

2017-2020 Government Chemist Programme Expert Group meeting

Thursday 29th November 2018

Conference Centre, 1 Victoria Street, London SW1H

Attendees:

<u>PEG Members</u> Jonathon Griffin Andrew Millman Stephen Garrett Andrew Damant (Chair) Roger Wood Victor Aguilera Julian Cudmore Chelvi Leonard Simon Branch Declan Naughton Martin Rides Brenda McCrory David Pickering Thomas Bell	<u>BEIS</u> Karen Folkes Maria Turner Merton Murrell Clare Skeldon <u>LGC</u> Julian Braybrook (Government Chemist) Michael Walker Selvarani Elahi Malcolm Burns Simon Cowen Paula Domann Hayley Forbes Kirstin Gray Bob Oswald (Minutes)
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Apologies: Paul Berryman, Lucy Foster, Kirsty Dawes, Robbie Beattie, Helen Munday, Kasia Kazimierzczak

1. Minutes/Actions

- 1.1 The Chair began by welcoming all attendees and noting apologies. He also remarked that one (Programme Expert Group) PEG member who could not attend had submitted some suggestions for the formulation of the new Government Chemist (GC) programme, which would be covered under Item 8.
- 1.2 Review of Minutes and actions from last PEG meeting:
 - Minutes from previous meeting (April 2018) were approved as an accurate record of the meeting.
 - **Action 5** (from Nov '18 meeting): GC committee membership is on the GC homepage under 'corporate information'. **Status – Closed.**
 - **Action 6** (from Nov '17 meeting): Royal Society of Chemistry (RSC) Analytical Division has been contacted re: PEG membership but has not yet had a response. **Status – Open.**
 - **Action 10** (from Nov '17 meeting): It was agreed that the meeting minutes would be produced in both attributive and non-attributive versions. **Status – Closed.**
 - **Action 3** (from Apr '18 meeting): Development of mini-projects on HCN (hydrogen cyanide) and 3-MCPD (3-monochloropropane-1, 2-diol) is under consideration. **Status – Open.**
 - All other actions were closed.

2. Government Chemist Update (Julian Braybrook)

- 2.1 Julian gave an overview of his background which encompasses 30 years at LGC in measurement and analysis roles. He is also Director of the National Measurement Laboratory.
- 2.2 The GC also has a role in the provision of advice relating to measurement science and Julian works with different government departments, and other stakeholders, as appropriate to deliver this.
- 2.3 Current issues for the GC include:
 - Emerging technology (e.g. more screening technology). Some technologies are evolving very rapidly and are the source of potential misunderstanding.
 - Potential EU (European Union) exit scenarios, and how they might affect cases or advice required from the GC.
 - The ability to analyse at lower and lower concentrations and the data that is generated.
 - The Medicines and Healthcare products Regulatory Agency (MHRA) approached Julian to get an understanding of the GC's role in relation to the Human Medicines Regulations 2012. MHRA is conscious of new therapies going into the National Health Service and wanted to explore the GC's role in supporting them. A co-ordinating group has been established to look at this.
- 2.4 Over the last year, statutory referee cases have been less analytically complex - or covered more familiar territory - than they have in the past. In the context of the forthcoming Comprehensive Spending Review and new GC programme formulation, ways to maximise impact of the GC functions are being considered.
- 2.5 A PEG member commented that as the GC diversifies, it will be important to monitor which sectors are represented on the PEG, which up to now, has been mainly focused on the food sector.

3. BEIS update (Maria Turner)

- 3.1 Maria announced that Steph Hurst has been appointed Deputy Director with responsibility for the UK weather service (Met Office), the UK Space Agency, the Design Council, the Intellectual Property Office, the National Measurement System (NMS) (which is comprised of six National Measurement Laboratories including LGC and the Government Chemist).
- 3.2 Maria then summarised the latest developments in the Department for Business, Energy and Industrial Strategy (BEIS) including industrial strategy sector deals for construction, nuclear and artificial intelligence.
- 3.3 The latest tranche of EU Exit Technical Notices for a no-deal scenario were published on 24 September 2018. These cover (amongst other topics):
 - Applying for EU funded programmes
 - Regulating Energy, including nuclear research
 - Regulating medicines and medical equipment

- Satellites and Space programmes
- Patents and trademarks.

