



# Fulfilling our Potential: Teaching Excellence, Social Mobility and Student Choice

## Executive Summary

The Royal Society of Chemistry welcomes the opportunity to respond to the above green paper consultation, and would be pleased to continue working with the Government as plans develop and further details are available. This response has been prepared in consultation and discussion with members of the chemical sciences community, including members of the Heads of Chemistry UK group (HCUK)<sup>1</sup>.

As a professional body, and the accrediting body for chemical science degrees in the UK, we are pleased to support the government's commitment to recognising and improving the quality of teaching in higher education (HE). We provide support and recognise the HE teaching community through various activities including our Awards programme<sup>2</sup>, online resources<sup>3</sup>, events<sup>4</sup>, and Chartered Science Teacher Status (CSciTeach)<sup>5</sup>. Whilst we broadly support the aims of the green paper, we have concerns about the proposed mechanisms and potential unintended consequences.

For the sake of completeness we have addressed the questions raised in the Green Paper consultation and the recommendations of the Nurse Review where appropriate, e.g. where there is a direct impact on the chemical sciences. We have not answered the questions which are better addressed by HE institutions/providers directly, or where there is no chemical science-specific consequence.

## Teaching Excellence

In order to achieve the aim of recognising teaching quality and long-term impacts for students, there are several components of the proposed Teaching Excellence Framework (TEF) that deserve further consideration including:

- The impacts of linking TEF to student fee increases;
- The appropriateness of current common metrics, which are not considered to be good proxies for teaching excellence;

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<sup>1</sup> HCUK is an independent, self-governing body that represents the interests of departments engaged in chemical research, education and scholarship in 70 universities and similar institutions throughout the United Kingdom and Ireland.

<sup>2</sup> A full list of all the Awards in our programme, including our Education Awards can be found on the Awards pages of our website <http://www.rsc.org/awards-funding/awards/#topic>

<sup>3</sup> Our Higher Education LearnChemistry website contains resources to support those teaching chemistry at HE level <http://www.rsc.org/learn-chemistry/collections/higher-education>

<sup>4</sup> We hold events throughout the year to support those teaching in HE, including our Variety in Chemistry Education conference we jointly run with the Institute of Physics <http://www.nottingham.ac.uk/conference/fac-sci/vicephhec/index.aspx>

<sup>5</sup> CSciTeach is a chartered mark recognising excellence in science teaching and learning from primary and secondary schools to further and higher education. More details can be found on our website: <http://www.rsc.org/careers/cpd/teachers/#CSciTeach>

- The conflation of teaching quality and social mobility;
- The administrative burden and cost;
- Opportunities to align with existing processes for recognising excellence in HE, e.g. professional body accreditation.

### Social Mobility and Widening Participation

The Royal Society of Chemistry promotes diversity in a number of ways, including through our schools programmes and our annual Joliot-Curie conference which aims to address barriers to career progression, and to support diversity in the chemical sciences<sup>6</sup>. We are supportive of the ambition in the Green Paper to improve access to higher education for students from disadvantaged and underrepresented backgrounds. However, the Green Paper does not fully recognise all the factors which influence students' ability to access HE, e.g. geographical constraints and wider financial pressures. Consequently some recommendations could potentially have a detrimental impact on students' choices, particularly linking fee increases to higher levels of TEF.

We find that a lack of accessible coherent data and related evidence can often be the limiting factor in driving and developing new initiatives to support accessibility and improve diversity in STEM subjects. We recommend that Government should improve the coordination, collection, accessibility and monitoring of diversity data, across the whole education system.

### Simplifying the HE Architecture

We welcome the proposal of a statutory "arms-length" body (the Office for Students) at the heart of the HE architecture. As well as the potential for a single, overarching voice for students' interest in HE within Government to have more impact, the proposals recognise the importance of maintaining institutional autonomy: this independence is a strength of the UK HE sector. We note that there is no reference in the proposals to the duty the Office for Students would have to postgraduate students<sup>7</sup> and we would like further information about how they can be represented and their needs supported.

In many HE Institutions (HEIs) we see positive interactions between teaching and research responsibilities resulting in improved student experience and employability. There is a risk that there will be a shift towards "teaching focussed" and "research focussed" institutions, and a loss of these opportunities for enhanced student experience.

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<sup>6</sup> More information about our activities that support diversity, including the Joliot-Curie conference, can be found on the Diversity pages from our website <http://www.rsc.org/campaigning-outreach/policy/diversity/>

<sup>7</sup> In 2013/14 there were 18,120 undergraduate chemistry students and 5,005 postgraduate students studying at UK universities.

It is essential that the teaching grant allocations reflect long-term needs rather than short term political pressures. Similarly, the Office for Students should be able to contract out some functions, especially where impartiality is required, e.g. in quality assurance.

It is vital in the context of the whole architecture not to confuse the student experience with teaching quality experience.

#### *Reducing Complexity and Bureaucracy in Research Funding and the Nurse Review*

Research UK (RUK) and the proposed Ministerial Committee on research have together the potential to bring many benefits in terms of enabling the development of a coherent long-term strategy for research in the UK. This includes both capital and non-capital investment in science.

