



National Physical Laboratory

# Annual Report and Financial Statements

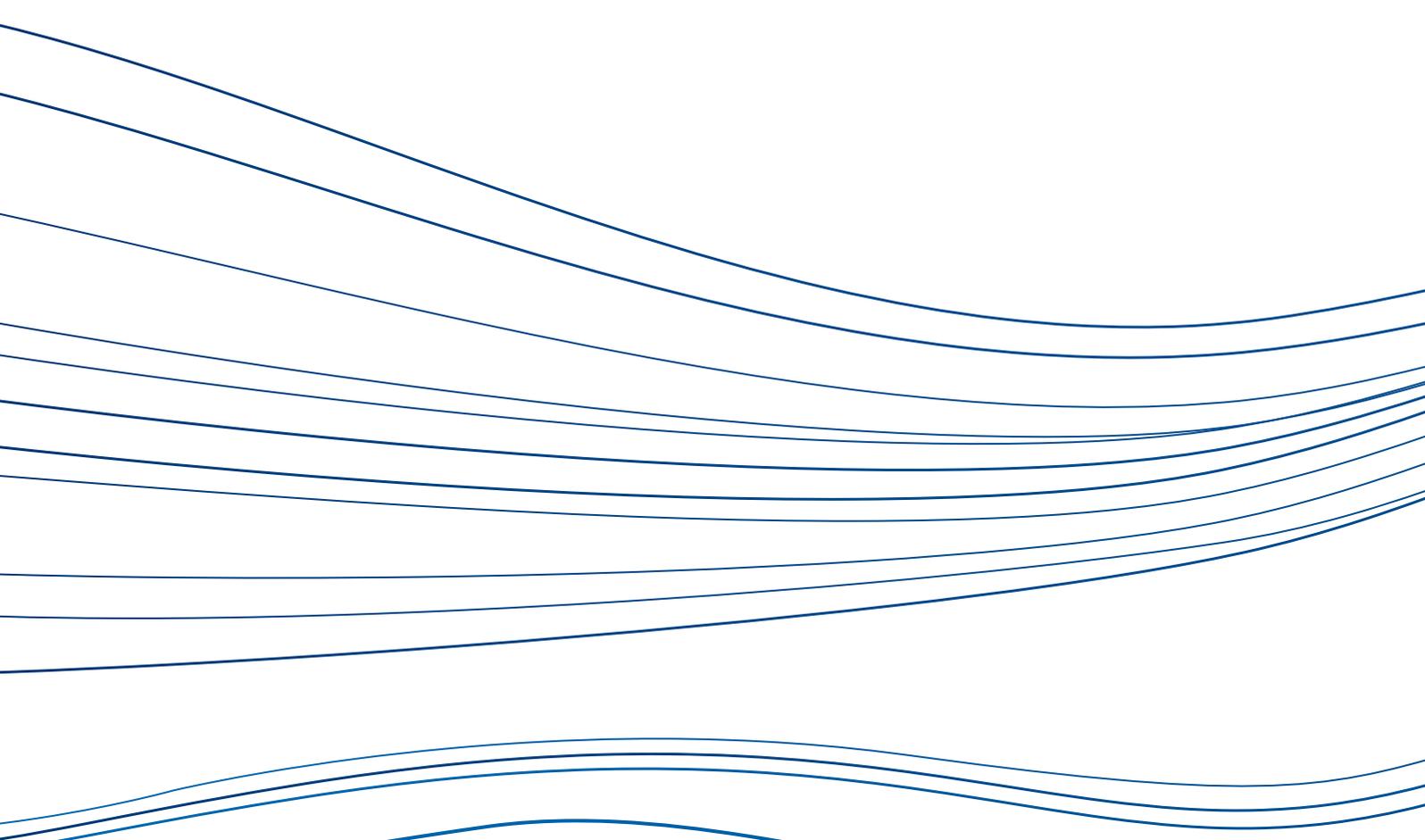
For the year ended 31 December 2022

Company Registration No: 02937881 (England and Wales)



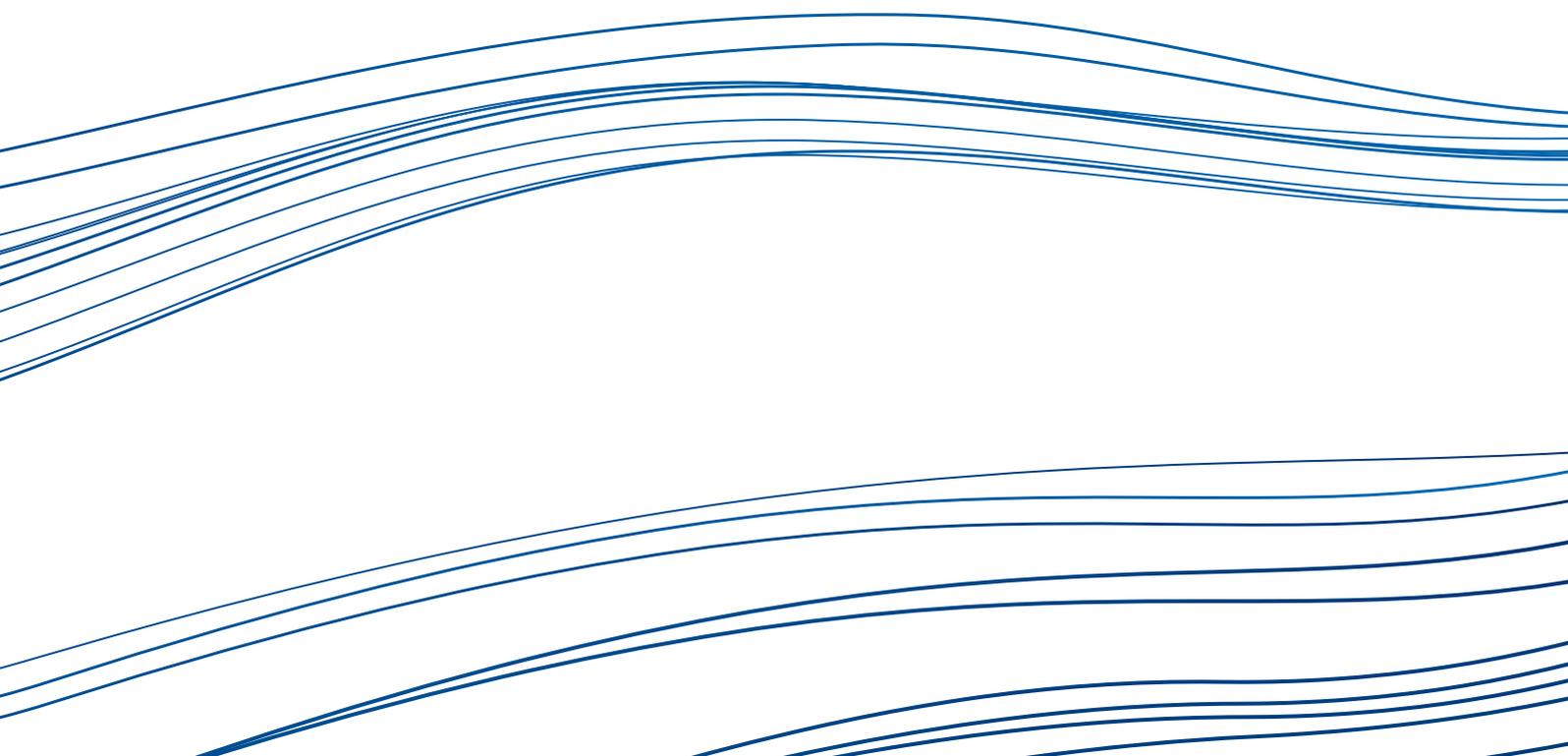


**National Physical Laboratory (NPL)**  
Annual Report and Financial Statements  
For the year ended 31 December 2022



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# Company Information

## Directors

Prof. G Reid (Chair)  
Dr P A Thompson  
Mr N J Perry (Senior Independent Non-Executive) (resigned 24 May 2022)  
Prof. Sir J R McDonald (Non-Executive)  
Prof. G M Lu (Non-Executive)  
Ms B Sutcliffe (Non-Executive) (resigned 28 September 2022)  
Ms P J Holt  
Dr R Hart (appointed 1 Jan 2022, resigned 14 February 2023)  
Ms C Quinn (Non- Executive)  
Ms H Wallace (Non- Executive) (appointed 11 Feb 2021, resigned 9 Jan 2023)  
Dr R Sorrell (Non- Executive) (appointed 1 July 2022)  
Dr C Bell (Senior Independent Non-Executive) (appointed 1 Aug 2022)  
Mr A Chang (Non- Executive) (appointed 1 Aug 2022)  
Ms C Schmolke (Non- Executive) (appointed 1 Aug 2022)  
Mr D Sandford (Non- Executive) (appointed 9 Jan 2023)

## Company Secretary

Rebecca Hunter

## Address

National Physical Laboratory  
Hampton Road  
Teddington  
Middlesex  
TW11 0LW

## Banker

Barclays Bank plc  
1 Churchill Place  
Canary Wharf  
London  
E14 5HP

## Auditor

RSM UK Audit LLP  
Chartered Accountants  
One London Square  
Cross Lanes  
Guildford  
Surrey  
GU1 1UN

# Introduction from the Chair

What is NPL? It is the UK's National Metrology Institute, a public sector research establishment, an important scientific institution and a prominent feature in the Teddington landscape. NPL is a partner, collaborator, convener and advisor in countless relationships with businesses, public bodies and universities. We work with organisations of all sizes across the UK and around the world.

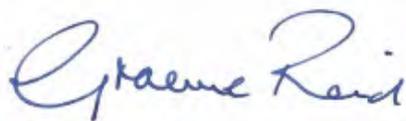
NPL has many identities. Most of all it is a diverse community of talented, enthusiastic and committed individuals, working together to deliver impact for the economy and society. Our commitment to diversity is enduring and helps us continue to attract and retain talented people. To solidify our commitment to diversity and opportunities for all, in 2022 we became a signatory of the Race at Work Charter and renewed our Institute of Physics Project Juno Practitioner accreditation, which recognises action taken to address the underrepresentation of women in physics.

The NPL community has become progressively more diverse, from our early career scientists all the way to the NPL Board. In 2022 we hosted 30 apprentices across science, engineering and business administration programmes, filling our talent pipelines for the future. We also hosted two students on the Government-led kick starter programme, offering young people claiming Universal Credit, a six-month work placement.

We welcomed new members to the NPL Board, with recently appointed Non-Executive Directors adding a wealth of experience and insight from different backgrounds, industries and regions to help lead the company forward.

NPL reaches far and wide to attract talented people. A laboratory that was once solely a Teddington operation now has activities spanning many parts of the UK and providing careers for people from across the world. Our leading role in the Advanced Manufacturing Productivity Institute in Rochdale and the new UK Telecoms Lab in Solihull marks further diversification of NPL's geographic locations.

Diversity and inclusion remain critical to our vision to deliver extraordinary impact from our excellent science and engineering. We are at not the end of our diversity journey, just the 2022 milestone.



**Professor Graeme Reid**  
Chair of the National Physical Laboratory



# Chief Executive's Summary

Every year brings with it fresh opportunities and challenges for us here at NPL, and 2022 was no different. Our focus remained on applying our science and engineering expertise to further the innovation landscape in the UK and we continued to convene thought-leaders across a wide range of industries and sectors and from across the UK and the globe.

We remained firmly committed to tackling the most pressing challenges facing our people, planet and prosperity, driving forward science, technology and innovation whilst continuing to deliver extraordinary impact as a world-leading and exemplary national laboratory. Our focus remained on supporting industry, academia and government in furthering science and innovation in areas such as AI, engineering biology, future telecommunications, semiconductors and quantum technologies.

