEAB secretariat.

Action point: Members to issue comments on supply chain report to Sandy Biggar through SEAB secretariat.

6. Sir Jim then invited Cordi O'Hara to provide a brief comment on the National Grid work to produce a security of supply assessment for Scotland.

7. Cordi O'Hara informed the board that work streams for the security of supply assessment have been mobilised with the expectation of a report being released in September. This date will allow the assessment the full scope required, looking as far ahead as 2025, recognising issues around stability, black start and the reduction of thermal plant. There has been good work in conjunction with the thermal generation and CCS Industry Liaison Group (ILG) chaired by Graeme Sweeney. National Grid recognise the importance of the issue to the board and Cordi offered to report progress more substantively to SEAB in June.

8. On behalf of the board, Sir Jim noted the suggestion of a meeting of SEAB in June was for discussion but confirmed the continuation of the ILG collaboration in the meantime would be very welcome. SEAB had long recognised the importance of resilience and security. Sir Jim also noted recent investment in the grid but emphasised the loss of Longannet as an important issue to be discussed in this work.

9. Graeme Sweeney explained that the size and scope of this work is larger than initially assumed but crucial that it is done well and completed this year. He noted that it was particularly important for black start to be included.

10. Keith Anderson inquired as to the level of economic analysis in the report and suggested it would be useful if the scope could also consider the economic context, including the economic impact of black start requirements.

11. Jim Smith confirmed that SSE transmission colleagues would be willing to contribute to the report.

Developing Scotland's Approach to Energy

12. It was noted by Sir Jim that this first substantive item could be the most important discussion SEAB has had in the last five years. In considering this item, he asked members to note the issues raised by Cordi on security of supply, Scotland's leading reputation on efforts to tackle climate change, and the points made by Keith Anderson on economic impacts and opportunities. Sir Jim noted that the challenges have not lessened but there is a real chance for the energy industry to grow in new areas.

13. The First Minister agreed with Sir Jim on the importance of this item, noting that Scotland's new Energy Strategy will guide priorities for the next five years and beyond. The First Minister spoke on the necessity of meeting climate change targets but also seizing the opportunities this may present from an emerging low carbon economy. She described the great successes already achieved in the process of increasing Scotland's levels of low carbon energy supply, but highlighted that there was more work to be done on lowering demand, and finding a more localised approach that benefits communities. Before introducing the Minister for Business, Energy and Tourism to speak on the item, the First Minister invited members to contribute to development of the strategy in the coming months –the views of SEAB members were welcomed.

14. Fergus Ewing, the Minister for Business, Energy and Tourism, confirmed that input from SEAB is sought in recasting the Scottish Government's energy strategy. The Minister reaffirmed absolute commitment to oil and gas sector, and that Scottish Government support for the sector will remain at 100%. The Minister noted that much success has been achieved in attracting investment to Scotland, and also in securing a reputation as a government that is welcoming to new energy developments. The Minister pointed out that as a result of this, the world's largest tidal array (Meygen) and the world's largest floating wind platform are soon to be built in Scotland. These developments would not have happened without the Scottish Government's use of the Renewables Obligation powers and that further powers could be game changing. The Minister also noted very positive recent engagement with the European Commission regarding their policy and financial support for marine energy where Scotland's leading position was firmly recognised.

15. However, the Minister also noted the challenges ahead, including the irrational policy onslaught against renewables by UK government, risks to security of supply, and over reliance on any one source of supply. With coal plants coming offline faster than expected, the Minister noted the need for a variety of energy sources, and in particular more thermal gas generation.

16. Looking to the future, the Minister laid out some of the principles for the Scottish Government's approach to energy and the emphasis placed on the opportunities. The Scottish Government support for renewables will remain undimmed and undiminished. A whole systems approach, encompassing supply and demand, will be pursued, making the most of opportunities from innovation. This innovation could include solutions at a domestic level, as well as more storage solutions that may require new market mechanisms –in that context the Minister welcomed the recent announcement from Scottish Power on the Cruachan extension. There remains a desire to empower communities through local solutions. Community stakes in Western and Northern Isles energy projects could eradicate fuel poverty. The Minister acknowledged the need to deploy innovation and attract new research expertise, citing his recent visit to the turbine development at Methil as one example.