We recommend that:

- As the Nurse Review recommendations are implemented care must be taken to avoid moving to a research landscape which is unstable on parliamentary timescales or is heavily subject to political factors.
- The benefits afforded by having individual bodies with oversight and understanding of different research areas and different funding mechanisms (grants and quality-related (QR)) must be retained.
- The new RUK interdisciplinary research funding stream should offer both managed and responsive calls.
- It is crucial that support for curiosity-driven research in core disciplines, such as chemistry, is maintained.
- Both the QR funding stream and the means of evaluating research and administering funding must remain formally separate from government. If brought within RUK, this process should remain separate from research council grant funding.
- Overseeing QR funding and the Research Excellence Framework (REF) requires high-level leadership and appropriate staff resources.
- Any change to QR funding for English institutions must not impact the allocation of grant funding to institutions throughout the UK.
- Careful consideration is given to the use of some metrics, balancing the need for continuity with the need for innovation to create more appropriate assessments.

#### *UK Nations*

Whilst many of the proposals outlined in the Green Paper relate to England only, there will be consequences for HEIs, students and employers in all the UK Nations, impacting on student funding, student mobility, institutional funding, administration and comparability. Further consideration must be given to impact of these changes across the UK prior to implementation.

*In Conclusion:*

- We welcome the opportunity to recognise and drive excellence in HE teaching and research.
- Chemical sciences HE in the UK is strong, and the opportunity to seek further improvement and recognition is welcomed by our community. We accredit 348 programmes in 48 UK universities and a further 41 programmes at 26 overseas universities (including the USA, Singapore and Australia. In the recent REF 91% of chemistry departments assessed were ranked as either internationally excellent or world leading<sup>8</sup>.
- We strongly advise that implementation of the proposed changes should not be rushed, thus mitigating risks of the unintended consequences we have identified and costly administration.
- We promote inclusion and diversity amongst our workforce, our membership and the wider community, and strongly support all efforts to improve access to HE.
- We would be happy to be involved in further technical consultations and share our expertise of the chemical sciences in HE.

*About us*

With over 54,000 members and a knowledge business that spans the globe, the Royal Society of Chemistry is the UK's professional body for chemical scientists, supporting and representing our members and bringing together chemical scientists from all over the world.

A not-for-profit organisation with a heritage that spans 175 years, we invest in educating future generations of scientists, we raise and maintain standards and work with industry and academia to promote collaboration and innovation. We advise governments on policy and we promote the talent, information and ideas that lead to great advances in science.

*Contact*

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<sup>8</sup><http://www.ref.ac.uk/media/ref/content/expanel/member/Main%20Panel%20B%20overview%20report.pdf>

## Public sector equality duty

### Question 1:

#### a) What are your views on the potential equality impacts of the proposals and other plans in this consultation?

Whilst there are potential positive impacts of the proposals, the specific impact on equality and diversity cannot be accurately, or fully, assessed because there is currently insufficient detail provided. From the information available, we have identified some risks of negative impacts, expanded in detail below, which we hope will be carefully considered.

#### b) Are there any equality impacts that we have not considered?

Yes       No       Not sure

We would like to see consideration of the costs to a student other than the tuition fees charged by HEIs. These account for the majority of the costs of being a student<sup>9</sup>, and strongly determine the choices made by students from less advantaged backgrounds<sup>10</sup>. The evidence shows that students from less advantaged backgrounds are much more likely to choose a local HEI in order to reduce costs. They are also likely to take increasing amounts of part-time paid work in order to increase their income. Increased information about Teaching Excellence is unlikely to compensate for these very real constraints, nor for the effect that they will have on the range of subjects that students can choose to study, and their attainment at the end of their course of study.

The proposals make the assumption that a significant proportion of students make “poor” choices because they are not able to access transparent information about teaching. It assumes that were they able to do so, students would be able to choose between a wide variety of courses and providers across the country. Providing more information will not address the geographical or financial constraints.

The proposals also assume that “better” student choice in the short term will enable them to be more successful in the labour market in the future, thereby driving social mobility. However, we know for example that future earnings potential is only one factor in students’ choice of subject and HEI<sup>11</sup>. We also know that many of the important employability skills that they will learn at university will not be those that they have been formally taught, but will be derived from their wider “student experience”.

It is suggested that the introduction of student fees has not reduced the rate at which students from less advantaged backgrounds enter HE. However, the UK data is very

<sup>9</sup> *What are the costs of study and living?* National Union of Students (2013)

<http://www.nus.org.uk/en/advice/money-and-funding/average-costs-of-living-and-study/>

<sup>10</sup> *Does Cost Matter?* Atherton, G., Jones, S. & Hall, A. (2015)

<sup>11</sup> *Does Cost Matter?* Atherton, G., Jones, S. & Hall, A. (2015)

limited, with only a single fee band, and a short time series. What evidence that there is suggests that there is price elasticity within students' choices<sup>12</sup>, and it is not clear what the potential impacts would be of differentiated fees between HEIs.

We would like to see some consideration of the potential impacts of the TEF on part time study, which is one of the most significant ways that people from less advantaged backgrounds enter HE. Recent changes to HE funding have contributed to the large decline in numbers taking on part time study<sup>13</sup>, and we would expect this to reduce diversity in HE in the medium to long term.

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<sup>12</sup> *Does Cost Matter?* Atherton, G., Jones, S. & Hall, A. (2015)

<sup>13</sup> *It's the finance, stupid! The decline of part-time higher education and what to do about it*, Higher Education Policy Institute (edited by Nick Hillman) [http://www.hepi.ac.uk/wp-content/uploads/2015/10/part-time\\_web.pdf](http://www.hepi.ac.uk/wp-content/uploads/2015/10/part-time_web.pdf)

## Teaching Excellence Framework (TEF) (Part A: Chapters 1-3)

### Overarching comments

As a professional body we are pleased to support the government's commitment to recognising and improving the quality of teaching in HE. We are the accrediting body for chemical science degrees in the UK and therefore have experience of judging quality in higher education<sup>14</sup>. We agree that teaching and research should have parity of status within HE.