Our planet depends on reducing the consequences of climate change and other environmental degradation. NPL's measurement expertise allows us to identify sources of pollution and use technology to reduce emissions and environmental damage. In 2022 the NPL conceived TRUTHS mission received its next round of funding, moving us one step closer to a more complete picture of the Earth's radiation imbalance providing us with more accurate climate data. We successfully demonstrated a disruptive new technique that transforms undersea power and telecom cables into environmental sensors, with the potential to revolutionise monitoring of earthquakes. We helped support systems for enhanced emissions monitoring at industrial facilities, which has the potential to reduce the CO<sub>2</sub> from many industries. Across the NPL estate, several initiatives were introduced to contribute to the mitigation of climate change, including the implementation of battery recycling points, a corporate membership to the GikiZero tool, giving staff a better understanding of how to build sustainable behaviours, and piloting local Building Management Systems to assess the potential for reducing electricity usage through more bespoke control of laboratory conditions.

In an increasingly interconnected world, it is crucial that the UK continues to develop and maintain resilient infrastructures to ensure they provide the necessary 'always on' service that we have come to expect. NPL is actively supporting industry, government and academia in providing measurement frameworks to deliver these communications, IT and timing infrastructures. In 2022 our National Timing Centre programme continued to raise awareness on the current vulnerabilities of the UK's timing infrastructure. We announced new 'node partners' at Surrey, Strathclyde and Cranfield Universities, which will provide timing signals and laboratory space for industry, supporting R&D, testing and validation of products and applications. We were appointed to lead a new state-of-the-art UK Telecoms Lab, on behalf of the Department for Digital, Culture, Media and Sport (DCMS)\*. This will provide independent test and evaluation capability and enhanced confidence in the resilience of UK telecommunication systems and will enable the supply chain diversification strategy. In addition, we became partners in the Government's new AI standards Hub, where our ongoing work will increase the UK's contribution to the development of global AI technical standards, providing a layer of confidence to those using and interacting with AI.

Our work in quantum saw 18 new projects commencing within our Measurement for Quantum (M4Q) programme, designed to help companies bridge the gap from prototype to industry-ready, innovative new quantum products or services, and delivering the confidence required for investment in this area.

The health of our nation continues to be as important and challenging as ever. As the population is growing and aging, new areas of medical need are emerging. We are enabling drug developers to pinpoint more efficient drugs, speeding up drug development when treating neurological disorders and significantly improving breast cancer outcomes with an innovative ultrasound detection technique. NPL continues to provide the measurement expertise to accelerate the technological advances that will enable the UK to diagnose, monitor, treat, cure and prevent a wide range of diseases and reduce health inequalities.

Industrial enterprises make a significant contribution to maintaining and growing national prosperity, and NPL is proud to be creating value and impact, supporting productivity and competitiveness in this arena, and ensuring the long-term economic growth of the UK. In 2022 we proudly led the way for more accurate measurement standards in the global graphene industry, reduced uncertainty in long-term temperature measurement of nuclear material storage and accelerated composite production to aid in the development of innovative materials used in the aviation sector, to name just a few. NPL plays a vital role in Innovate UK's Analysis for Innovators (A4I) programme, providing access to our cutting-edge R&D expertise and facilities to help organisations solve problems they have been unable to tackle using standard technologies and techniques. In 2022, we completed 39 projects, helping to boost productivity and competitiveness in the UK.



Our measurement expertise enables us to advise and inform UK Government in critical situations. We continued this support and, late last year, we welcomed the publication of the UK Measurement Strategy. The strategy emphasised the importance of measurement as “essential for the smooth running of our everyday lives”. As one of the laboratories that delivers the National Measurement System (NMS), NPL continues to work with our partners on the strategy and provision of the measurement infrastructure and standards that underpin UK trade and prosperity. As part of the NMS, NPL collaborates with over 500 academic institutions and 630 UK-based firms and helps 550 firms annually through our e-learning and events.

NPL is the UK's National Metrology Institute is a key contributor in the global metrology community. In 2022 we played a pivotal role, leading the latest expansion to the globally recognised SI prefix range. Spearheaded by NPL and driven by the requirements of data science and the exponential growth of the global datasphere, four new prefixes were added to the range, which was the first addition to the range in over 30 years. We also published 12 roadmaps for our highest priority research areas, with the aim of encouraging the scientific community to take a long-term view of metrology and to join us in creating innovative solutions to overcome metrology barriers.

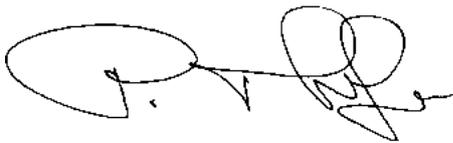
During 2022, our independent International Science Review for NPL was completed, valuing NPL as part of the national infrastructure. The varied research and international leadership identified by the review could not be completed without the brilliant people working at the laboratory. Over 1,100 scientists, engineers and skilled professionals worked together to deliver exceptional science and engineering throughout 2022. Our people are our biggest asset, and a happy, healthy and valued workforce is essential for the sustainability of the organisation. In 2022 we launched a five-year diversity and inclusion strategy, which will enable us to identify new areas and opportunities to ensure that all are supported to succeed.



We continued to upskill students and industry, and support early careers scientists, hosting 30 apprentices across science, engineering, measurement science and business administration programmes, and providing a further 47 students with work experience as part of the NPL Academy.

The NPL Board brings together a wealth of experience to lead and support the NPL Executive team. During the year we were pleased to welcome new Board members who bring with them an abundance of expertise in research, science, technology and strategy, including the appointment of Dr Carol Bell as senior independent Director, Andrew Chang as Chair of the Audit and Risk Committee, Dr Robert Sorrell as Chair of STAC and Catriona Schmolke as non-executive Director.

As a values-led national laboratory I am proud that our diverse and international workforce continues to deliver impact that is truly global in nature. I am hugely grateful to the great minds behind our world-leading work, who continue to play a pivotal role in NPL's ability to tackle the most pertinent challenges facing our country, and the world, head on.



**Dr Peter Thompson**

Chief Executive Officer  
of the National Physical Laboratory



# Directors Report

The Directors present the Annual Report and Accounts of NPL Management Limited for the year to 31 December 2022.

The company is domiciled and incorporated in the United Kingdom, the parent and ultimate controlling party of the Company is the Secretary of State for Business Energy and Industrial Strategy.

The principal activity of the Company is to provide scientific research and development, programme management and business support services, as a wholly-owned subsidiary of the Department for Business, Energy and Industrial Strategy (BEIS) from 1 January 2015. Excellent science is at the heart of NPL's activities – driving innovation, supporting industry and improving quality of life, both for the UK and internationally. We maintain a wide portfolio of internationally-visible research programmes that advance measurement science, underpin the SI system of measurement units and support cross-disciplinary technologies.

The directors are not aware, at the date of this report, of any major changes in the Company's activities in the next year.

Details of future developments, the Company's business relationships with suppliers, customers and others, financial risk management and employee involvement, can also all be found in the Strategic Report and form part of this report by cross-reference. Details of the Company's risk management approach and the principal risks faced by the Company can be found in the Governance Report and form part of this report by cross-reference.

Details of greenhouse gas emissions, energy consumption and energy efficiency requirements can be found in the Sustainability Report.

During the financial year, the directors have ensured that full and fair consideration was given to applications for employment by the company made by disabled persons, having regard to their particular aptitudes and abilities. Furthermore, the directors ensured that there was employment of, and appropriate training for, employees of the company who have become disabled persons during the period when they were employed by the company, and that there was training, career development and promotion of disabled people employed by the company.

## Dividends

No dividends have been paid or declared in the year. The directors do not recommend a final dividend (2021: £nil).

## Directors

The following directors held office during the period 1 January 2022 up to the date of the signing of the financial statements:

Prof. G Reid (Chair)

Dr P A Thompson

Mr N J Perry (Senior Independent Non-Executive) (resigned 24 May 2022)

Prof. Sir J R McDonald (Non-Executive)

Prof. G M Lu (Non-Executive)

Ms B Sutcliffe (Non-Executive) (resigned 28 September 2022)

Ms P J Holt

Dr R Hart (appointed 1 Jan 2022, resigned 14 February 2023)

Ms C Quinn (Non- Executive)

Ms H Wallace (Non- Executive) (appointed 11 Feb 2021, resigned 9 Jan 2023)

Dr R Sorrell (Non- Executive) (appointed 1 July 2022)

Dr C Bell (Senior Independent Non-Executive) (appointed 1 Aug 2022)

Mr A Chang (Non- Executive) (appointed 1 Aug 2022)

Ms C Schmolke (Non- Executive) (appointed 1 Aug 2022)

Mr D Sandford (Non- Executive) (appointed 9 Jan 2023)

## Disclosures to Auditor

Each of the persons who is a director at the date of approval of this report confirms that:

- so far as the director is aware, there is no relevant audit information of which the Company's auditor is unaware; and
- the director has taken all the steps that he/she ought to have taken as a director in order to make himself/herself aware of any relevant audit information and to establish that the company's auditor is aware of that information.

This confirmation is given and should be interpreted in accordance with the provisions of s418 of the Companies Act 2006.

Approved by the Board and signed on its behalf by:

**Prof Graeme Reid** | Chair

**Dr Peter Thompson** | CEO

Date: 7<sup>th</sup> June 2023

# Governance Statement

## The purpose of the governance statement

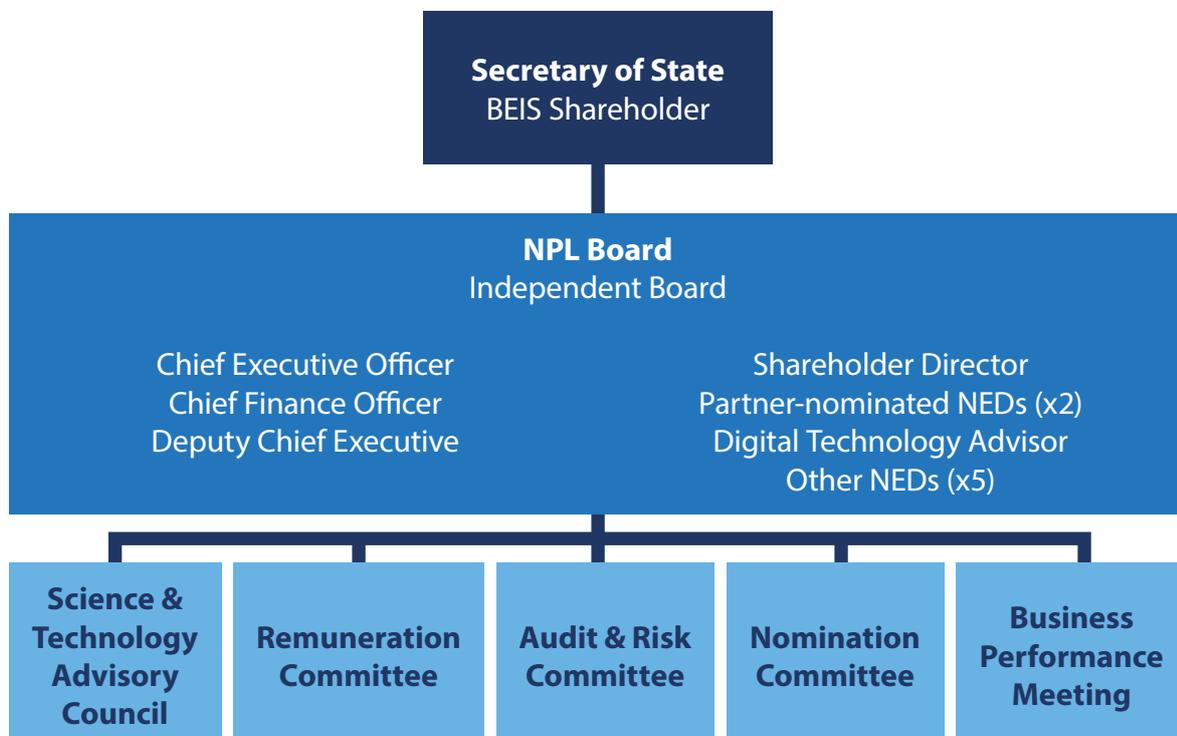
The Governance Statement gives a clear description and illustration of the composition and organisation of NPL’s governance structures, explaining its control and decision-making structure. NPL is not required to comply with the provisions of the UK Corporate Governance Code (‘The Code’) but does aim to adhere to the principles where relevant and practicable. The statement explains how NPL has complied with the principles of good governance and how the Board has acted on its responsibility for the appropriate and effective governance of NPL.

