R&D Tax Reliefs Review: Consultation on a single scheme – Response from Protect Pure Maths

1. Protect Pure Maths (PPM) was founded in collaboration with the London Mathematical Society and is funded by XTX Markets. The campaign's steering group includes the Presidents of the London Mathematical Society and the Institute for Mathematics and Its Applications. It is supported by the UK's learned mathematical societies, multiple universities, many prominent mathematicians and academics, and businesses. PPM seeks to advance all mathematical sciences in the UK, including in policy and parliament, and seeks to increase the visibility of the broader mathematical sciences and mathematical research community both in policy and with the public.

2. This consultation is supported by the London Mathematical Society and the Institute for Mathematics and its Applications.

Summary

3. In his 2022 Spring Statement, the then Chancellor of the Exchequer, Rt Hon Rishi Sunak MP, announced that the definition for R&D tax credits would be expanded to make it clear that all mathematical sciences would be included within R&D tax credits, including pure maths. Protect Pure Maths welcomed this announcement as well as the 7 March 2023 update to Government guidelines for R&D.

4. R&D tax relief boosts overall levels of activity, letting businesses decide where to invest, and can also stimulate growth in particular technologies.

5. Efforts to reduce the occurrence of fraudulent claims through the R&D tax credit scheme are welcome, but we hope that these efforts will not come at the expense of expanding support to SMEs conducting innovative and genuine R&D.

6. However, we are extremely disappointed by the proposed changes to the Government's R&D tax credit system announced in the Autumn Statement, which would cut the rebates available to small and medium-sized businesses[1]. This will prevent research that has the potential to convert UK SMEs into future leaders and large scale enterprises.

7. Anecdotal evidence from our supporters suggests that SMEs have already taken decisions to reduce their research activities and staff in light of this announcement. This is a further blow to mathematical research following the Government's reneged promise for additional research funding via UKRI[2].

8. Government should not make any additional cuts to R&D rates. Instead, the Government should encourage SMEs to undertake mathematical R&D in order to spur innovation and enhance the UK's competitiveness on a global stage.

9. Research in the mathematical sciences has contributed to exciting innovations and solutions in energy supply, resilience to extreme climate events such as floods, clinical outcomes, machine learning, and much more. The 2018 independent report "The era of mathematics" by Professor Philip Bond (known as the Bond Review)[3], found that in 2010 "*mathematics contributed over £200 billion annually to the UK economy … (and) there were over 2.8 million individuals in employment directly due to mathematical science research in the UK*". It stated that mathematical sciences research produces "*an outstanding rate of return on investment*" and estimated that

of engineering, physics, chemistry, and mathematical sciences, maths has the highest rate of return on investment as a benefit-to-cost ratio.

10. We support the proposal for a single R&D tax credit scheme, providing that any updated or changed scheme is made as straightforward and simple as possible. Navigating current tax credit schemes for R&D is time consuming and many SMEs have reported to PPM that they do not have the capacity to do so. As a result, many SMEs looking to undertake R&D in mathematical sciences are not able to take on new projects as they believe that the tax credit scheme will not apply to their work.

11. Since the 2022 Spring Statement, there has been a lack of clarity about how the inclusion of pure mathematics in R&D tax credits will be implemented. PPM has sought to engage with HM Treasury for further clarity, but information has not been forthcoming.

12. The government should provide a clear definition of eligible research and development across pure and applied mathematics, to alleviate the uncertainty felt by SMEs and institutions undertaking these collaborations and to encourage effective take-up of the R&D tax credit scheme.

13. The lack of a clear definition of "research and development", in particular how it applies to mathematics, hinders the ability of SMEs and institutions to apply for R&D tax credits. We welcome the change to the definition made on 7th March 2023 under the Guidelines on the Meaning of Research and Development, released during this consultation period, to include mathematical sciences under Guideline 15, "*whether or not they are advances in representing the nature and behaviour of the physical and material universe*"[3].

14. We agree with the recommendation of the Lords' Finance Bill Sub-committee report ("*Research and development tax relief and expenditure credit*"[3]) that there should be "*a new awareness campaign aimed at providing SMEs with accurate information about what is, and as importantly, what is not R&D.*"[4]

15. Any awareness campaign should be accompanied by guidance to researchers across the Knowledge Exchange community to ensure effective take-up of the scheme. We be delighted to draw on our network of supporters in academia and industry to provide relevant case studies to support the development of this definition and guidance. The professional societies would welcome the opportunity to work with the government to promote understanding of the scheme among the end user community and the professional research communities they support.

16. We support refinement of the Office for National Statistics' definition of R&D spending so that new maths based projects receive further investment. For example, the vast majority of quantum science funding is being invested into physics development rather than mathematics, despite both being required for proper development of the field. The algorithmic sciences could harness British talent, allowing the UK to become a world leader in a key research topic, but this requires a more holistic definition of R&D.

17. We consulted our supporters to compile selected answers to the *R&D Tax Reliefs Review: Consultation on a single scheme*. We have limited our responses to those areas where we have particular insights. The mathematical sciences community is

eager to contribute more to the UK's R&D landscape and contribute to the UK's ambition to be a science superpower.