We are pleased that consideration has been given in the proposals to the differences between subjects. However, we believe that more explicit consideration should be afforded to the diversity of providers as well. We would therefore not advocate comparing courses and institutions using a "one size fits all model".

The Government has identified the need for mechanisms to ensure teaching excellence is appropriately recognised. However, we are concerned the proposals as they currently stand would not support the development of a TEF that is fit for purpose in achieving this. There are several components of the TEF that warrant further consideration including:

- The impacts of linking TEF to student fee increases; (See answer to Question 8 for more detail)
- The appropriateness of current common metrics which are not considered a good measure of teaching excellence; (See answer to Question 11 for more detail)
- The conflation of teaching quality and social mobility (see answer to Question 12c for more detail)

Therefore, we would recommend that more time is taken to ensure that the TEF is appropriate, accepted by the sector and valuable to the intended audience, *i.e.* prospective students. The Government should consider small scale piloting in order to achieve this.

The Royal Society of Chemistry would welcome the opportunity to comment further on these issues and to offer our extensive experience of degree level accreditation as Government plans develop. We also look forward to commenting on the Technical Consultation when it is launched.

We are supportive of the ambition to improve access to higher education for students from disadvantaged and underrepresented backgrounds. All providers should have mechanisms in place to support the access and retention of students from disadvantaged and underrepresented backgrounds.

**Question 2: How can information from the TEF be used to better inform student and employer decision making? Please quantify these benefits as far as you can.**

The TEF would be just one of a range of pieces of evidence that employers and students would use in their decision making process.

<sup>14</sup> Further information about our accreditation of degrees programmes can be found: [http://www.rsc.org/images/accreditation-degree-programme\\_tcm18-151306.pdf](http://www.rsc.org/images/accreditation-degree-programme_tcm18-151306.pdf)

It is important that if the TEF is in place, there should be appropriate evaluation of how employers and students utilise the new information.

**Question 5: Do you agree with the proposals on:**

a) what would constitute a 'successful' QA review

Yes       No       Not sure

We agree that for initial TEF assessments the current QAA mechanism is utilised before any new system is introduced. The current QAA system utilises Subject Benchmark Statements which were developed with input from professional bodies and therefore providers and future employers. These benchmark statements are generally aligned to Professional Statutory and Regulatory Body (PSRB) accreditation practices. We expect PSRB accreditation to be an integral part in any new system for the reasons outlined above.

**c) the proposal to move to differentiated levels of TEF from year two?**

Yes       **No**       Not sure

Moving to differentiated levels could make TEF more meaningful. However, the levels could potentially drive particular behaviours within an institution that do not necessarily improve the teaching quality or the student experience.

Differentiated levels should only be introduced if and when there is an agreed suitable set of level descriptors, an agreed definition of excellent teaching together with an agreed set of metrics/assessment mechanisms. There should be a wide consensus from the sector that these differentiated levels are fit for purpose.

Differentiation from level 2 upwards, if implemented, would need to ensure the diversity of the higher education sector is not stifled. Evidence should be appropriately benchmarked at the subject level and to different types of institution. This includes institutions of different sizes, with different intakes, and some driven by local need.

Chemistry and other sciences are practical in nature and often have a complex teaching structure, including lectures, tutorials, laboratory work, problem-solving and research projects. It would not be appropriate or meaningful to directly compare the quality of teaching in a chemistry degree to the quality of teaching in another subject, particularly a non-STEM subject, using a single set of criteria. In the longer term, once reliability and confidence in the system can be demonstrated, differentiated levels should be awarded (and this data accessible to students) at the subject level, even if aggregated to create an institution-wide level. This would ensure that students and prospective students are able to see the TEF level of their chosen subject, independently of the TEF level awarded to the institution.



We would suggest that if more time is needed to ensure the differentiated levels are a robust and reliable measure of teaching excellence, then the government should postpone the implementation of awarding higher TEF levels until this work is complete.

Given the diversity of the sector, the scale of the challenge of implementing a differentiating system and the likely administrative costs, the Government should also consider piloting the process on a smaller scale.

#### **Question 6: Do you agree with the proposed approach to TEF assessments on**

##### **Timing?**

Yes       No       **Not sure**

##### **Assessment panels?**

Yes       No       **Not sure**

##### **and process?**

Yes       No       **Not sure**

We broadly agree with the principles in the proposed approach but more detail is required in order to make a full assessment of its appropriateness. Any approach should balance the need to measure teaching quality robustly whilst minimising administrative burden. There is a risk that the implementation of a TEF could actually drive down teaching quality if it involves an overly burdensome assessment process, since it might take staff time away from teaching.

The proposals suggest that, in time, panels will be convened for each subject and that this will be moderated to ensure comparability across disciplines. It has been demonstrated by the REF that such a peer review system can impose high costs and administrative burden on HEIs. The Royal Society of Chemistry currently operates a peer-review accreditation function for degree level courses both within the UK and overseas<sup>15</sup>. We have also worked with QAA on the development of potential QA models and chemistry subject benchmarks. We would very much welcome the opportunity to share our experience of developing assessments for chemistry, including the make-up of chemistry-specific panels.

It is vital there are different benchmarks for different subjects (see answer to question 5c for more detail). However, there is a risk that the evaluation would not be fit for purpose if criteria are overly simplistic. Publishing the panel's judgement on

<sup>15</sup> Further information about our accreditation of degrees programmes can be found: [http://www.rsc.org/images/accreditation-degree-programme\\_tcm18-151306.pdf](http://www.rsc.org/images/accreditation-degree-programme_tcm18-151306.pdf)

each criterion is something we would advocate if this information would be beneficial to students and to driving improvement in teaching quality.