Sustainability aspects of governance are covered in the Sustainability Report which is to be found on pages 27-31.

## Statement of responsibility

As NPL’s Accountable Person, I have responsibility for the maintenance and oversight of a sound system of internal control and governance that supports the achievement of NPL policies, aims and objectives. In addition, as the NPL Accounting Officer, I am responsible to the BEIS Principal Accounting Officer for the high standards of probity in the management of public funds and departmental assets. This is in accordance with the responsibilities assigned to me in HM Treasury’s Managing Public Money. The NPL Board of Directors is responsible for the wider governance of NPL.

## The governance framework



\*The Business Performance Meeting is not a committee of the NPL Board, but reports from this meeting are circulated to the NPL Board

## The NPL Board and its Committees

Roles and high-level responsibilities within the governance framework include the following:

### BEIS Secretary of State

The Secretary of State for Business, Energy and Industrial Strategy (BEIS)<sup>2</sup> is the Minister with formal responsibility for NPL. Day-to-day ministerial oversight is undertaken by the Minister for Science, Research and Innovation. The Secretary of State and the Minister for Science, Research and Innovation are answerable to Parliament for all matters relating to NPL and hold ministerial policy responsibility for NPL\*

\*On 10 February 2023 responsibility for NPL transferred to the new Department for Science, Innovation & Technology.

### NPL Board

The Board ensures that NPL is working within a framework of effective governance arrangements. These governance arrangements enable risk to be appropriately assessed and managed. The Board provides support, independent constructive challenge and strategic leadership to the NPL Executive Team. The Board is led by an independent, non-executive Chair Professor Graeme Reid. The Senior Independent Director is Dr Carol Bell FLSW.

### The Board's composition comprises:

- an independent Chair (Professor Graeme Reid).
- a senior independent Director (Dr Carol Bell appointed 1 August 2022).
- a BEIS Shareholder Representative (Mr David Sandford appointed 9 January 2023).
- representation from each of NPL's Strategic University Partners: The University of Surrey (Prof G. Q. Max Lu) and University of Strathclyde (Sir Jim McDonald).
- other Non-Executive Directors: Andrew Chang appointed 1 August 2022 (the Chair of the Audit and Risk Committee), Ms Catherine Quinn (the Chair of the Remuneration Committee), Dr Robert Sorrell appointed 1 July 2022 (the Chair of STAC) and Catriona Schmolke appointed 1 August 2022.
- two Executive Directors: The Chief Executive Officer (CEO and also Chair of the Celsius Health Board, Dr Peter Thompson) and the Chief Finance Officer (CFO, Ms Penny Holt).
- a senior civil servant acting as NPL's digital and technology advisor who is not appointed as a Board Director, but supports the Board and attends Board meetings (Mr Dan Rodenhurst).

<sup>2</sup> On 10 February 2023 responsibility for NPL transferred from BEIS to the new Department for Science, Innovation & Technology.

**The Science and Technology Advisory Council (STAC):**

The STAC provides independent strategic advice, challenge and support to NPL, particularly on the quality, international standing and industrial relevance of NPL's science and technology. Members comprise 13 independent and distinguished members from across industry, academia and international laboratories. Biographies of all members of the STAC can be found on NPL's website at: <https://www.npl.co.uk/about-us/people/stac>. The Chair of the STAC is Dr Robert Sorrell

**The Remuneration Committee (Rem Com):**

The Rem Com approves the remuneration and incentives for employees and, in particular, for the Executive Directors in accordance with its terms of reference. During 2022 the Rem Com was chaired by Ms Catherine Quinn.

**The Audit and Risk Committee (ARC):**

The ARC oversees audit and risk management in NPL. The Committee is responsible for providing assurance to the Board on the adequacy and effectiveness of governance, internal control and risk management arrangements. During 2022 Mr Andrew Chang was appointed as Chair of the Audit & Risk Committee, succeeding <sup>3</sup>Ms Brigid Sutcliffe.

**The Nominations Committee (Nom Com):**

The Nom Com plays a key role in the appointment process for Board members and for making recommendations to the Board. The Nom Com is chaired by the NPL Board Chair.

**The Business Performance Meeting (BPM):**

The BPM membership comprises the NPL Executive and is NPL's business and operational decision-making forum, providing direction and leadership to the organisation, and meets on a monthly basis.

**The Celsius Health Board:**

The Celsius Health Board was established in February 2019 and ensures that NPL's subsidiary (Celsius Health Ltd) works within NPL's framework of governance whilst working towards spinning out as an independent company. The Celsius Health Board met six times in 2022. Celsius Health Ltd is a wholly owned subsidiary of NPL Management Ltd.

<sup>3</sup> Ms Sutcliffe resigned 28 September 2022.

## NPL Board and Board Committee attendance

2022 Board Members	Position	NPL Board	Rem Com	ARC	Nom Com	STAC*
<b>Prof. G Reid<sup>1</sup></b>	NPL Board Chair	4	3		-	1/1
<b>Dr CI Bell<sup>2</sup></b>	Non-Executive Director	2/2		0/1	-	
<b>Mr A Chang<sup>3</sup></b>	Non-Executive Director	2/2	2/2	2/2	-	
<b>Ms C Schmolke<sup>4</sup></b>	Non-Executive Director	2/2		0/1	-	
<b>Dr R Sorrell<sup>5</sup></b>	Non-Executive Director	2/2	2/2		-	1/1
<b>Ms C Quinn</b>	Non-Executive Director	4	3	4	-	
<b>Ms H Wallace</b>	Shareholder Director	4	3	4	-	
<b>Prof. G M Lu</b>	Partner-nominated Non-Executive Director	4	3		-	
<b>Prof. Sir J R McDonald<sup>6</sup></b>	Partner-nominated Non-Executive Director	4	1/1		-	
<b>Dr P Thompson</b>	Chief Executive Officer	4				
<b>Dr R Hart<sup>7</sup></b>	Deputy Chief Executive Officer	4				
<b>Ms P Holt</b>	Chief Finance Officer	4				
<b>Mr D Rodenhurst</b>	Board Advisor	4				
<b>Mr N Perry<sup>8</sup></b>	Senior Independent Director	2/2	1/1	2/2	-	
<b>Ms B Sutcliffe<sup>9</sup></b>	Non-Executive Director	3/3	1/1	3/3	-	
<b>Total Number of Meetings</b>		<b>4</b>	<b>3</b>	<b>4</b>	<b>0</b>	<b>2</b>

<sup>1</sup> Prof Reid resigned as Chair of STAC June 2022, <sup>2</sup> Dr Bell appointed to Board 1 August 2022 and joined Audit Committee 27 September 2022, <sup>3</sup> Mr Chang appointed to Board 1 August 2022 and joined Audit Committee 1 August 2022, also joined RemCom 27 September 2022, <sup>4</sup> Catriona Schmolke appointed to Board 1 August 2022 and joined Audit Committee 27 September 2022;

<sup>5</sup> Dr Sorrell appointed to Board 1 July 2022 and also appointed Chair of STAC, joined RemCom 27 September 2022; <sup>6</sup> Prof Sir McDonald resigned from RemCom 26 September 2022.

<sup>7</sup> Mr Hart resigned 14 February 2023, <sup>8</sup> Mr Perry resigned 24 May 2022;

<sup>9</sup> Ms Sutcliffe resigned 28 September 2022.

### **NPL Board business**

During the year the NPL Board met four times for full Board meetings and seven times across the months when there was no formal full Board meeting. The Board held wide ranging discussions on subjects of key importance to NPL, including:

- Consideration of the latest Health and Safety Reports
- Reports from the Board's Committees on their activities and from Celsius Health Board meetings
- Financial and business performance, including the five-year Capital Plan
- Reports on the activity of the NPL People Committee
- Updates from the BEIS Shareholder<sup>4</sup> on relevant activity in central government
- Review and scrutiny of the NPL strategic risk register, including internal and external risks and mitigations to business performance
- Authorisations of spend over £3m
- Equality, Diversity and Inclusion
- NPL's values

### **Board effectiveness**

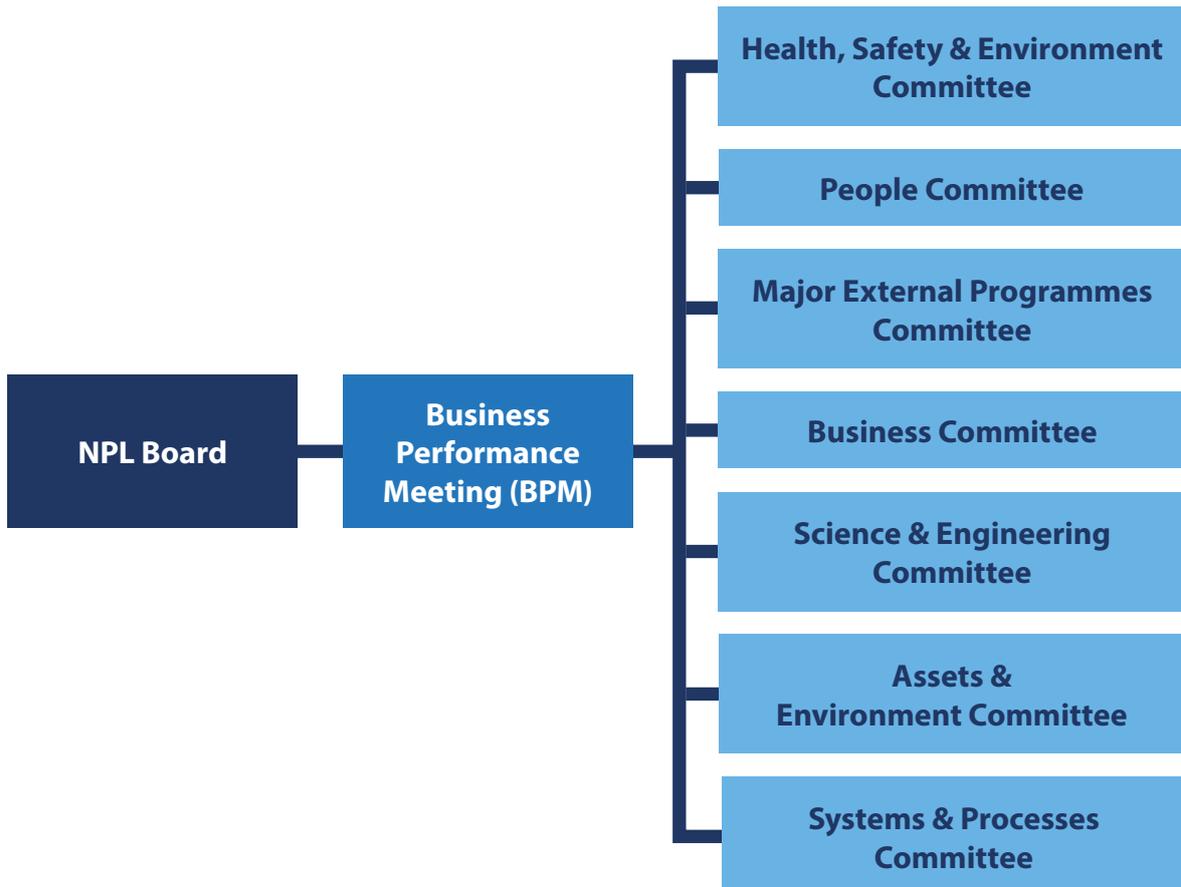
Continuing with the recommendations made from an earlier Board evaluation, and following Board agreement to undertake an external formal Board evaluation, during 2022 the Board appointed an external adviser to conduct a rigorous assessment of the Board and its Committee's effectiveness. The review, which has been led by the Senior Independent Director is still ongoing and has taken the form of one-to-one interviews with all members of the Board and Executive Team. The outcome of the review will be presented to the Board and Executive Team in Spring 2023.

<sup>4</sup> On 10 February 2023 responsibility for NPL transferred from BEIS to the new Department for Science, Innovation & Technology.