17. The Minister then introduced the Head of Scottish Government's Energy Division, Chris Stark to present on the work done internally to develop Scotland's new overarching Energy Strategy.

18. Chris Stark then outlined some of the internal thinking on the background to the Strategy work and Scotland's current energy approach. He then moved on to describe the three themes emerging as the foundation to an alternative approach:

- * **A stable energy transition**, maintaining a variety of supply where short-term action is consistent with long-term aims
- * **A whole systems approach** that considers supply *and* demand and integrates heat, transport and power
- * **Decentralised energy**, exploiting the economic opportunity of storage and other innovations, and the social opportunity of community stakes

19. Sir Jim thanked Fergus and Chris for their comments and the presentation. Sir Jim commented that it was an exciting and challenging time to grapple with these issues. He thanked the Minister for his commitment to a balanced supply and noted that investment is key in the context of aging infrastructure, acknowledging the recent EDF announcement on the lifetime extension of their nuclear plant in Scotland. He observed that Scotland's dependency on energy for heating must be kept in mind, and that there are great innovation opportunities in a systems approach –there is a chance to reimagine the Scottish energy system. Sir Jim then opened the floor for discussion, asking members to concentrate on the three key themes, a managed transition, a systems approach, and local/decentralised management.

20. David Sigsworth welcomed the presentation, and stressed the importance of considering fuel poverty and the affordability of energy. Distributed systems have been of interest for a lengthy period but with the Scottish Parliament's powers there may be scope for better progress.

21. Chris Stark suggested that improving energy efficiency in Scotland's building stock is a key opportunity to address fuel poverty. Fuel poverty considerations and energy efficiency is a theme that will run through planning.

22. Niall Stuart noted precisely defining the aim of the Strategy was key with the potential for certain elements to present contradictions. He also wondered if there were opportunities to export the Scottish expertise that has grown through renewables development, as another strand of economic policy.

23. Chris Stark acknowledged the importance of the Climate Change Act as one motivation for policy, but also emphasised the need for an Energy Strategy to incorporate economic and social benefits, and requires examination of all aspects of energy provision.

24. Keith Anderson noted the scale of the challenge and that electricity has traditionally been the focus of policy and industry, because it can be seen as "easier" to deal with than heat and transport. There has been a lack of appetite at UK level for addressing them. There may also be policy and regulatory challenges. However he also pointed out the opportunities from smart grids. Smart metering lends itself to storage and a distributed energy model, with the potential to change individual behaviour and deal with housing issues. He noted that there are opportunities within industry developments and the timing of a recast Energy Strategy was good. Keith observed that there was a lot going on with storage already but more work on the

benefits of smaller scale storage could be done. He concluded by suggesting that revising the energy system is a challenge but there are helpful developments on the horizon.

25. Sir Jim McDonald noted that the benefit of the SEAB is how it brings together industry, academia and the public sector, and that a concerted effort would be key.

26. Lena Wilson stressed that the Energy Strategy must be clear about the economic opportunities. The Strategy should strongly articulate the economic aspect of how we can make the most of existing resources, people and skills. She also offered the resources of Scottish Enterprise in developing aspects of the strategy.

27. Les King discussed the internal modelling done by Doosan Babcock, started around a year ago, on the future of the energy industry, due to be shared shortly. He suggested that any decentralisation of energy would require a systems approach, and pointed out that there has been innovation around gas that limits emissions meaning heat and electricity can be tackled together. In considering carbon, he also emphasised the need to remember particulate emissions. He was also unsure whether a more decentralised system was consistent with developing CCS technology.

28. Jim McColl emphasised the current costs of electricity for industry and hoped that this would be considered (including the impacts of green policies on costs for industry). He cited Germany as an example as he pointed out that costs abroad are significantly lower for industry, and Scotland's record on industrial energy efficiency could be improved.

29. Sir Jim McDonald asked where the break points of a more decentralised or lower carbon system are. Should it be defined by a certain number of KWs or MWs?