As currently proposed, visits to institutions will not form part of the TEF assessment process. In our experience, teaching quality and learning environment are more appropriately assessed by observing teaching and seeing the learning environment. Site visits are a very important aspect of our accreditation assessment process. However, the past Teaching Quality Assessment (TQA) regime also included assessors observing teaching and was not widely accepted by the sector. The TQA was found to be expensive and burdensome and so there is a need for caution in taking too similar an approach to the TQA. If visits are not to form part of the routine TEF assessment, then at the very least the assessment panel would need to judge that the information they receive from an institution includes appropriate evidence of site visits where teaching excellence has been observed such as PSRB (e.g. Royal Society of Chemistry) accreditation, external examiners, *etc.* Where this evidence cannot be found, the panels should consider a visit before making a judgement.

**Question 7: How can we minimise any administrative burdens on institutions? Please provide any evidence relating to the potential administrative costs and benefits to institutions of the proposals set out in this document.**

At present the information provided makes it difficult to answer this question in detail.

Alignment of the TEF with existing processes would significantly reduce the administrative burden for HEIs, for example PSRB accreditation (like Royal Society of Chemistry accreditation) and external examining.

**Question 8: Do you agree with the proposed approach to differentiation and award as TEF develops over time?**

Yes       No       Not sure

We are concerned that there isn't sufficient granularity in the available data to differentiate to the TEF levels as proposed. The choice of four differentiated levels seems to be somewhat arbitrary. More detail is required on how judgements between the levels would be made and how each level would affect the fee structure of the institution.

The TEF should allow flexibility to develop how assessments are made over time. The metrics and assessments that are used should be evaluated appropriately before being used again. It is also important though to balance the need for innovation in assessments with the burden on teaching staff of constantly changing targets.

### Subject-level assessments

Subject-level assessment information should be considered, and published so that it is accessible to students (see our response to Question 5c). However, there is a risk that innovation and collaboration within subject communities could be stifled. UK Chemistry departments currently collaborate and there is strong community of practitioners driving up standards and raising the profile of teaching. When the TEF is implemented, care should be taken to avoid forcing this community to become competitors, reducing collaboration and sharing of good practice.

There is also a need to ensure that the impact is investigated carefully of a high cost and nationally strategically important subject like chemistry on the financial planning of institutions. Our research shows that whilst investment in chemistry is critical to the future growth of the UK economy, UK chemistry departments operate at a substantial deficit<sup>16,17</sup>. It is therefore important to take steps to ensure that funding streams for chemistry departments are both set correctly and protected to ensure their continued contribution to the UK economy.

### Linking TEF levels to fee increases

At this point in time we would advise against the linking of student fees to differentiated TEF assessments, at least until the process is bedded-in and proven to be effective and robust. We have spoken to a broad range of the chemistry community in higher education and most institutions are of the view that reputational incentives would be sufficient reason for them to apply for higher TEF levels.

At times of extremely low inflation, the differences in fees charged/income for HEIs would be very small. In order to link to the differentiated levels of TEF, there is a risk that fees would need to increase by more than the inflation-linked rise that is currently proposed in order to provide sufficient financial return for the effort required.

Linking fees to differentiated TEF levels could be detrimental for providers and students:

- Departments who can afford to spend more resources on attaining higher levels could be favoured. Since the higher levels are linked to higher fees, then there is a risk that the richer departments would get richer, and the less well financed departments would be unable to secure additional resources.
- Conversely, there is a risk that students would choose a course at a cheaper institution if they feel they cannot afford a higher-rated institution, narrowing participation at institutions deemed to have better quality teaching.

<sup>16</sup> *The Finances of Chemistry and Physics Departments in UK Universities: Third Review*, Royal Society of Chemistry and Institute of Physics (2015) <http://www.rsc.org/globalassets/04-campaigning-outreach/policy/education-policy/university-chemistry-and-physics-finances-report.pdf>

<sup>17</sup> *Underfunded and under pressure: the finances of UK chemistry and physics departments*, Royal Society of Chemistry and Institute of Physics (2015) <http://www.rsc.org/globalassets/04-campaigning-outreach/policy/education-policy/university-chemistry-and-physics-finances-policy-briefing.pdf>

- There could be a great deal of confusion for students because some may be paying a higher fee for a course with a lower TEF level (or *vice versa*) because the fees are linked to the institution and not the course. Having differential fees for each subject would, however, also be problematic. This could narrow the participation for subjects with higher fees within an institution; particularly for those students who are often geographically constrained by their circumstances (so would be less likely to take the same subject at a different institution not in their local area).
- There is a lack of clarity over the impact on fees if an institution received a lower TEF score than previously.
- Fluctuations in inflation year-on-year are likely to influence the rate that fees increase more than the actual quality of teaching in an institution. This could be confusing to students and unfair to providers who could receive smaller financial incentives depending on the year they achieve a particular TEF level.

Some of these issues might be mitigated if the increased financial incentive for institutions came from the teaching grant (where it is available for high cost subjects) rather than from student fees.

**Question 10: Do you agree with the focus on teaching quality, learning environment, student outcomes and learning gain?**

Yes       No       **Not sure**

We support the focus on these areas in principle. However, there is a need for the areas of focus to be more appropriately defined. In addition, the areas of focus are not reflected appropriately in the common metrics proposed to measure them: NSS; DLHE; continuation data. (See question 11 for more detail on the common metrics.)