### Executive management effectiveness

I have primary responsibility for the day-to-day management of the business and discharge my responsibilities through the Executive Leadership Team. The Executive Leadership Team meets formally, on a monthly basis, at the Business Performance Meeting and also meets monthly for an Executive Strategy Day.

The Executive-level governance structure comprises the following:



Sub-committees of the BPM report into the BPM monthly through written reports and verbal updates, ensuring good information flow between the committees; the appropriate escalation of risk and opportunity; and holistic decision making with clear accountabilities.

### Register of interests

All members of the Board and the Executive Team are required to declare any conflict of interests or perceived conflict that may impact on, or be perceived to impact on, their judgement or independence regarding decision making or involvement with any future of existing transaction or arrangement. This is in compliance with Sections 175, 178 and 182 of the Companies Act 2006. Where conflicts have been declared, these have been recorded in a register and handled in accordance with best practice. In 2022 no conflict of interest was declared that required specific mitigating actions.

### **The internal control framework**

NPL continues to maintain and update the existing internal control framework which has operated successfully for many years. As part of its wider Corporate Assurance responsibilities, NPL reviews and updates its internal controls on a rolling cycle to ensure they meet the changing needs of the organisation. The Audit & Risk Committee reviews the framework annually.

### **Tax compliance (Alexander review)**

NPL is compliant with the requirements of the Alexander Review. NPL has sought and gained assurance that the appropriate tax arrangements are in place for all contractors, including IR35.

### **Quality assurance**

The MacPherson Review of Quality Assurance (QA) of Government Analytical Models is not applicable to NPL as NPL does not use such models.

### **Risk management**

The NPL Executive Team has overall responsibility for identifying major risks to NPL's business activities. All business and commercial activities contain risk and uncertainty and risk management is an integral part of business management. Some risks and uncertainties cannot be eliminated completely, so NPL's aim is to understand them and devise a control and mitigation strategy.

NPL's approach to risk aligns with the Government's Orange Book on the principles and concepts of risk management.

The NPL Executive Team maintains a strategic and operational risk register and reviews its risk landscape monthly at the Business Performance Management meeting. This approach ensures strategic risks are identified, assessed, and monitored. In addition, deep-dives of individual risks are undertaken regularly by the NPL Board and the Audit & Risk Committee.

The most significant risks in 2022 were in the areas of:

- A major Health, Safety or Environmental occurrence adversely affecting staff, neighbours, the general public or the local environment as a direct result of an unsafe act or omission by NPL.
- Talent acquisition, development and retention to support national challenges.
- Economic shock challenging financial sustainability.
- Supply chain challenges impacting capital procurement and successful customer delivery.
- The machinery of research and innovation funding being incompatible with NPLML strategy.
- A major cybersecurity incident.

### **Dr Peter Thompson**

Accountable Person

Date: 7<sup>th</sup> June 2023

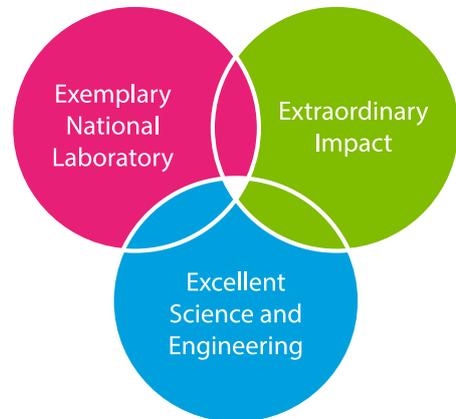
# Strategic Report

## Mission, vision and values

Throughout 2022 our high-quality science and engineering continued to deliver on our mission to provide the measurement capability that underpins the UK's prosperity and quality of life.

Our vision continues to be to deliver extraordinary impact from excellent science and engineering as a world-leading and exemplary national laboratory.

We are committed to providing a progressive and inclusive working environment that promotes wellbeing and flexible ways of working, enabling our values to flourish and our people to thrive and be their authentic selves, wherever they are working.



## Review of the year and future outlook

Throughout 2022, NPL continued to provide confidence in measurement data to enable innovation, and ensure trust in measurements and data so that trade could flourish. Through our world-leading R&D expertise and facilities, we continued to play an essential role in helping the UK to become a safer, healthier, greener and more prosperous place to live.

In December 2022 it was announced that NPL will lead the newly created UK Telecoms Lab on behalf of the Department for Digital, Culture, Media and Sport (DCMS). This world-leading national facility will boost the security, resilience and performance of the UK's telecommunication networks, by providing a test and evaluation capability at the highest point of reference.

As shown in the Company's profit and loss account on page 38, for the year ended 31 December 2022 the Company's turnover increased by 9.1 % to £129.0m (2021: increase of 13.6% to £118.2m).

The Company made a profit before tax of £1.9m (2021: profit before tax of £3.6m). The profit for the year ended 31 December 2022 was largely due to continued focus on improved efficiencies. Turnover per employee for the year ended 31 December 2022 increased by 2.7% to £116k (2021: £113k).

As shown in the Company's balance sheet on page 41, net assets decreased to £82.7m at 31 December 2022 (2021: £101.1m).

An important measure of the Company's financial health is the utilisation of our staff on revenue-generating activities. Utilisation levels improved slightly in 2022. Full year utilisation rates increased to 72.8 % of scientists' bookable time in 2022 (2021: 72.4%). The NPL Net Promoter Score (NPS) for the year of 2022 is 83. This is a slight decrease on the score of 85 for 2021.

### Section 172(1) statement

The directors of NPL – and those of all UK companies – must act in accordance with a general set of duties. These duties are detailed in the UK Companies Act and include a duty to promote the success of the company, having regard to:

- The likely consequences of any decision in the long term;
- The interests of the Company's employees;
- The need to foster business relationships with suppliers, customers and others;
- The impact of the Company's operations on the community and environment;
- The desirability of the Company maintaining a reputation for high standards of business conduct; and
- The need to act fairly as between shareholders of the Company

As part of their induction directors are briefed on their duties and are able to access advice on these from the Company Secretary.

The directors fulfil their duties partly through a governance framework that delegates day to day decision making to the Company's executive management and employees. Details of this can be found in our Governance Statement on pages 10 to 16.

The following paragraphs summarise how the directors fulfil their duties:

### Our purpose, strategy and consideration of the consequence of decisions for the long term

As the UK's National Measurement Institute, NPL develops and maintains the primary measurement standards for the nation. From enabling earlier detection of cancer and speeding up the development of new, more effective drugs to pioneering climate-friendly materials and improving the quality of data collected through Earth observation systems, these game-changing technological advances must be built on a foundation of reliable measurement to succeed. During our quarterly scheduled Board meetings in 2022 our primary considerations have been how our strategy should evolve to continue to deliver maximum impact, particularly in areas of national priority, as well as the safety, security and wellbeing of our staff.

In addition to the quarterly scheduled Board meetings, monthly Board teleconferences were held throughout 2022, focusing specifically on NPL's financial performance, health and safety and critical estates related updates and discussions around NPL's response to supporting Government priorities.

Each year the Board also undertakes an in-depth review of the Company's strategy and in July 2022 an entire Board Meeting focused on NPL's strategy refresh and our plans to support Government's national priorities in 2022 and beyond.

## Risk management

The Company operates a risk management system, which is regularly reviewed by the directors. The directors seek to ensure that financial risk is managed with the purpose of minimising any potential adverse effect on the Company's performance.

The Company's approach to risk management and a summary of the most significant strategic risks facing the Company are set out in the Governance Statement on pages 10-16. The directors review the Company's operational and strategic risk register at each scheduled quarterly board meeting.

The Company receives a significant proportion of its revenue from UK Government departments, through contracts to deliver services as well as competitively won grants, and so is not exposed to significant credit, price or currency risk. The Company transferred to BEIS<sup>5</sup> on 1 January 2015, and BEIS has assumed full ownership for the long term. An overarching contract between NPL and BEIS that sets out the terms and conditions of any transactions is in place and no material change to the terms of that arrangement are anticipated. In March 2022, BEIS confirmed the associated funding arrangements for NPL for the period through to March 2025.

## Our people

The Directors recognise that NPL's employees are fundamental to our business and delivery of our strategic ambitions. The success of our business depends on attracting, retaining and motivating our employees. From ensuring that we remain a responsible employer, from pay and benefits to our health, safety and workplace environment, the Directors factor the implications of decisions on employees and the wider workforce, wherever relevant.

Further details of how we engage with our people, our culture and working environment, approach to diversity and inclusion and the actions we are taking to encouraging women into Science, Technology, Engineering, and Mathematics (STEM) can be found on pages 25-26.

## Our business relationships

Delivering our strategy requires strong mutually beneficial relationships with Government, suppliers, customers, and partners across both industry and academia.

With this in mind, on 1 April 2015 We concluded a Partnering Agreement with BEIS, NPL, the University of Strathclyde and the University of Surrey. The partnership enables all parties to strengthen both the excellence of their science and their engagement with business and is the basis of our Postgraduate Institute, which is creating the next generation of world-class measurement scientists.

The Directors also receive information updates on a variety of topics throughout the year that indicate and inform how stakeholders have been engaged. This information is provided from each of the sub-committees outlined in the Governance Statement on pages 10-16.

<sup>5</sup> On 10 February 2023 responsibility for NPL transferred from BEIS to the new Department for Science, Innovation & Technology.

## **The community and environment**

NPL is an active participant in the community, through our extensive outreach activities, (described on pages 25-26) the matched funding we make available to employees raising sponsorship for charity and by encouraging staff to volunteer for local community projects for which special paid leave is available.

Our world-leading measurement solutions are critical to business and government, accelerating research and innovation, improving quality of life and enabling trade. We seek to ensure that our cutting-edge measurement science has a positive impact in the real world, focusing on key national challenges such as health, security & resilience, and energy & the environment. The Sustainability Report on page 27-31 discusses some of the recent work that NPL has been leading in this arena.

The Company also recognises the importance of its own environmental responsibilities, monitors its impact on the environment, and designs and implements policies to reduce any damage that might be caused by its activities. Initiatives designed to reduce the Company's impact on the environment include a comprehensive recycling programme, taking steps to reduce energy consumption and engaging staff in identifying and implementing further opportunities to enhance our approaches to sustainability.

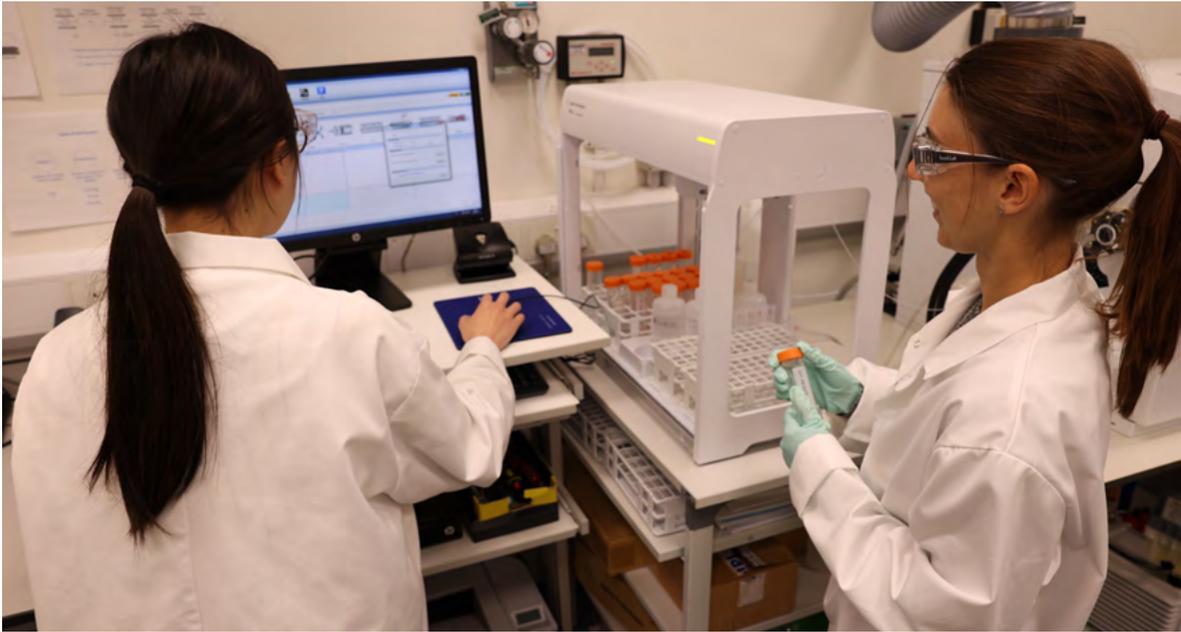
In 2021 we established a newly formed ESG directorate focused specifically on driving future environmental, societal and governance initiatives. Initial priorities have focused on developing an environmental strategy and establishing a strengthened assurance capability.