3.4 The NMS Delivery Plan was published in June 2018.

3.5 Spending Review: letters were sent to partner organisations in August 2018 advising that preparation has begun, although there is no clear timeline from Treasury yet. However, the process will encompass an evidence gathering phase, scenario planning and negotiation, leading to the final outcome. The Spending Review will look at:

- Opportunities for savings and efficiencies
- How well organisations are delivering
- Opportunities to support Industrial Strategy and / or the Government's target to boost research and development to 2.4% of GDP by 2027
- Scenario planning for different budget cuts/ increases
- Maria confirmed that there will be a role for the PEG in developing a case for the Treasury but until the process is confirmed it was not possible to say what that role would be.

3.6 PEG membership: Maria emphasised the valuable contribution of PEG members in helping BEIS to be an intelligent customer when procuring contracts. In the future, member appointments will be for 3 years not 4.

3.7 Looking forward, some key priorities and milestones were highlighted:

- The annual NMS highlights review is due to be published very soon.
- Development of methodology and agree responsibilities for horizon scanning project. This is a commitment in the current UK Measurement Strategy, which states as an objective to "drive a National Measurement Foresight Activity in 2018 by bringing together users in science, business, regulatory, and government to identify priorities for UK measurement science." GO-Science will be contributing to the methodology.
- Planning for the next UK Measurement Strategy, which will be 'evolutionary' rather than 'revolutionary'.
- Review of PEG membership in the coming months to reflect evolving priorities. The majority of current appointments end April 2019.

3.8 It was agreed that all presentations from the meeting would be circulated to the PEG **(ACTION: Bob Oswald)**

4. GC Programme progress update (Selvarani Elahi)

4.1 The progress update covered the period April-September 2018.

4.2 The GC Review for 2017 was published in September 2018 concluding the 2014-17 programme. Selvarani requested that new PEG members please submit short biographies for inclusion in the next review **(ACTION: ALL)**

4.3 The cross-government (Department for Environment, Food and Rural Affairs / Food Standards Agency / Food Standards Scotland / BEIS) Joint Knowledge Transfer Framework for Food Standards and Food Safety Analysis delivers a strategic three year co-funded programme of scientific knowledge transfer activities to ensure

effective analytical laboratory capability in the UK for food standards and food safety analysis. Running from April 2017 until March 2020, the year 2 activities have been scoped and agreed with stakeholders following a prioritisation exercise.

- 4.4 Progress across the whole programme is on track; there are four projects which are slightly behind. A number of projects were discussed in more detail:
- 4.4.1 Capability Building Project 2: Next Generation Sequencing (NGS) applications for food testing. In response to a request for advice from a food business on how the results of NGS methods should be applied to food authenticity, the GC prepared and issued a note on this subject, which will also be placed on the GC website.
- 4.4.2 Capability Building Project 3: Underpinning core capability in molecular biology approaches for food analysis. Malcolm Burns and Selvarani Elahi were invited as experts to attend a Defra “Deep Dive” Food Authenticity Workshop event at the end of June, to help identify key evidence questions for food authenticity strategic research priorities within Defra's Food Authenticity Programme.
- 4.4.3 KT1: Stakeholder Awareness. Five case studies have been produced but work has commenced on the production of three additional open access papers / case studies from the following topics:
- Jelly-mini cups
 - Coffee authenticity
 - Allergens court cases
 - A comment was submitted from a PEG member who could not attend the meeting, noting the quantity and range of activity on stakeholder engagement. They wondered if there was an opportunity to be more targeted. In particular, the engagement with Defra's Authenticity Methods Working Group (AMWG) and the European Committee for Standardization (CEN) seemed to have more of an advisory nature so could move to project RF2 (Support for the GC Advisory Function). They suggested developing some criteria so that the differentiation between project RF1 (Support for the GC Statutory Function) and project RF2 was clearer. Selvarani agreed that this could be reviewed. She explained that the Joint Knowledge Transfer Framework for Food Standards and Food Safety Analysis was created to help with analytical capability in the UK on the basis that the four funding bodies, all have a responsibility to disseminate the output of government funded work for the benefit of all. So the idea was to pool funds together to create a programme covering not just food authenticity but also quality, safety and other issues.
- 4.4.4 Project RF1: Support for the GC Statutory Function. GC staff continue to serve on a number of important UK and international committees where they input into and influence the development of new legislation, standards and policy to ensure that they are based on sound measurement science and are fit for purpose.
- 4.4.5 Projects RF2: Support for the GC Advisory Function. Selvarani summarised the ideas for mini-projects that have been shortlisted. In particular, the project on an analytical methods for BPA (Bisphenol A) and BADGE (bisphenol A diglycidyl ether) derivatives

was considered relevant in light of forthcoming legislation on coatings and varnishes going into food.