**Question 11: Do you agree with the proposed approach to the evidence used to make TEF assessments - common metrics derived from the national databases supported by evidence from the provider?**

Yes       **No**       Not sure

There is a conflict between having a common set of metrics whilst at the same time promoting a diversity of provision<sup>18</sup>. More clarity is needed about how much emphasis would be placed on the common metrics compared to the evidence from the provider. In line with the promotion of diversity within the sector, the additional evidence from the provider is likely to have more value than the common metrics (as currently defined).

<sup>18</sup> *The Metric Tide: Report of the Independent Review of the Role of Metrics in Research Assessment and Management*, Wilsdon et al (2015)  
[http://www.hefce.ac.uk/media/HEFCE,2014/Content/Pubs/Independentresearch/2015/The,Metric,Tide/2015\\_metric\\_tide.pdf](http://www.hefce.ac.uk/media/HEFCE,2014/Content/Pubs/Independentresearch/2015/The,Metric,Tide/2015_metric_tide.pdf)

### Common metrics

There are several reasons why the common metrics (National Student Survey (NSS), Destinations of Leavers from HE (DLHE), continuation data) currently proposed are not fit for purpose:

- The proposed metrics do not provide direct evidence for the foci defined (teaching quality, learning environment, student outcomes and learning gain).
- The NSS does not have an appropriate baseline, students are not always the best placed to judge the quality of their teaching, and often it takes students longer to realise benefits than the timescale of the NSS.
- DLHE is taken too soon after graduation and many other factors influence destination beyond teaching quality.
- Retention/continuation rate is influenced by many variables beyond teaching quality, including UCAS points on entry<sup>19</sup>.
- “Value added”/learning gain was notably absent from the common metrics. This should be included in some way if it could be appropriately measured and benchmarked for different subjects and different institution types.

The common metrics need to be revised if TEF assessments are to be fit for purpose. There is a case for the number of common metrics to be increased so they each have less weight, or for the common metrics to have less emphasis than the information from the provider. We also have concerns that the proposed metrics were not created explicitly for the TEF and are purely used for convenience. We would support the development of new metrics that have been designed specifically for the TEF, if they are proven to be appropriate measures of teaching quality, learning environment, student outcomes and learning gain<sup>20</sup>. Whatever metrics are used, care needs to be taken to ensure that the risks of gaming are mitigated as much as possible.

### Information from the provider

The evidence from the provider should be more clearly defined. For example, there is a lack of clarity on:

- How much evidence can each institution provide beyond the common metrics?
- How subject-specific metrics/evidence will be utilised?
- Whether different providers will be compared on the same evidence? (How will they be appropriately benchmarked?)

<sup>19</sup> *Undergraduate retention and attainment across the disciplines*, Higher Education Academy (2014) [https://www.heacademy.ac.uk/sites/default/files/resources/undergraduate\\_retention\\_and\\_attainment\\_across\\_the\\_disciplines.pdf](https://www.heacademy.ac.uk/sites/default/files/resources/undergraduate_retention_and_attainment_across_the_disciplines.pdf)

<sup>20</sup> The outcomes from the Hefce-funded projects to pilot measures of learning gain should be monitored in case they help identify appropriate metrics for this purpose <http://www.hefce.ac.uk/news/newsarchive/2015/Name,105306,en.html>

When measuring teaching excellence (or proxies of teaching excellence) there would be value in using a variety of different sources of information/evidence that look at more than student outcomes, including for example:

- PSRB Accreditation - The Royal Society of Chemistry accreditation process ensures that the skills essential for careers within the chemical sciences are developed. Specifically, we have key requirements on the numbers of laboratory practical hours, and development of professional skills which are transferable outside of the core discipline. Both these aspects have been highlighted by employers as extremely important graduate skill sets.
- External Examiners. Although they are currently not mentioned in the Green Paper, the role played by external examiners was recognised in the recent Quality Assessment Review<sup>21</sup>. An improvement to this system would be to ensure external examiners have no conflict of interest, e.g. alumni.
- Most departments already undergo a periodic review every 3-5 years. Some universities use external input into these reviews which we consider good practice.
- The Green Paper emphasises the importance of employer needs, so a mechanism for measuring/recognising this within the TEF assessment would be necessary, particularly for subjects like chemistry which have a “direct line of sight” to employment in a range of sectors.
- Employment data that is more longitudinal than the DLHE, including data taken several years after graduation, should be used as this would provide a much better indication of longer term graduate employability.
- Staff: student ratio.
- Teaching qualifications, training and recognition of staff could give an indication of the value and support given to teaching staff within an institution. This might include, for example, PGCertHE, HEA Fellowship, CSciTeach.
- Career progression opportunities for teaching staff.
- Level of student support provided for disadvantaged groups.
- Investment in facilities.
- Investment in teaching and learning.
- Engagement with education research could highlight the importance placed on improving teaching practices within an institution and the sharing of this knowledge more widely.

It is important to reiterate that any measures of teaching excellence should be appropriately benchmarked and contextualised by subject and provider type (see answer to Question 5c for more detail).

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<sup>21</sup> Future approaches to quality assessment in England, Wales and Northern Ireland, Hefce (2015)  
<http://www.hefce.ac.uk/reg/review/>

We are looking forward to seeing the technical consultation, after which a more informed decision could be made about whether the proposed approach is appropriate and feasible.

## Social mobility and widening participation (Part A: Chapter 4)

### Question 12:

a) Do you agree with the proposals to further improve access and success for students from disadvantaged backgrounds and black and minority ethnic (BME) backgrounds?