## **High standards of business conduct**

The Board periodically reviews and approves, either directly or through the relevant sub-committee, NPL's frameworks, principles and policies to ensure that high standards are maintained both within NPL and the business relationships we maintain. Our approach to this has been further developed in 2022 by examining the three lines of assurance currently in place and identifying potential gaps for further attention. For example, we have brought the Company Data Protection Officer role into the assurance function to provide independent scrutiny of our policies and processes for data protection and invested in additional training to enhance staff capability.

A further key development in 2022 was the introduction of a new learning management system, replacing four legacy systems and giving visibility of staff training records to individuals and their managers. This ensures appropriate safety, regulatory and compliance training can be assigned, delivered and recorded.

This above regular review of frameworks, policies and procedure, complemented by the ways the Board is informed and monitors compliance with relevant governance standards, help assure its decisions are taken in ways that promote high standards of business conduct.



### **Statement on bribery and anti-corruption**

The business is committed to having professional and ethical relationships with its suppliers. The company clearly articulates its stance on anti-corruption, anti-bribery, and modern slavery with all suppliers ensuring the highest standards of ethics and transparency are maintained. Suppliers are assessed before we buy from them to ensure they provide us with the quality we demand and that they have the prerequisite technical capabilities and meet our requirements around good corporate governance.

### **Our shareholder**

NPL is 100% owned by BEIS<sup>6</sup> and a BEIS shareholder representative is a member of the Board. At each Board meeting the directors receive an update from the BEIS shareholder representative on relevant activity in central government and the directors work closely with the BEIS sponsor team across a wide range of programmes and initiatives each year.

### **An engaged workforce**

We are committed to having an engaged workforce, where employees feel respected and comfortable being their authentic selves. We encourage collaboration with each other, allowing employees to add value and feel appreciated for their unique contributions.

### **Employee voice**

We continue to encourage and champion a strong employee voice to ensure feedback is central to employee engagement and wellbeing.

NPL has a dedicated employee engagement network that is used to share and discuss ideas that matter to our employees and put forward recommendations for improvements.

<sup>6</sup>On 10 February 2023 responsibility for NPL transferred from BEIS to the new Department for Science, Innovation & Technology.

Our leadership team focuses on keeping our staff informed of key NPL activity. Our quarterly all-employee communication sessions, led by the CEO and other key personnel, along with monthly team meetings led by line managers, continue. In addition, we fully brief our extended leaders on a monthly basis, providing them with relevant and up-to-date information to share with their teams for further discussion and feedback.

Our popular blogs and vlogs from the CEO and Executive team continue, working to re-enforce key messages and support employees to feel connected and valued. In 2022 we reintroduced the Exec breakfast sessions to provide the opportunity for new staff to engage with our Leaders.

Our intranet migration to SharePoint, has also allowed for greater knowledge sharing across the business by offering easy access to a wide source of information.

### **Platform for the employee voice and measurement tool**

We continue to engage with our staff through the use of ThymoMetrics (our employee engagement platform which provides a simple, always-on system for employees to have their voices heard). It remains popular, with participation rates reaching 79% in 2022.

ThymoMetrics remains available all day, every day for employees to feedback their feelings regarding the organisation and/or communicate questions, concerns or suggestions that may be on their mind. The platform also allows NPL to seek feedback on, and engage in, targeted, yet anonymous discussions with employees on topics such as the quality of leadership, and wellbeing. We continue to use the platform to highlight specific issues and look for organisational and local solutions.

During 2022, 837 comments were received through ThymoMetrics, identifying topics that are important to our staff. Key themes included pay linked to the cost-of-living crisis and a focus on leadership and organisational strategy.

Other more private mechanisms for feedback also remain active, including a direct route to the HR team and CEO.

NPL continues to celebrate the success of employees through its values award scheme. In 2022, 261 employees were rewarded for demonstrating outstanding behaviors and achievements, with a further 1,145 on-the-spot thank you recognitions presented for demonstrating Values in Action during everyday work.

### **Culture and working environment**

The NPL Values and Values in Action continue to inform employees of how we expect people to act at NPL and provide a feeling of what kind of organisation NPL is. How we do things matters and at the heart of this is an environment that is truly inclusive and always underpinned by respect.

In 2022 NPL officially formalised hybrid working, equipping leaders with resources and training to confidently implement hybrid working in their areas. Flexibility in ways of working provides employees with greater choice over where they work and better enables individuals to balance their careers with other commitments as well as creating an attractive offering for new talent.

Throughout 2022, NPL maintained a focus on connectivity and togetherness, with employee health, safety and wellbeing embedded into our culture. We focused on consolidating and showcasing a range of resources and support, laid out in the four pillars of wellbeing: physical, mental, financial and social support. We also provided wellbeing training throughout the year to give people the support needed to feel emotionally resilient.

### **Diversity and inclusion**

At NPL we believe that diversity and inclusion is critical to our vision to deliver extraordinary impact, from our excellent science and engineering as an exemplary national laboratory that employs people from around the world.

In 2022, NPL launched its new five-year strategy, which sets out our vision for the future to ensure that we are continuously improving and learning as an organisation. Our new approach will enable us to extend and embed activities across the organisation in a meaningful and impactful way and help identify new areas and opportunities to ensure that all are supported to succeed.

This year we welcomed two new staff-led special interest groups, establishing an LGBTQ+ Equality Committee to complement the work of our existing LGBTQ+ community group and a Menopause Support Forum, to provide support and raise awareness of this topic. This is in addition to our nine other special interest groups, each of which has an Executive sponsor and has met regularly throughout the year. These interest groups provide both support to and gather input from across the organisation to ensure that our work is informed by a range of perspectives.

NPL holds several accreditations, including being a Stonewall Diversity Champion and a Disability Confident Committed employer and member of the Business Disability Forum. In 2022, we became a signatory of the Race at Work Charter, an initiative designed to support businesses to collectively commit to improving opportunities for those from minority ethnic backgrounds. This year we also successfully renewed our Institute of Physics Project Juno Practitioner accreditation, which recognises action taken to address the underrepresentation of women in physics and encourage better practice for men and women. We received positive feedback on our progress since 2017, reporting on a wider range of principles. In 2023, NPL will be reviewing our progress and identifying new actions to support our aspiration to progress towards becoming a Disability Confident Employer.

Over the last year we have continued to raise awareness and discuss a wide range of diversity and inclusion topics, sharing over 40 internal news stories and blogs that have raised awareness of our in-house activities, celebrated key events such as National Inclusion Week and Race Equality week and shared staff experiences and perspectives.

We continue to invest in delivering a rolling programme of activities aligned to our strategy and ensuring that all our staff feel able to be their genuine selves at work and have access should they need it. Some of examples of activities in 2022 include:

- We ran an internal campaign on the impact of bias on women for International Women's Day, with over 300 views.
- We ran both Springboard and Navigator programmes (personal development programme for women and men, respectively) due to increased demand.
- We developed and introduced a new active bystander training course, designed to help staff identify inappropriate behaviour and equip them with the skills and techniques to address such situations with confidence, helping to foster an inclusive working environment.
- We continued to embed our understanding of accessibility into communications, processes and systems across the organisation, using our accessibility checklist to implement small but important changes in our documents and systems, such our new learning platform.
- We ran trials of our neurodiversity kit and an associated awareness session which helped individuals and line managers to better understand what neurodiversity is and some of the adjustments that can be made in the workplace.
- LGBTQ+ Mental Health, drawing on both our LGBTQ+ groups and Mental Health First Aider network.
- We have taken steps to raise awareness of non-binary gender identities, reviewing the language used in policies and training, as well as an initial phase of providing pronoun badges, which we hope to scale up in 2023.



## Encouraging Science, Technology, Engineering, and Mathematics (STEM)

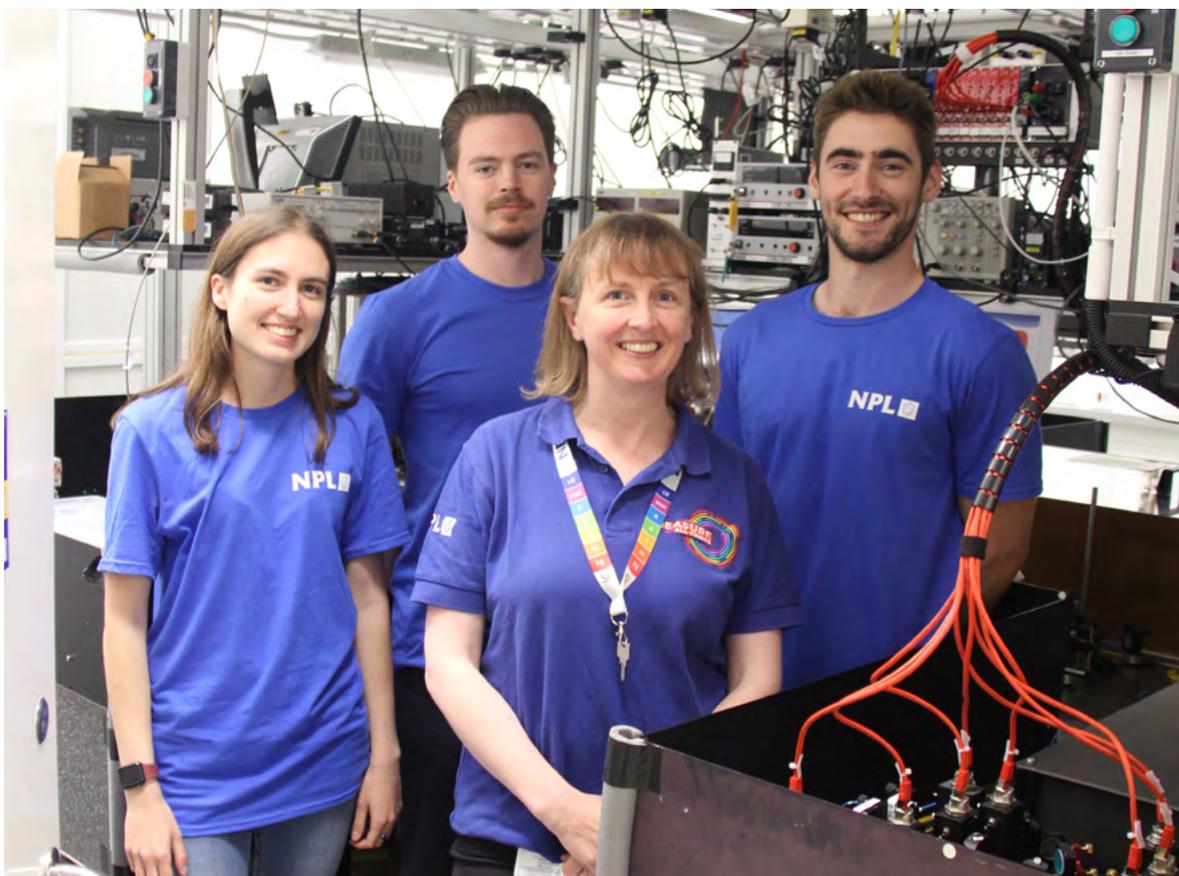
NPL's Outreach programme delivers an exciting range of activities to support the STEM agenda. As we transitioned out of the pandemic, online activities continued to reach broad audiences, but we were also able to return to face-to-face activities which enabled quality connections with schools and colleges.