CONSULTATION RESPONSE:

1. ***Do you agree a new scheme should be an above the line RDEC like credit? If not, what alternative would you propose?***

Our supporters have indicated that the SME scheme is much more straightforward than the RDEC scheme, and that schemes to claim tax credits should be made as simple as possible.

2. ***Does the taxability and subsequent different post tax net benefits impact your decision making when allocating R&D budgets?***

Our research indicates that some companies engaging in mathematical R&D do consider taxability and benefits to support the hiring and retention of staff.

However, for mathematics R&D, the taxability and different post-tax net benefits do not necessarily impact decision making when allocating R&D budgets. This is because the base assumption is that the research will not be eligible under current R&D tax relief schemes.

3. ***If you use RDEC now, is there anything in your view that should be changed?***

The RDEC scheme should be simplified to encourage uptake of the scheme and to support more research into mathematical sciences.

4. ***Do you agree the same treatment of subcontracting should apply to all claimants in the merged scheme?***

Yes, as this is likely to incentivise more SMEs to undertake R&D projects.

12. ***Do you consider the government should provide more generous support for different types of R&D or more R&D intensive companies relative to less R&D intensive companies?***

Government should incentivise SMEs, institutes and universities to undertake collaborative R&D projects including those that stem from the mathematical sciences.

PPM does not take a view on whether certain 'types' of R&D should be encouraged over others through more generous support; or whether "more" or "less" intensive R&D companies should receive varying degrees of support. We do not believe this would be a productive differentiation for R&D activities.

For example, if the R&D intensity of a company is measured by its proportional investment into R&D projects, this would have a disproportionate and negative impact on organisations that primarily engage in research that requires less up-front investment in things like laboratories or equipment. Mathematical sciences research typically comes with a lower price tag as it does not require the same physical laboratories or infrastructure required for research into other scientific fields. Measuring R&D intensity in this way might unintentionally discourage low cost but high impact engagement with mathematical research.

PPM strongly believes that all Government R&D programmes should explicitly support and encourage research in mathematical sciences.

14. If the schemes are merged do you agree the Government should implement the merged scheme on 'accounting periods starting on or after 1 April 2024?

If the schemes are merged, the Government should implement the merged scheme with adequate time and clear communication with the broader scientific and industrial research community. This is essential in order to ensure that the new scheme is fully understood by those it may impact.

15. How can Government ensure SMEs are supported in the transfer into a new scheme?

Future R&D tax credit schemes should be formulated to make it as straightforward as possible for SMEs to apply, with clear definitions of R&D, good and relevant examples and case studies, and guidance to help smaller organisations apply and receive the benefits.

The Government must provide relevant case studies and examples of how R&D tax credits can be used, in particular with regard to how they can apply to mathematical sciences research, as suggested by the Lords' Finance Bill Sub-committee report ("*Research and development tax relief and expenditure credit*"). The Government should leverage and strengthen knowledge exchange networks to encourage collaboration and to highlight success stories of R&D tax credit applications, particularly for mathematical sciences. The Government should welcome and encourage small and innovative start ups to apply for tax credits in order to support the development of new technologies and products.

References:
1. *UK tech start-ups call for rethink to R&D cuts that 'punish' innovation, Financial Times, 14 December 2022:* https://www.ft.com/content/e5fa8d66-8fc1-488f-a82c-3c39bdc52a2c

2. *"Maths Missing Millions", 2022: https://www.protectpuremaths.uk/news/dominic-cummings-joins-the-hunt-for-mathsmissingmillions*

3. *The Era of Mathematics: An Independent Review of Knowledge Exchange in the Mathematical Sciences – ESPRC, written by Professor Philip Bond, January 2018* https://www.ukri.org/wp-content/uploads/2022/07/EPSRC-050722-TheEraMathematics.pdf

4. *Research and development tax relief and expenditure credit, House of Lords Select Committee on Economic Affairs Finance Bill Sub-Committee, 31 January 2023:* https://publications.parliament.uk/pa/ld5803/ldselect/ldeconaf/137/13702.htm

5. *Guidelines on the Meaning of Research and Development for Tax Purposes, Issued 5 March 2004; updated 6 December 2010 – updated 7 March 2023 – Department for Business, Innovation and Skills.* https://www.gov.uk/government/publications/guidelines-on-the-meaning-of-research-and-development-for-tax-purposes#full-publication-update-history
   THE DEFINITION OF RESEARCH & DEVELOPMENT
   3. R&D for tax purposes takes place when a project seeks to achieve an advance in science or technology.
   4. The activities which directly contribute to achieving this advance in science or technology through the resolution of scientific or technological uncertainty are R&D.

OTHER DEFINITIONS
15B. Mathematical techniques are frequently used in science. From April 2023 mathematical advances in themselves are treated as science for the purposes of these Guidelines, whether or not they are advances in representing the nature and behaviour of the physical and material universe.

CONTACT INFORMATION

For further information on Protect Pure Maths and this consultation submission, please email puremaths@connectpa.co.uk or visit protectpuremaths.uk