Not sure

Whilst there are some positive intentions outlined in Chapter 4, the specific impact on equality and diversity cannot be accurately, or fully, assessed because there is currently insufficient detail provided on what the specific mechanisms will look like.

From the wider information available in the proposals, we have identified some risks of negative impacts (see questions 1b and 8 of potential negative impacts to equality and diversity), which we hope will be carefully considered.

b) What other groups or measures should the Government consider?

Although the proposals set out in this section may have value when looked at in isolation, they need to be seen in the context of the other proposals in the paper, which treat HE as a “product” which students “consume”. However, the evidence shows that the issues around students’ HE choices are hugely complex and go far beyond any economic cost-benefit analysis, however well-informed<sup>22</sup>. Therefore, whilst an increase in the information available to students as they make their choices is worthwhile, it is not going to make a significant difference when taken alongside all social and cultural pressures. We hope that this broader range of factors will be carefully considered.

In addition to using the term “disadvantaged”, which can be difficult to define, we would suggest using “under-represented”, which is more quantifiable at an institution and course level, and consequently can be more effectively monitored. Within this definition, it is clear from the evidence available<sup>23</sup> that Socio-Economic Status is a significant driver of differential participation in HE, and we would recommend that this is used as one of the dimensions, alongside ethnicity, gender and disability.

<sup>22</sup> *Does Cost Matter?* Atherton, G., Jones, S. & Hall, A. (2015)

<sup>23</sup> *Socio-economic differences in higher education participation and outcomes.* Crawford, Presentation to the Institute of Physics Dec 2014



**Question 13:**

**a) What potential benefits for decision and policy making in relation to improving access might arise from additional data being available?**

We find that a lack of accessible coherent data and related evidence can often be the limiting factor in driving and developing new initiatives to support accessibility and improve diversity in STEM subjects.

Government should improve the coordination, collection, accessibility and monitoring of diversity data across the whole education system. Longitudinal tracking in relation to data should be coordinated and linked through education at all levels, and into employment (*e.g.* to include data from UCAS, HESA and DLHE). This would require centralised and robust processes to limit the burden on individual institutions. The purposes of such data collection should be clearly identified and communicated.

Appropriately aggregated data should be made more widely available for more detailed interrogation by interested stakeholders *e.g.* to support discipline-specific analysis.

## Simplifying the higher education architecture (Part C)

### Question 18:

#### a) Do you agree with the proposed changes to the higher education architecture?

- Yes                       No                       Not sure

We welcome the proposal of a statutory “arms-length” body (the Office for Students) at the heart of the HE architecture. As well as the potential for a single, overarching voice for students’ interest in HE within Government to have more impact, the proposals recognise the importance of maintaining institutional autonomy: this independence is a strength of the UK HE sector.

Efficiency savings could be achieved by sharing the skills and expertise of the current range of bodies within one organisation, but care must be taken not to lose any of this expertise or the functions currently covered by the existing HE architecture as the changes are implemented.

In many HE Institutions we see positive interactions between teaching and research responsibilities resulting in improved student experience and employability, contributing to the diversity of UK university chemistry departments, a key strength of the UK system.<sup>24</sup> By dividing the responsibilities of Hefce into a teaching-related body (OfS) and a research-focussed body (RUK) there is a risk that there will be a shift towards “teaching focussed” and “research focussed” institutions, and a loss of these opportunities for enhanced student experience. The benefits of these interactions include:

- Incorporating an institution’s research strengths into the teaching curriculum ensures that students’ subject knowledge, practical and investigative skills are greatly enhanced.
- A synergy between research and teaching can also offer significant benefits to the UK’s economy and society through knowledge exchange activities like the Higher Education Innovation Fund (HEIF), which draws on both research grants and teaching funding.
- There are also broader local connections that bring together students, researchers and local communities, such as universities’ interactions with Local Enterprise Partnerships, which would be much harder to operate under an architecture that separates teaching and research.
- Postgraduate students work at the interface between teaching and research: whilst still being trained as independent researchers, these students often provide

<sup>24</sup> *Higher Education in the Learning Society*, Dearing, 1997.

teaching support to undergraduates as well as making a vital contribution to their department's research.

**b) To what extent should the Office for Students (OfS) have the power to contract out its functions to separate bodies?**

Fully       Partially       Not at all

**c) If you agree, which functions should the OfS be able to contract out?**

The Office for Students should be able to contract out some functions, especially where impartiality is required. It is essential, for example, that quality assurance remains independent and is not subject to short-term changes/pressures. This is currently enabled by Hefce contracting out this function to the Quality Assurance Agency (QAA).

**d) What are your views on the proposed options for allocating Teaching Grant?**

**Option 1: BIS Ministers set strategic priorities and BIS officials determine formula.**

Agree       Disagree       Not sure

**Option 2: BIS Minister sets strategic priorities and allocation responsibilities divested to OfS**

Agree       Disagree       Not sure

It is essential that the teaching grant allocations reflect long-term needs rather than short term political pressures. The current statutes of Hefce prevent ministers from affecting institution- or subject-specific funding decisions, which ensures the HE sector retains an appropriate level of autonomy.

**Question 19: Do you agree with the proposal for a single, transparent and light touch regulatory framework for every higher education provider?**

Yes       No       Not sure

A simplified, single regulatory framework has advantages and disadvantages. How change is managed and communicated will have a significant impact on HE providers. It is important the regulatory framework is transparent and finds the right balance between being light-touch and being credible. This will be a challenge and as discussed in question 5c, running a pilot scheme on a smaller scale would help mitigate risks in the implementation.