656 NPL staff (41% of which were female) enabled 17 online and 109 in-person activities.

Over the course of the year, our activities reached over 33,000 people.

Outreach highlights from 2022 include:

- NPL opened its doors to the public to celebrate World Metrology Day in May 2022.
- Over 450 staff members welcomed 2,725 visitors to our Teddington site with 59 exhibits on view, from laboratories to stands on NPL's Equality, Diversity and Inclusion, ecological work, and a highly popular liquid nitrogen demo show.
- Our annual Water Rocket Challenge had the highest ever attendance with 36 school teams for the afternoon and 35 more joining the evening community event, raising money for local scouts.
- To mark the Platinum Jubilee, 4,000 students from 72 schools joined a webinar with NPL scientists describing their use of platinum in many areas of metrology.
- We supported the Institute of Physics' highly successful Quantum on the Clock Challenge which received 120 video entries from students describing aspects of quantum science.



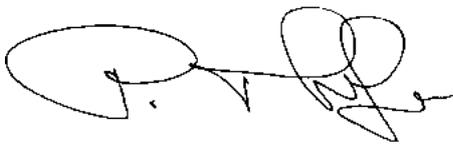
### Supporting early career scientists

Early career scientists are a key source of talent for NPL, as such we have invested in launching a Graduate Scheme in early 2023. We are recruiting our first cohort with 29 places available, across eight science and engineering departments for the new programme.

We continue to invest in apprenticeships across NPL and have recruited over 130 apprentices since restarting the programme in 2013. We currently have 30 apprentices across science, engineering, measurement science and business administration programmes, filling our talent pipelines for the future.

In 2022 we hosted two students on the Government-led kick starter programme, which offers 16-24 year olds claiming Universal Credit, a six-month work placement.

We continue to host a large group of students through the NPL Academy, our summer work experience programme, and in 2022 provided 47 students with work experience placements. Due to the online nature of the Academy, we increased our national reach, with participants taking part from as far as Manchester. Work experience was offered in eight areas of NPL's science and business, including advanced engineering materials, gas metrology and nuclear medicine imaging.



**Dr Peter Thompson**

Director

Date: 7<sup>th</sup> June 2023

# Sustainability Report

## **NPL's contribution to the UK's target to achieve net zero by 2050**

As the UK's National Metrology Institute, NPL has a vital role in ensuring the UK continues to make progress towards its net zero target. We are addressing this national challenge by developing new measurement approaches and infrastructure, providing trusted data and insights on how the climate is changing, as well as validating new technologies and innovations to support our energy transition. This includes programmes to understand greenhouse gas emissions, ongoing climate observation studies to support coordinated international actions, decarbonisation of transport through transition to alternative fuels and clean energy sources, enabling smart electricity grids and storage, and monitoring air quality.

We are leading a programme alongside our key partners the National Centre for Atmospheric Science (NCAS), the National Centre for Earth Observation (NCEO), Bristol University, the James Hutton Institute (JHI) and the Met Office to develop and improve new and existing measurement infrastructure required to underpin the future Emissions Monitoring System. It will focus on the development of ground-based instrument networks that provide essential capability for monitoring the sources and sinks of greenhouse gases in the UK.

The NPL-conceived TRUTHS (Traceable Radiometry Underpinning Terrestrial- and Helio-Studies) mission received funding at the ESA Council Meeting. The mission aims to enhance our ability to estimate the earth's radiation budget through direct measurement, establishing an SI-traceable reference data set which can be used to cross-calibrate other satellites and improve overall data quality from the Earth Observing System.

We have established earth observation applications to support monitoring of vegetation and sea surface temperatures. This includes laser scanning of forested areas to understand the contribution of tree biomass in carbon models and the use of underwater acoustics to measure ocean temperatures.

We continue to support the development of new battery technologies, including novel magnesium ion batteries as an alternative to lithium.

Our expert scientists also support the development of new policies and standards through participating in expert groups such as the BIPM-WMO Metrology for Climate Action Group, the CNES/UKSA Microcarb and Copernicus missions.



### **NPL's internal initiatives through 2022**

We are also aware of the impact of our own operations and are committed to meeting our objectives in a sustainable way. To do this we are focused on reducing our environmental impact, acting in a positive way in our dealings with our staff, customers and suppliers and maximising our contribution to society.

Across the NPL estate, a number of initiatives were introduced in 2022 to contribute positively to the mitigation of climate change. Staff have been actively involved in identifying and leading many of these initiatives:

- A new Green Council has been established, with representatives from across the organisation.
- With support from the Estates team, our Science and Engineering teams are piloting the use of local Building Management Systems, to assess the potential for reducing electricity usage through more bespoke control of laboratory conditions.
- We have implemented battery recycling points across the Teddington site.
- Following a staff-led pilot, we have taken out a corporate membership of GikiZero, giving all our staff access to a tool to understand their personal carbon footprint combined with practical steps to build sustainable behaviours. Collectively, our staff have so far committed to 13 tonnes of carbon reductions, over 1 million litres of water savings, 13,745m<sup>2</sup> less land needed, and 1,973 fewer items of single use plastic required.
- We have joined the Institute of Environmental Management and Assessment (IEMA) as a Corporate Partner, providing access to ongoing skills development for our staff and opportunities to identify practical changes through the experience of the network.
- We continued our active approach to nurturing and protecting trees and woodlands on our site alongside a wildflower meadow next to our on-site car park to support biodiversity.

### **Environmental report for the year 1 January 2022 to 31 December 2022**

Since 2021, NPL has reported against the metrics and data requirements of the central government Greening Government Commitments (GGCs), which sets out the actions UK government departments and their partner organisations will take to reduce their impacts on the environment in the period 2021 to 2025. These metrics provide additional insights alongside the guidance of the Streamlined Energy and Carbon Reporting (SECR) requirements.

An aggregate of the data, pulling together GGC reporting from relevant partner organisations, is published by BEIS in its Annual Report and Accounts.

## Change in emissions in 2022

The emission profile in 2022 has reduced again this year, by 4.7%. Individual emissions profiles have been impacted by changes in the way people work and how our buildings are used. With a return of face-to-face events post pandemic, working patterns have included the continuation of hybrid working but with more employees working onsite more frequently. It is clear from the travel emissions that organisations are returning to a more onsite collaborative norm. With increased travel to visit customers and our work supporting the Analysis for Innovators (A4I) programme with Innovate UK, more events are also being held with NPL staff contributing or visiting, including our outreach work. From an energy usage perspective, it has also been a mixed picture: energy saving measures implemented in previous years continue to deliver savings in electricity usage, but colder winter temperatures have increased gas usage.

- Scope 1 – increased by 2.1%
- Scope 2 – reduced by 10.0%
- Scope 3 – reduced by 3.7%

	2022		2021
<b>Scope 1</b>			
Gas Consumption (Gross CV)	3,866		3,767
Vehicles (owned, hired or leased)	11		29
Fugitive emissions	0.1		3
<b>Total Scope 1 (tCO<sub>2</sub>e)</b>	<b>3,877.1</b>		<b>3,799</b>
<b>Scope 2</b>			
Location based			
Electricity	4,301		4,784
<b>Total Scope 2 (tCO<sub>2</sub>e)</b>	<b>4,301</b>		<b>4,784</b>
<b>Scope 3</b>			
Business travel (rail and air)	17.5		5
Transmission and distribution losses	393		423
Water and wastewater	11		10
Waste	3		3
<b>Total Scope 3 (tCO<sub>2</sub>e)</b>	<b>424.5</b>		<b>441</b>
<b>Total emissions (tCO<sub>2</sub>e)</b>	<b>8,602.6</b>		<b>9,024</b>

**Note 1:** In accordance with GGC guidance, the scope 1 Vehicles figures reported above cover owned, hired and leased vehicles. In 2020, under SECR, we reported on own vehicles only.

**Note 2:** Market based electricity emissions were 2761 tCO<sub>2</sub>e in 2022 (2,913 tCO<sub>2</sub>e in 2021).

**Note 3:** In accordance with GGC guidance the scope 3 Business travel figures reported above cover rail and domestic air travel. In 2020, under SECR, we reported on rail travel only.

### **Intensity measurement**

We have chosen full-time equivalent staff numbers to demonstrate our intensity ratio. NPL's intensity ratio will be high in comparison with many organisations as our laboratory-based operations by their nature require space for scientific plant and machinery.

2022 Intensity ratio: 8602.5 tCO<sub>2</sub>e/1,109 FTE = 7.75 tCO<sub>2</sub>e per FTE (2021: 8.64 tCO<sub>2</sub>e per FTE).

### **Responsible procurement**

NPL aims to embed responsible procurement into all aspects of its procurement activities – incorporating sustainability, social value, responsible sourcing and supply chain transparency. The procurement team is continually improving its understanding of sustainability and social value to ensure that it reduces, where possible, any negative impacts of its procurement activities and maximises the value it can bring to the environment and society. Through its membership of the London Universities Purchasing Consortium (LUPC), NPL is an affiliated member of Electronics Watch, the independent monitoring organisation which helps public sector entities to work together to meet their responsibility to protect the labour rights and safety of workers in global electronics supply chains. This also enables us to have access to guidance, resources and contract clauses to support responsible procurement. NPL has developed a Responsible Procurement Statement which ensures procurement is conducted in a sustainable and ethically sound manner and identifies ethical issues within the supply chain including modern slavery and human trafficking. In 2022, NPL updated its supplier terms and conditions to include more robust terms regarding termination of contracts if their supplier is in breach of the Modern Slavery Act. Suppliers need to produce reports on the steps they have taken to ensure that slavery and human trafficking does not take place in any of its supply chain.

### **Reducing environmental impacts from Information Communication Technology (ICT) and digital**

NPL has followed the guidance for HMG Greening Government ICT Assessment and has made significant strides towards increasing digital ways of working and reducing the footprint of ICT infrastructure. New virtual server infrastructure has been installed and is operational across the NPL Estate; PC and network backups have been migrated to cloud services moving away from the use of tapes. In addition, the move has been made away from physical desk telephones to telephony integration into Microsoft Teams. Folder redirection from on premise hardware has also been migrated to Microsoft OneDrive in the cloud. The old hardware has been disposed of securely and in an environmentally friendly way in line with the WEEE Directive. To reduce waste and use resources more efficiently, NPL have a policy of reusing laptops inhouse. After the main user has finished with the unit it is then used in the laboratories for a further three years, doubling the lifespan.

### Quantification and reporting methodology

We calculated our emissions from electricity using both location-based and market-based approaches, and we have included our location-based emissions in our total emissions calculation. The emissions using the market-based approach are lower due to our current supplier's (EDF) fuel mix, which includes a high percentage of nuclear-generated electricity.

### Organisational boundary

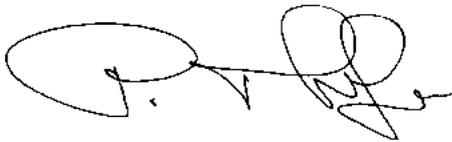
We have used the operational control approach and reported emissions from our Teddington estate only. We have allocated working areas outside our control in the Universities of Huddersfield, Strathclyde and Surrey, but their carbon impact is minimal.

### Energy usage

NPL has consumed 21,183,562 in kWh of gas and 22,235,907 kWh of electricity in 2022.

### Commitment

We are actively looking for ways to reduce our emissions in line with the targets of the Greening Government Commitments on an ongoing basis wherever reasonably possible. Over time, we expect the compound effect of these reductions to become increasingly significant.