- 4.4.6 One PEG member commented that Selvarani's presentation was very clear and covered everything. There was a request that the next meeting cover anything that has been impacted by EU exit.
- 4.5 Selvarani was asked how the percentage completion figure for each project was calculated. She explained that this was a combination of data extracted from timesheets completed by GC staff combined with feedback from scientific leads for projects, which are provided in quarterly review meetings.

5. Statistical approaches used in the evaluation of data for referee cases (Simon Cowen)

The key points of Simon's presentation can be found in his slides, which were circulated to members with these minutes. Comments and questions raised during the presentation are summarised below:

- 5.1 A PEG member asked if Simon had looked at applying long-term precision estimates to past cases for which the result close enough to the limit for the conclusion to possibly change. Simon said he had not, but that it was rare enough to consider this a non-urgent issue. For it to happen, there would have to be large in-batch variation, and the sample being analysed has to be close to the lower limit against which it is being measured it against.
- 5.2 It was also suggested that, given that the same method was used over the time frame, it would be interesting to look at an analyte where the method changed.

6. Referee samples received and outcome of cases (Michael Walker)

- 6.1 One PEG member declared a potential conflict of interest in one of the topics discussed and left the room during this presentation.
- 6.2 Michael's presentation covered
 - An update on project Capability Building Project 1 (allergens)
 - An update on EU exit and impact on referee cases
 - A selection of recent referee cases.
- 6.3 Michael highlighted some of the literature published over the last 5 years or so which have informed project Capability Building Project 1, in particular the paper published by Michael Walker *et al.*, in The Analyst in October 2015 ("Is food allergen analysis flawed? Health and supply chain risks and a proposed framework to address urgent analytical needs"), which highlighted the flaws in allergen analysis and has allowed the GC to influence the direction of travel in this important food safety area.
- 6.4 EU Exit: In Michael's view, very little would change for the GC after EU Exit, noting that the GC had been performing a valuable role long before the UK joined the EEC (European Economic Community). Moreover, the European Union (Withdrawal) Act 2018 has stated that EU food and feed law will be absorbed into UK law. Patterns of

trade are likely to change and an expansion in trade outside the EU would be subject to greater scrutiny, which may lead to an increase in work for the GC. Julian, Michael and Selvarani have been considering what to do in the event of a spike in demand for GC services and will implement a strategy to deal with this as required.

- 6.5 Michael then summarised work on current referee cases, which are *sub judice* and so this information is not reproduced in these minutes.

7. The Food Authenticity Network (Selvarani Elahi)

- 7.1 Selvarani explained the background to the Food Authenticity Network (FAN) (www.foodauthenticity.uk), which was launched in July 2015. Originally a Defra initiative, its core aim was to create a cost effective virtual network to bring together all those with an interest in Food Authenticity Testing. The operation of the basic network is now being funded by BEIS through the GC.
- 7.2 FAN's Chair is Michael Walker and the Secretary is Mark Woolfe. The newest member of the Management Committee is Franz Ulberth of the Joint Research Centre of the European Commission.
- 7.3 The FAN website has developed into a trusted source of curated information and a key mechanism for the dissemination of reports, SOPs and training material. It will link to the Food Integrity (€12M European Commission funded project) Knowledge Base when that resource has been made live.
- 7.4 FAN brings together 14 food authenticity centres of expertise in the UK allowing direct access to named experts by authenticity area of expertise. In addition, the current membership brings together those organisations involved in the various authenticity testing disciplines in a more coordinated way, providing an opportunity to interact and exchange knowledge on food fraud testing.
- 7.5 There are currently 927 members and the number of visitors to the website indicates that people are accessing these resources even if they are not members. Visitors from outside the United Kingdom have increased in 2018.
- 7.6 49% of referrals to the website come via a web search by the user (FAN is Google's top ranked page for a search on 'food authenticity'). However, since introducing monthly highlights emails, referrals to website from an email link have become significant (10%).
- 7.7 Twitter followers of the @FAAuthenticity account have increased 48% between November 2017 and October 2018. Chris Elliott will be writing a foreword for January newsletter, so new Twitter followers may be picked up through him as his Twitter following is high. Evaluating success in terms of social media is difficult but increasing number of followers is promising.
- 7.8 From January 2019, the Network will transition into an industry-led (LGC) model with the ambition to become a global self-sustaining network. A basic level of continued government funding has been secured until March 2021 to operate the Network as an open access tool for all stakeholders but will require contributions from industry and other governments to achieve a truly global Network. A funding model like the Science

Media Centre is being considered where small contributions are made by a wide variety of organisations