**Question 21:****a) Do you agree with the proposed duties and powers of the Office for Students?**

Yes       No       **Not sure**

The Office for Students will have a duty to promote primarily the interests of students and not providers, but the Office should value providers' input to the whole system. Many providers bring a long-term perspective based on years of experience that students may not. The Office for Students should seek to work with the National Union of Students, whose mission is to “champions students to shape the future of education”, rather than duplicating their duties.

It is likely that student views gathered in the short term would be very different from those gathered 1, 2 or 5 years after the completion of studies. We therefore recommend that a period of reflection is built into the data gathering process as students embark on future careers, resulting in more balanced assessments of the suitability of teaching provision.

It is vital in the context of the whole architecture not to confuse the student experience with teaching quality experience: these are two very different aspects and students often confuse these two points when feeding back as part of the institutional university framework.

One of the duties mentioned for the Office for Students is a potential power to validate providers' courses. We would urge Government to make use of existing professional body and learned society accreditation frameworks as part of the validation process. We would encourage the use of QAA Subject Statements which were developed through engagement with professional bodies and therefore potential employers. This would avoid creating an additional layer of administrative burden and cost to providers as well as offering valuable independent input.

## Reducing complexity and bureaucracy in research funding (Part D)

### **Question 24: In light of the proposed changes to the institutional framework for higher education, and the forthcoming Nurse Review, what are your views on the future design of the institutional research landscape?**

Research UK and the proposed Ministerial Committee have together the potential to bring many benefits in terms of allowing the development of a coherent, overarching strategy for research in the UK. As the Nurse Review recommendations are implemented care must be taken to avoid a partisan landscape which undergoes drastic change on parliamentary timescales or is heavily subject to political factors.

#### Funding

We welcome the recent real-terms ring-fence of the resource Science Budget and renewed commitment to capital expenditure. The formation of RUK and the proposed Ministerial Committee together provide an opportunity to connect the strategies for capital and non-capital investment in research and to develop a coherent, transparent and 'batteries included' approach to capital investment.

Bringing together the bodies that support research has the potential to bring greater coherence to the research and innovation landscape, but the benefits afforded by having individual bodies with oversight and understanding of different research areas and funding mechanisms (grants and QR) must be retained. There remain a number of uncertainties around the precise proposals and we look forward to commenting on a more detailed government plan in due course.

#### Interdisciplinary Research, Global Challenges and Core Disciplines

One key area where a need for coordination is important is interdisciplinary research. In the current system, research that falls between two research councils has suffered from confusion over which Council would support it and over who would peer-review it. Hence the new RUK interdisciplinary research funding stream is welcome. In order to support curiosity-driven interdisciplinary research areas as well as challenge-based interdisciplinary research, this stream should offer both managed and responsive calls, in a similar fashion to that currently awarded by the Research Councils.

The new global challenges fund is another example where effective mechanisms will be needed to assess the kinds of interdisciplinary and multi-disciplinary research approaches that are often needed to develop and deploy new technologies.

Whilst a specific focus on improving support for interdisciplinary research and global challenges is welcome, it is also crucial that support for core disciplines, like chemistry, is maintained. In addition to the vital importance of curiosity-driven

science as part of a long-term scientific vision, core disciplines also underpin and drive current and future developments in global challenges.

### Oversight

A thriving national research system requires stability and long-term planning. Giving responsibility for appointing the CEO and Board of RUK to the Minister for Universities and Science, and the introduction of a Ministerial Committee on research bring the UK's research system much closer to government than it has been historically. Strategic involvement by government must be at an overarching level, with decisions made in a transparent way, uninfluenced by short-term political factors.

In his report, Sir Paul has laid out a strong case for the introduction of a high level RUK executive board and single point of contact between government and the research councils. Again, it is essential that this board does not become partisan to the extent that large-scale change is anticipated across the research sector with every election cycle.

More detail is needed on the methods of appointment, types of people likely to be appointed and the eventual terms of reference of the RUK Executive Board and we look forward to commenting on these in due course.

We would further be interested to understand how Research UK will be represented upon the proposed Ministerial Committee. Whilst we would not expect all research bodies to be represented on the committee individually, the scale of RUK's responsibility for R&D means that it should have a voice in that high level strategy setting.

### **Question 25:**

#### **a) What safeguards would you want to see in place in the event that dual funding was operated within a single organisation?**

Both the Green Paper and Sir Paul's review rightly highlight the importance of the UK's dual-funding system for supporting our world-leading research.

The long-term stability associated with QR funding (for the periods between research evaluation exercises) and the discretion which the universities have to administer it helps maintain a dynamic and world-class research capability. It allows research institutions to:

- Take a longer-term approach to maintaining and continually developing their research capability;
- Direct resources in a strategic manner most appropriate for individual departments, schools and research areas;

- Leverage funds from elsewhere including from research funding agencies, research charities and industry;
- Meet any shortfall in the full economic cost of research;
- Invest in new or underperforming but strategically important areas;
- Support researchers at early stages in their career, or between research grants
- Fund curiosity-driven and interdisciplinary research.

While we do not propose here a specific mechanism for protecting the independence of the QR funding stream, we emphasise that it is essential that both the QR funding stream and the means of evaluating research and administering funding remain formally separate from government. If brought within RUK both must remain distinct from grants funding.

Overseeing QR funding and the REF requires high-level leadership and appropriate staff resources. For QR funding to be adequately protected the entity awarding it should retain high-level leadership and representation, for example at the same level as the RUK Board. The concept of QR funding and its on-going evolution and allocation require staff with expertise and understanding of the evolving research landscape, the pressures on universities and the complexity of research evaluation.