**Dr Peter Thompson**

Director

Date: 7<sup>th</sup> June 2023



# Directors' Responsibilities Statement

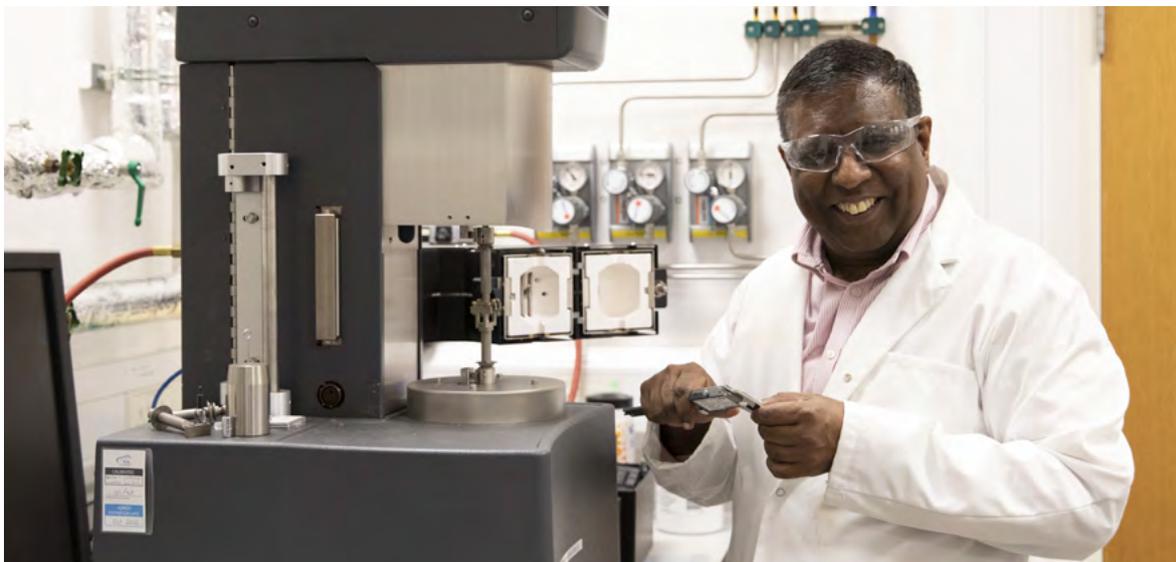
The directors are responsible for preparing the Strategic Report and the Directors' Report and the financial statements in accordance with applicable law and regulations.

Company law requires the directors to prepare financial statements for each financial year. Under that law the directors have elected to prepare the financial statements in accordance with United Kingdom Generally Accepted Accounting Practice, United Kingdom Accounting Standards and applicable law. Under company law the directors must not approve the financial statements unless they are satisfied that they give a true and fair view of the state of affairs of the company and of the profit or loss of the company for that period. In preparing these financial statements, the directors are required to:

- select suitable accounting policies and then apply them consistently;
- make judgments and accounting estimates that are reasonable and prudent;
- state whether applicable UK Accounting Standards have been followed, subject to any material departures disclosed and explained in the financial statements; and
- prepare the financial statements on the going concern basis unless it is inappropriate to presume that the company will continue in business.

The directors are responsible for keeping adequate accounting records that are sufficient to show and explain the company's transactions and disclose with reasonable accuracy at any time the financial position of the company and enable them to ensure that the financial statements comply with the Companies Act 2006. They are also responsible for safeguarding the assets of the company and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities.

The directors are responsible for the maintenance and integrity of the corporate and financial information included on the company's website. Legislation in the United Kingdom governing the preparation and dissemination of financial statements may differ from legislation in other jurisdictions.



# Independent auditor's report to the members of NPL management limited

## Opinion

We have audited the financial statements of NPL Management Limited (the 'company') for the year ended 31 December 2022 which comprise the Profit and Loss Account, Statement of Comprehensive Income, Statement of Changes in Equity, Balance Sheet and notes to the financial statements, including significant accounting policies. The financial reporting framework that has been applied in their preparation is applicable law and United Kingdom Accounting Standards, including FRS 102 "The Financial Reporting Standard applicable in the UK and Republic of Ireland" (United Kingdom Generally Accepted Accounting Practice).

In our opinion, the financial statements:

- give a true and fair view of the state of the company's affairs as at 31 December 2022 and of its loss for the year then ended;
- have been properly prepared in accordance with United Kingdom Generally Accepted Accounting Practice;
- have been prepared in accordance with the requirements of the Companies Act 2006.

## Basis for opinion

We conducted our audit in accordance with International Standards on Auditing (UK) (ISAs (UK) and applicable law. Our responsibilities under those standards are further described in the Auditor's responsibilities for the audit of the financial statements section of our report. We are independent of the company in accordance with the ethical requirements that are relevant to our audit of the financial statements in the UK, including the FRC's Ethical Standard, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

## Conclusions relating to going concern

In auditing the financial statements, we have concluded that the directors' use of the going concern basis of accounting in the preparation of the financial statements is appropriate.

Based on the work we have performed, we have not identified any material uncertainties relating to events or conditions that, individually or collectively, may cast significant doubt on the company's ability to continue as a going concern for a period of at least twelve months from when the financial statements are authorised for issue.

Our responsibilities and the responsibilities of the directors with respect to going concern are described in the relevant sections of this report.

**Other information**

The other information comprises the information included in the annual report, other than the financial statements and our auditor's report thereon. The directors are responsible for the other information contained within the annual report. Our opinion on the financial statements does not cover the other information and, except to the extent otherwise explicitly stated in our report, we do not express any form of assurance conclusion thereon.

Our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the course of the audit or otherwise appears to be materially misstated. If we identify such material inconsistencies or apparent material misstatements, we are required to determine whether this gives rise to a material misstatement in the financial statements themselves. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact.

We have nothing to report in this regard.

**Opinions on other matters prescribed by the Companies Act 2006**

In our opinion, based on the work undertaken in the course of the audit:

- the information given in the strategic report and the directors' report for the financial year for which the financial statements are prepared is consistent with the financial statements; and
- the strategic report and the directors' report have been prepared in accordance with applicable legal requirements.

**Matters on which we are required to report by exception**

In the light of the knowledge and understanding of the company and its environment obtained in the course of the audit, we have not identified material misstatements in the strategic report or the directors' report.

We have nothing to report in respect of the following matters in relation to which the Companies Act 2006 requires us to report to you if, in our opinion:

- adequate accounting records have not been kept, or returns adequate for our audit have not been received from branches not visited by us; or
- the financial statements are not in agreement with the accounting records and returns; or
- certain disclosures of directors' remuneration specified by law are not made; or
- we have not received all the information and explanations we require for our audit.

**Responsibilities of directors**

As explained more fully in the directors' responsibilities statement set out on page 30, the directors are responsible for the preparation of the financial statements and for being satisfied that they give a true and fair view, and for such internal control as the directors determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the directors are responsible for assessing the company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the directors either intend to liquidate the company or to cease operations, or have no realistic alternative but to do so.

**Auditor's responsibilities for the audit of the financial statements**

Our objectives are to obtain reasonable assurance about whether the financial statements, as a whole, are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance but is not a guarantee that an audit conducted in accordance with ISAs (UK) will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

**The extent to which the audit was considered capable of detecting irregularities, including fraud**

Irregularities are instances of non-compliance with laws and regulations. The objectives of our audit are to obtain sufficient appropriate audit evidence regarding compliance with laws and regulations that have a direct effect on the determination of material amounts and disclosures in the financial statements, to perform audit procedures to help identify instances of non-compliance with other laws and regulations that may have a material effect on the financial statements, and to respond appropriately to identified or suspected non-compliance with laws and regulations identified during the audit. In relation to fraud, the objectives of our audit are to identify and assess the risk of material misstatement of the financial statements due to fraud, to obtain sufficient appropriate audit evidence regarding the assessed risks of material misstatement due to fraud through designing and implementing appropriate responses and to respond appropriately to fraud or suspected fraud identified during the audit.

However, it is the primary responsibility of management, with the oversight of those charged with governance, to ensure that the entity's operations are conducted in accordance with the provisions of laws and regulations and for the prevention and detection of fraud.

In identifying and assessing risks of material misstatement in respect of irregularities, including fraud, the audit engagement team:

- obtained an understanding of the nature of the industry and sector, including the legal and regulatory framework that the company operates in and how the company is complying with the legal and regulatory framework;
- inquired of management, and those charged with governance, about their own identification and assessment of the risks of irregularities, including any known actual, suspected or alleged instances of fraud;
- discussed matters about non-compliance with laws and regulations and how fraud might occur including assessment of how and where the financial statements may be susceptible to fraud.

As a result of these procedures, we consider the most significant laws and regulations that have a direct impact on the financial statements are FRS 102, the Companies Act 2006, tax compliance regulations and pension law. We have performed audit procedures to detect non-compliances which may have a material impact on the financial statements which included reviewing financial statement disclosures, evaluating advice received from external tax advisors and confirmed that the company continues to make pension contributions in line with the agreed contribution schedule.

The audit engagement team identified the risk of management override of controls and revenue cut-off as the areas where the financial statements were most susceptible to material misstatement due to fraud. Audit procedures performed included, but were not limited to, testing manual journal entries and other adjustments and evaluating the business rationale in relation to significant, unusual transactions and transactions entered into outside the normal course of business and reviewing managements stage of completion calculations on a sample of contracts at the balance sheet date.

A further description of our responsibilities for the audit of the financial statements is located on the Financial Reporting Council's website at: <http://www.frc.org.uk/auditorsresponsibilities>. This description forms part of our auditor's report.

**Use of our report**

This report is made solely to the company's members, as a body, in accordance with Chapter 3 of Part 16 of the Companies Act 2006. Our audit work has been undertaken so that we might state to the company's members those matters we are required to state to them in an auditor's report and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the company and the company's members as a body, for our audit work, for this report, or for the opinions we have formed.



**Christopher Hurren**

BA FCA (Senior Statutory Auditor)

For and on behalf of RSM UK Audit LLP, Statutory Auditor

Chartered Accountants  
Third Floor  
One London Square  
Cross Lanes  
Guildford GU1 1UN

Date: 18 JULY 2023

# Profit and Loss Account

For the year ended 31 December 2022

	Notes	2022 £000s	2021 £000s
Turnover	3	128,993	118,192
Cost of sales		(86,032)	(76,072)
<b>Gross profit</b>		<b>42,961</b>	<b>42,120</b>
Administrative expenses		(40,811)	(37,975)
<b>Operating profit</b>		<b>2,150</b>	<b>4,145</b>
Interest receivable and similar income	5	954	545
Interest payable and similar charges	6	(1,209)	(1,111)
<b>Profit before taxation</b>	7	<b>1,895</b>	<b>3,579</b>
Tax on loss	8	(8,729)	2,339
<b>(Loss)/Profit for the year</b>		<b>(6,834)</b>	<b>5,918</b>

# Statement of Comprehensive Income

For the year ended 31 December 2022

	Notes	2022 £000s	2021 £000s
<b>(Loss)/Profit for the financial year</b>		(6,834)	5,918
<b>Other comprehensive income:</b>			
Pension scheme actuarial (loss)/gain	18	(15,425)	13,636
Tax on other comprehensive income – deferred tax	8	3,856	(3,409)
<b>Other comprehensive (loss)/income net of taxation</b>		(11,569)	10,227
<b>Total comprehensive (loss)/income for the year</b>		<b>(18,403)</b>	<b>16,145</b>

# Statement of changes in Equity

For the year ended 31 December 2022

	Share premium reserve £000	Retired benefit obligation reserve £000s	Profit and loss account £000s	Total £000s
<b>Balance at 1 January 2021</b>	<b>115,400</b>	<b>(10,912)</b>	<b>(19,494)</b>	<b>84,994</b>
<b>Profit for the year</b>	-	-	5,918	5,918
Actuarial gain on pension employment scheme (Note 18)	-	13,636	-	13,636
Tax charge on net actuarial gains (Note 8)	-	(3,409)	-	(3,409)
<b>Balance at 31 December 2021</b>	<b>115,400</b>	<b>(685)</b>	<b>(13,576)</b>	<b>101,139</b>
<b>Loss for the year</b>	-	-	(6,834)	(6,834)
Actuarial gain on pension employment scheme (Note 18)	-	(15,425)	-	(15,425)
Tax charge on net actuarial gains (Note 8)	-	3,856	-	3,856
<b>Balance as at 31 December 2022</b>	<b>115,400</b>	<b>(12,254)</b>	<b>(20,410)</b>	<b>82,736</b>

The profit and loss reserve represents cumulative profits or losses, net of dividends paid.

The retired benefit obligation reserve represents cumulative actuarial gains and losses and cumulative credits or charges derived by deferred tax movement in relation to the pension scheme.