30. Deirdre Michie thanked the Minister for his affirmation of Scottish Government commitment to maximising economic recovery from the UK Continental Shelf. She commented that there were lessons to be learned from the oil and gas industry including improving consistency and standardisation, without stifling innovation.

31. Graeme Sweeney supported the idea of a managed transition and advised caution in relying on any single miracle solution. He urged early action and an awareness of time pressures. He recommended more localising, democratising and mutualising of energy systems, learning from the Danish model of collectivism and looking to recent grid ownership changes in Germany. He suggested developing policies and instruments that could make use of and gain access to European money in new ways. He inquired if there was a role for CCS in repurposing the gas grid –he felt it unlikely that all aspects of energy will be electrified. He recommended seeing the drop in UK Government support as an opportunity for Scotland to try new approaches.

32. Stephen Boyd underlined the importance of the economic implications, agreeing with Jim McColl on the impacts on energy intensive industries. He recommended aspiring to develop new industries, but warned that there would be consequences for the nature and distribution of employment and skills. Keeping and

redeploying skills within Scotland is key in maintaining a Scottish lead in these areas. He believed the presentation suggested quite fundamental changes and that civic engagement would be extremely important.

33. Charles Hammond believed that there was a need for bolder policy on district heating, although noting that the upfront costs of district heating are higher and it can limit choice. On transport, he referred to the need to reduce empty running and transport more via sea routes, as emissions are about a third of goods travelling by road. He was concerned that Scotland is “at the end of the line” for the GB energy system despite being a net energy exporter, and queried whether we can improve the resilience of our system to reflect our export contribution.

34. Cordi O’Hara explained that the delay in producing the security of supply report was to allow for the issues mentioned by Charles Hammond to be part of the scope. National Grid aim to look holistically at the system and would like to present an update in June.

35. Sam Ghibaldan commented that there was a real opportunity to do something about heat. He felt it was very important to engage consumers and ensure that they were part of the transition. CAS is currently piloting new forms of engagement and offered to share learning from this in support of Scottish Government’s work on the Strategy.

36. Jim Smith asked about the level of energy self-sufficiency Scotland wanted. Pumped storage can have the same impact as an interconnector, but ownership of the capacity is different. Jim queried whether Scotland could afford both, and if not, which option would be preferred. He noted that more gas generation would be a good thing, but that it seems unlikely until the transmission charging regime for Scotland allows viability. He advocated for a roadmap outlining the end scenarios and direction of travel Scottish Government wants to see.

37. Sir Jim McDonald agreed that reducing the possible infinite futures to a few likely scenarios would be helpful and offered the support of the Board in this endeavour.

38. Niall Stuart pointed out that there had been a mechanism of migrating renewables sector away from subsidy but it had closed prematurely and further wind and solar will only be possible if competitive with new gas.

39. Stuart Crooks thought that the presentation covered the right points, but that a distinction should be drawn over what can be controlled by policy and what can’t as part of a managed transition. Speaking on the extension of EDF plant lifetime, he advised that generation plants will only be there as long as they make economic sense, as they consume large amounts of energy and money. He emphasised the need to ensure the Strategy was science led, not subsidy led. He noted that it is a challenging market for new thermal but there are exciting opportunities in a science led Strategy that incorporates innovation.

40. Cordi O’Hara said that National Grid see the need for growing system flexibility and want to promote flexible demand side at an industrial and commercial

level, which would assist the transition. She pointed out it was necessary to meet overall system targets but there is a danger of being trapped in outdated dialogue that focuses on rationing and economic GDP. She believed there is an opportunity to educate and change the narrative around a new energy system. The skills agenda, for example, could be very exciting. She pointed out that further embedded generation is blurring the line between transmission and distribution. This requires whole system solutions from a network perspective and a set of standards. She suggested that collaboration and pilots will be crucial to the future. National Grid have started trialling demand side response but are keen to work across sectors to develop further.

41. Sir Jim McDonald questioned whether UK standards on security of supply need revising, as some aspects are now 50 years old.