Aside from losing the structural benefits of dual-funding, it is important that any change to QR funding for English institutions does not impact the allocation of grant funding to institutions throughout the UK. If the QR funding stream for England is brought under the auspices of RUK, this will be another factor to consider in ensuring that QR funding allocations and decisions about them are completely separate from grant funding.

**Question 26: What are the benefits of the REF to a) your institution and b) to the wider sector? How can we ensure they are preserved?**

In our discussions with the chemistry community there were mixed views about the value of the REF itself, although there was broad acknowledgement of the need for some mechanism to determine QR funding levels. In addition to this, other benefits of the REF are:

- The REF can encourage departments to refresh and renew their strategies. There was a feeling amongst some in our community that holding the REF at regular intervals gives universities targets at which to aim, and an incentive to revisit and renew their strategies. This can bring extra burden to departments, but also ensures a level of dynamism.
- The REF encourages staff movement within the 'transfer window'. The REF also encourages the movement of staff between institutions and gives incentives for departments to hire early career researchers, especially those who can bring earlier papers for their first REF exercise to a permanent position. This can also

be disruptive to individual departments, however, and constitutes some of the 'gaming' that is disliked within the REF system.

- Identifying and recording impact demonstrates the value of the research sector. Our members have commented on the benefit of having the information collated in the REF 2014 Main Panel B report which shows the strength of UK research in chemistry and many other disciplines. In our own advocacy work related to science funding we have found that the Impact Case Studies and wider statistics from the REF are useful in demonstrating the return on UK Government investment in research. It is hard to imagine how this in-depth information could be compiled without a REF-type exercise.

### **Question 27: How would you suggest the burden of REF exercises is reduced?**

The costs of the REF should be reduced where possible, but a balance will need to be struck to maintain the quality and effectiveness of this exercise. The £240m cost of the recent REF equates to 2.4% of the funding delivered over 6 years<sup>25</sup> and any efficiencies should ensure the positive qualities and benefits of the REF are retained and further load is not placed on research staff. In determining possible efficiencies it may be of interest to compare the REF to other similar funding distribution models around the world

Continuity and clarity in the measures of assessment for the REF will assist universities in reducing their financial burden. Ensuring universities are clear on what they will be judged by will allow them to record successes as the REF period continues rather than introducing a large workload of retrospective collection for the assessment itself.

Any metrics utilised within the REF must be considered carefully, and subject specific methodologies may be required. There has been much discussion about the introduction of metrics, including the analysis produced in the *Metric Tide* report<sup>26</sup>. There are both pros and cons associated with the introduction of these, and selection of appropriate metrics will require much thought. We heard concerns from our community that metrics such as the h-index, impact factor, and the number of papers published by an individual must be treated with caution and that such metrics may incite perverse incentives. As chemical sciences researchers typically publish in peer reviewed journals, and engage directly in activities like patenting, applying metrics may be easier than for other subjects; discipline-specific methodologies may be required.

<sup>25</sup> REF Accountability Review: Costs, benefits and burden, Technopolis (2015)  
[http://www.hefce.ac.uk/media/HEFCE,2014/Content/Pubs/Independentresearch/2015/REF,Accountability,Review,Costs,benefits,and,burden/2015\\_refreviewcosts.pdf](http://www.hefce.ac.uk/media/HEFCE,2014/Content/Pubs/Independentresearch/2015/REF,Accountability,Review,Costs,benefits,and,burden/2015_refreviewcosts.pdf)

<sup>26</sup> *The Metric Tide: Report of the Independent Review of the Role of Metrics in Research Assessment and Management*, Wilsdon et al (2015)



Metrics could allow the assessment of all research-active staff and research outputs (particularly in the form of journal articles) associated with a particular institution in a way that would be impossible by hand. This should not replace the peer-review system, but could provide wider insight and reduce the incentive for departments to deploy administration time moving staff numbers between research and teaching.

RCUK grant levels were shown to have good predictive power for funding levels under the previous Research Assessment Exercises. A paper from the UK Innovation Research Centre<sup>27</sup> found that the level of RCUK grants received by an institution was strongly correlated with the outcome of the Research Assessment Exercises in 2001 and 2008, with adjustment required only at highest and lowest funding levels. Use of research council grant success as a metric would of course weaken the barrier between QR and grant funding. However, if the distinctive characteristics of QR funding (longer timeframe, stability, discretion for universities) were maintained, and grant success was only one among a portfolio of measures, such a predictive trait could maintain the benefits of dual funding at decreased cost.

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<sup>27</sup> *The Dual Funding Structure for Research in the UK: Research Council and Funding Council Allocation Methods and the Pathways to Impact of UK Academics*, UK-Innovation Research Centre (2013)  
[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/181652/bis-13-545-dual-funding-structure-for-research-in-the-uk-research-council-and-funding-council-allocation-methods-and-the\\_pathways-to-impact-of-uk-academics.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/181652/bis-13-545-dual-funding-structure-for-research-in-the-uk-research-council-and-funding-council-allocation-methods-and-the_pathways-to-impact-of-uk-academics.pdf)

**Do you have any other comments that might aid the consultation process as a whole?**

We would be pleased to continue working with the Government as plans develop and further details are available.

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<input checked="" type="checkbox"/>	Professional Body
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*Thank you for taking the time to let us have your views. We do not intend to acknowledge receipt of individual responses unless you tick the box below.*

*Please acknowledge this reply*

*At BIS we carry out our research on many different topics and consultations. As your views are valuable to us, would it be okay if we were to contact you again from time to time either for research or to send through consultation documents?*

Yes

No

**BIS/15/623/RF**