- 7.9 Selvarani was asked who the target audience for the website was. She replied that initially it was aimed at analysts but with the addition of material on food fraud mitigation the audience has expanded to include the food industry and regulators (analysts, the food industry and regulators are the three largest membership categories).
- 7.10 Selvarani was asked if the spikes in Twitter engagement corresponded to particular news stories. She explained that the monthly highlights emails did cause spikes but dips were observed around Christmas and summer holidays.
- 7.11 A PEG member asked about developing further links with industry. Selvarani agreed that there was certainly scope to do more outreach as the Network evolves. The intention is to work with businesses and organisations to gain support for the Network, which could involve co-badging. There is also a new 'products and services' section on the discussion board, which any member can use to inform the Network of new developments in the field.

8. Government Chemist 2020-2023 Programme Formulation (Paula Domann)

- 8.1 Paula began by reviewing the GC programme structure and summarising current capability building projects, which reflect current stakeholder requirements and direction:
- Next Generation Sequencing (NGS) for food authenticity, adulteration, quality and safety testing
 - Underpinning core capability in molecular biology
 - Protein Mass Spectrometry- Allergens
 - NMR (Nuclear Magnetic Resonance) for food authenticity
 - Mycotoxins by LCMS/MS (Liquid Chromatography with tandem mass spectrometry)
 - Rapid and point-of-test devices for food testing.
- 8.2 The proposed first step in formulating the 2020-2023 Programme is a stakeholder engagement workshop with the PEG and an expanded set of stakeholders, which is being planned for April 2019. It was envisaged that this would encompass a shorter PEG meeting in the morning and a workshop with the wider stakeholder group in the afternoon.
- 8.3 Suggested themes to explore included:
- Next Generation Sequencing. Methods are being developed but lacking standardisation, guidance and assessment of how fit for purpose they are. More work is needed to fully understand the strengths and limitations of this technique for food authenticity testing, building on the Food Integrity work funded by Defra.
 - Reference Materials. We know this limits method development for food authenticity/safety, but do we know which are the ones that need to be developed?
 - Databases. A review of what Food Integrity has undertaken and development of an action plan.

- 8.4 There was some discussion on how to make best use of the limited time available in a workshop format. It was suggested that ideas could be submitted in advance (possibly in the form of a structured survey) which would allow the group to progress quickly to the substantive issues on the day itself.
- 8.5 The stakeholder workshop would be invitation only and the PEG were asked to suggest names.

9. PEG closed session feedback (Chair)

- 9.1 The PEG thanked LGC staff for their excellent and informative presentations, which were an impressive reflection of both the quantity and quality of the work undertaken by the GC.
- 9.2 Thanks were also extended to BEIS for funding FAN.
- 9.3 There were a number of comments on specific presentations:
- The PEG were very reassured that, as stated in Simon Cowen's presentation, the GC confirms the Public Analysts' findings in 90% of aflatoxin referee cases.
 - Further consideration needs to be given to how the stakeholder workshop will function.
 - The development of public engagement work was positive and valuable.
 - Having heard about the work on allergens and jelly mini-cups a number of times, the PEG commented that they would be interested in hearing more about some other aspects of the GC work programme in future meetings.
 - The PEG agreed that they liked the convenience of holding the meeting in central London and suggested alternating between Teddington and Victoria Street.
- 9.4 One PEG member observed that routine analytical laboratories sometimes perceive a disconnect with the LGC NMI role (high accuracy primary methods). Julian Braybrook said that for all programmes there is a delicate balance between stakeholder input, outreach and delivery in a practicable manner. However, it is something that the GC is conscious of and there is more to do. Selvarani Elahi added that the priorities identified under the Joint KT project are designed to meet the needs to working laboratories; she also mentioned that Capability Building Project 3 is looking at low cost NGS options, which is aimed at labs that cannot afford to keep investing in expensive equipment.

10. Any Other Business

- 10.1 The 3 mini projects under project RF2 have not been finalised. It is possible that the industry project may not be feasible, in which case the 3-MCPD method is suggested as an alternative.
- 10.2 In relation to the BPA/BADGE proposal, one PEG member commented that they received method related information from FERA earlier this year and suggested that the GC maintain contact with Fera.

11. Next meeting

11.1 Dates for the next meeting and stakeholder workshop (Spring 2019) will be agreed via a Doodle Poll.

NB: Due to the potential for *sub judice*, presentations have not been uploaded. Outputs from the Government Chemist programme are made available via publication in peer reviewed journals or on the [Government Chemist website](#).

The Government Chemist Team