42. Andrew Jamieson agreed with Cordi O'Hara on the need to collaborate across the energy sector, and noted the need to share learning more. He noted that some issues are old and suggested that incremental advances are not the answer. Andrew wanted to know how interventionist the Scottish Government sought to be. He noted that the Scottish Government had a good record in renewables, specifically wind.

43. Keith Anderson stressed the importance of remembering smart innovations and energy efficiency. He warned that discussing collaboration is easier than making collaboration happen in practice. He noted that the penetration of distributed generation in some areas of Scotland was incredible, and suggested looking to Orkney as a potential model for a UK wide system

44. Damian Yeates noted that the Apprenticeship Levy was coming, and that it should be strategically aligned with our ambitions and skills agenda. He proposed that investment, skills and a cultural dimension could be a very powerful combination in transforming the energy system.

45. Keith Anderson noted that some changes and advances are already happening. On smart metering, for example, the industry is already on a clear path, and if it's not what is wanted by government, then industry must be informed now.

46. David Sigsworth stressed the important role of planning. He suggested that without Scottish Government setting out clear objectives, heat will not be addressed, and if the solution is not simply to electrify heating, then that must also be discussed.

47. Chris Stark said that a more localised approach, combined with more planning could be the basis of a long term strategy, as the planning requirements of Glasgow city centre would be very different to Orkney, for example.

48. The Minister thanked members for a stimulating discussion. He noted that the Scottish Government needs to balance the objectives of the energy trilemma, remember cost to industry with regards to international competitiveness. The Minister noted the need to meet climate change targets but also promote economic development. He pointed out that progress had been seen on district heating in Wick. The Scottish Government is working on material that will flesh out some of the ideas discussed, to be circulated to SEAB members in due course. The Minister

noted the possibility of creating exciting opportunities for new business in heat and transport. He described the discussion as the start of a continuing Scottish Government dialogue, not just with industry but with technical and academic institutions too. The Minister stressed the Scottish Government aspiration for a pragmatic, science based policy that keeps Scotland at the forefront of energy internationally, and produces jobs.

Action point: Material discussing elements of Strategy to be circulated to SEAB members upon completion.

49. Sir Jim McDonald noted that the discussion was very positive. He also noted that the vested interests around the table had not prevented an enthusiastic welcome to the ideas of innovation, collaboration and partnership. Sir Jim described National Grid's work as very important.

Update on Energy Jobs Taskforce

50. The First Minister thanked the board for a very positive discussion on the previous item and introduced the next substantive item. She acknowledged that the challenges for the oil and gas sector have worsened, with constant downward pressure on the price that has had knock on effects for the supply chain. The First Minister noted the work that the industry had done on efficiency and costs while facing severe challenges. She noted that the Scottish Government were trying to mobilise the levers available, and that she could not stress enough the Scottish Government's ongoing commitment to the industry. While this message was important, the First Minister also noted the practical efforts by Scottish Government to assist the industry, including the recent announcement of funding and the work to support skills and retraining, as well as innovation and research and development efforts. Scottish Government is making representations to UK Government on the macro fiscal framework for the sector as the UK Budget approaches, noting these were supported by Oil & Gas UK.

51. Lena Wilson began by agreeing with the First Minister on it being an incredibly challenging time for the sector. She noted that the Energy Jobs Taskforce (EJTF) action plan was published in September, with an update in December, and that all matters are minuted and published online so everything is transparent. She stressed that EJTF's focus is action, and is a uniquely broad forum, bringing together new and different perspectives on the industry. EJTF maintains a focus on the short, mid and long-term.

52. The priority right now is companies in the oil and gas supply chain. There are currently 161 companies reporting over 20,000 employees at risk of redundancy in Scotland, and over 60,000 in the UK so a very significant issue. The figures for actual job losses is at just over 10,000. Of 62 modern apprenticeship redundancies, 40 have been helped back into work, 21 of whom were helped by the Adopt an Apprentice scheme. Over the last year, EJTF has engaged with the whole range of supply chain, through running seminars and workshops that complement one-to-one support. The EJTF has held five resilience events, and not just in the North East. 110 companies have been helped to stay in business. This has been enhanced by £2.5 million from Scottish Enterprise to place industry experts with companies, which was part of the overall funding announced by the First Minister.

53. EJTF is helping companies internationalise, and also providing funding for individuals and retraining. OPITO is gathering evidence, not just anecdotes, and moving from PACE events to transition to alternative careers and sectors for those affected. A new HR standard is being developed, that outlines steps to be taken prior to redundancy being considered. Lena noted the progress made with the ORE Catapult partnership, and stressed that the EJTF would continue to work constructively on the long-term needs and challenges of the sector. Some scenario work has been done that looks to the future and suggests that structural changes may be needed. Lena emphasised the importance of contributors' commitments, particularly praising the STUC's contribution. DECC have also now rejoined the EJTF allowing us to make positive representations to UK Government. There is recognition at a UK level that the support in Scotland is unique and could be emulated elsewhere. Currently the EJTF is working with the East Anglian Taskforce and is keen to offer as much support as possible to the various UK task forces efforts. Lena noted that the First Minister's engagement with the taskforce is really important to members.

54. Deirdre Michie noted her appreciation for the commitment and practical support that has been offered. She said that taking the lessons from Scotland and using them elsewhere was crucial. she noted the recent activity survey that revealed efficiencies have been made and costs have been reduced in the sector. The industry has worked hard but the goalposts are still shifting. Investment and exploration are at an all-time low. The industry is looking for fiscal support mechanism, and are working on an eventual cost target of \$15 per barrel, \$17 by the end of the year.

55. Melfort Campbell shared his experience of a meeting in London recently with oil companies who described the circumstances as exceptionally challenging. He described the spreading of the EJTF outwith Scotland as very important and hugely in Scotland's interests. He noted redundancies in Dorset and Banchory from companies that are crucial to industry future.

56. Stephen Boyd noted his appreciation of the work done with the taskforce and with Scottish Enterprise. He noted that the regular on-going dialogue with Oil & Gas UK had been good and that there are positives emerging. He welcomed further engagement from the Minister.

57. Professor Alex Kemp discussed some modelling he'd done that showed 2016 to be a tough year, but 2017 to potentially be more positive. If there are cost reductions, budget help and a \$50 price, new projects could then potentially go ahead.

58. Lena Wilson informed the board that industry players were being very open about skills, but that some lag is inevitable and agreed with the need to ensure existing talent isn't lost. Skills currently transitioning to other sectors may not return when they are next needed.

59. The First Minister noted there were balances to strike. Whilst acknowledging the extent of current difficulties it was important to emphasise the opportunities for business start-up that did exist and the wider context that the employment level in

the country is still rising. She advocated a positive message and communications strategy about confidence and a bright future for young people in the industry.

60. Damian Yeates suggested that, whilst one redundancy was too many, there was a degree of positivity in the fact that there had only been around 60 redundancies from the 2000 apprenticeships in the industry. Lena Wilson suggested that the number would have been higher without the efforts of the taskforce.

61. The Minister wished the record to show his appreciation for Lena Wilson's work and the work of all those involved. He noted several instances of companies achieving efficiencies through implementing ideas generated from their own workforce's input. The Minister noted the good work of Andy Samuels and the Oil & Gas Authority and confirmed that the Scottish Government are making representations on new tax measures and clarifying decommissioning risks as they are currently affecting new deals. The Minister spoke about asking the UK Government to prevent contagion through the supply chain and potentially considering financial guarantees. It was suggested that a loan to equity deal could prove a sound investment if the costs continue to be driven down and prices rise.

62. The First Minister concluded the discussion by thanking Lena and colleagues for their hard work.

Update from ILGs

63. Sir Jim McDonald noted that this item had been condensed to allow for substantive discussion and asked for the ILGs to report back via correspondence to SEAB.

Action point: Secretariat to commission updates

64. The First Minister then thanked attendees for their time today and over the previous five years. A provisional date in June is to be established for the next meeting, pending the outcome of the Scottish general election.

Action: SEAB secretariat