The share premium reserve represents the premium to their nominal value arising on the issue of equity shares, net of issue expenses.

# Balance Sheet

As at 31 December 2022

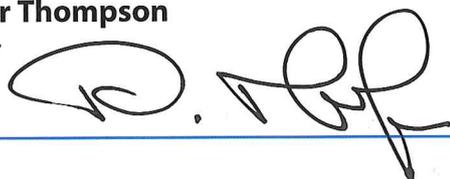
	Notes	2022 £000s	2021 £000s
<b>Fixed Assets</b>			
Intangible assets	9	2,250	2,250
Tangible assets	10	58,106	54,644
		60,356	56,894
<b>Current Assets</b>			
Stock		164	20
Debtors:			
- amounts falling due within one year	12	36,079	31,706
- amounts due after more than one year	13	8,276	11,830
Cash at bank and in hand		33,495	26,802
		78,014	70,358
<b>Creditors: amounts falling due within one year</b>	14	(57,802)	(46,412)
<b>Net Current Assets</b>		20,212	23,946
<b>Total Assets less current liabilities</b>		80,568	80,840
<b>Creditors: amounts falling due after one year</b>	20	(32,616)	(29,926)
<b>Provision for liabilities and charges</b>	15	(1,564)	(1,156)
<b>Net assets excluding retirement benefit asset</b>		<b>46,388</b>	<b>49,758</b>
Retirement benefit assets	18	36,348	51,381
<b>Net Assets including retirement benefit asset</b>		<b>82,736</b>	<b>101,139</b>

<b>Capital and reserves</b>			
Share capital	16	-	-
Share Premium reserve	17	115,400	115,400
Retirement benefit obligation reserve		(12,254)	(685)
Profit and loss account		(20,410)	(13,576)
<b>Shareholders' funds</b>		<b>82,736</b>	<b>101,139</b>

The financial statements of NPL Management Limited (company number 02937881) were approved by the Board of Directors and authorised for issue on 7<sup>th</sup> June 2023.

These were signed on its behalf by:

**Dr Peter Thompson**  
Director



# Notes to the Financial Statements

## for the year ended 31 December 2022

### 1. Accounting policies

The principal accounting policies have been described below. They have been applied consistently throughout the year and the preceding year.

#### a) General information and basis of accounting

NPL Management Limited is a company incorporated in the United Kingdom under the Companies Act. The Company is a private company limited by shares and is registered in England and Wales. The registered office is given in note 21. The nature of the company's operations and its principal activities are set out in the Strategic Report. The financial statements have been prepared under the historical cost convention and in accordance with Financial Reporting Standard 102 (FRS 102) issued by the Financial Reporting Council.

The Company is consolidated within the Whole Government Accounts and is considered to be a qualifying entity (for the purposes of this FRS) and has applied the exemptions available under FRS 102 in respect of the Cash Flow Statement and related notes, and Section 33 'Related Party Disclosures'- Compensation for key management personnel.

The Company is also a qualifying entity for the disclosure exemptions relating to the requirements of Section 11 Paragraphs 11.39 to 11.48A as the equivalent disclosures required by the FRS are included in the consolidated financial statements of the Group in which the Company is consolidated.

The functional currency of NPL Management Limited is considered to be pounds sterling because that is the currency of the primary economic environment in which the Company operates.

The Company has taken advantage of the exemption in section 400/401 of the Companies Act 2006 from the requirement to prepare consolidated financial statements. Consequently, these financial statements present the financial position and financial performance of the Company as a single entity.

#### b) Going concern

The directors have acknowledged the guidance on going concern and financial reporting published by the Financial Reporting Council in April 2016.

As the UK's national measurement institute, the company remains at the heart of the UK Measurement Strategy and, since January 2015, the company has been wholly owned by BEIS<sup>7</sup>.

<sup>7</sup> On 10 February 2023 responsibility for NPL transferred from BEIS to the new Department for Science, Innovation & Technology.

The Company's revenues are principally derived from long-term contracts with the UK government and competitively won grants which, historically, have been largely unaffected by changes in the general economy. Consequently, the directors have a good level of visibility of contracted levels of revenue.

Since returning to government ownership in 2015, BEIS has made investments in NPL of £59m in March 2016 and £37m in March 2017 in order to eliminate the Company's defined benefit pension deficit. Consequently, at 31 December 2022 the defined pension scheme was an asset of £36.3m (2021: £51.4m).

In March 2020 BEIS made two further equity investments in the Company, an investment of £9.55m to provide the Company with the sufficient cash reserves to operate effectively during and beyond the COVID 19 crisis and, separately, following an extensive review of NPL's IT requirements during 2019, an investment of £9.85m to fund the investments required to progress NPL's planned digital modernisation programme.

Consequently, the directors have a reasonable expectation that the Company has adequate resources to continue in operational existence for the foreseeable future. Accordingly they continue to adopt the going concern basis in preparing the financial statements.

### **c) Turnover**

#### **Turnover from contracts**

Turnover from contracts represents the value of services provided under contracts to the extent that there is a right to consideration and is recorded at the fair value of the consideration received or receivable. Where a contract has only been partially completed at the balance sheet date, turnover represents the fair value of the service provided to date based on the stage of completion of the contract activity at the balance sheet date. This is normally measured by the proportion that contract costs incurred for work performed to date bear to the estimated total contract costs, except where this would not be representative of the stage of completion. Variations in contract work, claims and incentive payments are included to the extent that the amount can be measured reliably and its receipt is considered probable.

Where payments are received from customers in advance of services provided, the amounts are recorded as deferred income and included as part of creditors due within one year. Any turnover recognised in excess of amounts invoiced is recorded as 'amounts recoverable on contracts' with debtors. When it is probable that total contract costs will exceed total contract revenue, the expected loss is recognised as an expense immediately.

#### **Grant income**

The Company accounts for capital grant income as deferred income and recognises the revenue as it utilises the assets for which the grant income was received. For revenue, grants are accounted for under the accruals method. Grants relating to revenue are recognised in income over the period in which the related costs are recognised. Grants relating to assets are recognised over the expected useful life of the asset. Where part of a grant relating to capital is deferred, it is recognised as deferred income.

**d) Research and development**

Research expenditure and development expenditure are expensed as incurred and included in cost of sales.

**e) Intangible assets**

Intangible assets relate to software development costs that have future economic benefit to NPL. Intangibles will not be amortised until ready for use and will be based on useful life thereafter.

**f) Tangible assets and depreciation**

Tangible assets are stated at cost, net of depreciation and any provision for impairment. Depreciation is provided on all tangible assets on cost over the estimated useful lives of the assets. The rates of depreciation are as follows:

- Technical equipment 10-33%
- Office equipment 20-33%
- Furniture and fittings 10-20%
- Assets in course of construction (not depreciated until ready for use).

**g) Taxation**

Current tax, including UK corporation tax and foreign tax, is provided at amounts expected to be paid (or recovered) using the tax rates and laws that have been enacted or substantively enacted by the balance sheet date.

Deferred tax is recognised in respect of all timing differences that have originated but not reversed at the balance sheet date where transactions or events that result in an obligation to pay more tax in the future or a right to pay less tax in the future have occurred at the balance sheet date, at rates expected to apply to the reversal of the timing difference. Timing differences are differences between the Company's taxable profits and its results as stated in the financial statements that arise from the inclusion of gains and losses in tax assessments in periods different from those in which they are recognised in the financial statements. Unrelieved tax losses and other deferred tax assets are recognised only to the extent that, on the basis of all available evidence, it can be regarded as more likely than not that there will be suitable taxable profits from which the future reversal of the underlying timing differences can be deducted. Deferred tax is measured using the tax rates and laws that have been enacted or substantively enacted by the balance sheet date that are expected to apply to the reversal of the timing difference. Where items recognised in other comprehensive income or equity are chargeable to or deductible for tax purposes, the resulting current or deferred tax expense or income is presented in the same component of comprehensive income or equity as the transaction or other event that resulted in the tax expense or income. Current tax assets and liabilities are offset only when there is a legally enforceable right to set off the amounts and the company intends either to settle on a net basis or to realise the asset and settle the liability simultaneously.

**h) Leasing**

Operating lease rentals are charged to the profit and loss account in equal annual amounts over the lease term, even if payments are not made on such a basis.

**i) Financial assets**

The Company has elected to apply the provisions of Section 11 'Basic Financial Instruments' and Section 12 'Other Financial Instruments Issues' of FRS 102 to all of its financial instruments. Financial assets are recognised in the Company's balance sheet when the Company becomes party to the contractual provisions of the instrument. Financial assets are classified into specified categories. The classification depends on the nature and purpose of the financial assets and is determined at the time of recognition. Basic financial assets, which include trade and other debtors and cash and bank balances, are initially measured at transaction price including transaction costs.

**Loans and receivables**

Trade debtors, loans, other debtors and prepayments that have fixed or determinable payments that are not quoted in an active market are classified as 'loans and receivables'. Loans and receivables are measured at amortised cost using the effective interest rate method, less any impairment. They are included in current assets, except where maturities are in greater than 12 months after the Balance Sheet date which are classified as non-current assets. The Company's loans and receivables comprise 'trade and other debtors' and 'cash and cash equivalents' in the Balance Sheet.

**De-recognition of financial assets**

Financial assets are derecognised only when the contractual rights to the cash flows from the asset expire, or when it transfers the financial asset and substantially all the risks and rewards of ownership to another entity.

**j) Financial liabilities**

Basic financial liabilities are initially measured at transaction price, unless the arrangement constitutes a financing transaction, where the debt instrument is measured at the present value of the future receipts discounted at a market rate of interest.

**Other financial liabilities**

Loans and borrowings are recognised initially at fair value of the consideration received, less transaction costs. Subsequent to initial recognition, loans and borrowings are stated at amortised cost with any difference between cost and redemption value being recognised in the profit and loss account over the period of the borrowings on an effective interest basis.

**De-recognition of financial liabilities**

Financial liabilities are de-recognised when, and only when, the Company's obligations are discharged, cancelled, or they expire.

**Equity instruments**

Ordinary shares are classified as equity. Equity instruments issued by the company are recognised at the proceeds received, net of direct issue costs. Dividends payable on equity instruments are recognised as liabilities once they are no longer at the discretion of the Company.

**k) Employee benefit****Defined benefit scheme**

For defined benefit schemes the amounts charged to operating profit are the costs arising from employee services rendered during the period and the cost of plan introductions, benefit changes, settlements and curtailments. They are included as part of staff costs.

The net interest received on the net defined benefit asset is credited to profit or loss and included within interest receivable.

Remeasurement amounts, comprising actuarial gains and losses and the return on scheme assets (excluding amounts included in net interest on the net defined benefit asset), are recognised immediately in other comprehensive income.

Defined benefit schemes are funded, with the assets of the scheme held separately from those of the Company, in separate trustee administered funds.

The net defined benefit asset represents the fair value of the pension scheme assets less the present value of the scheme liabilities (measured on an actuarial basis using the projected unit credit method). The asset recognised is limited to the present value of refunds available or reduction in future contributions to the plan. Deferred tax is measured at 25% of the pension scheme asset.

**Defined contribution scheme**

For defined contribution schemes the amount charged to the profit and loss account in respect of pension costs and other retirement benefits is the contributions payable in the year. Differences between contributions payable in the year and contributions actually paid are shown as either accruals or prepayments in the balance sheet. Other long-term employee benefits are measured at the present value of the benefit obligation at the reporting date.

**l) Foreign currency**

Transactions in foreign currencies are recorded at the rate of exchange at the date of the transaction. Monetary assets and liabilities denominated in foreign currencies at the balance sheet date are reported at the rates of exchange prevailing at that date. Gains and losses on translation are included in the profit and loss account as they arise.

**2. Critical accounting judgements and sources of estimation uncertainty**

In the application of the Company's accounting policies, which are described in note 1, the directors are required to make judgements, estimates and assumptions about the carrying amounts of assets and liabilities that are not readily apparent from other sources. The estimates and associated assumptions are based on historical experience and other factors that are considered to be relevant. Actual results may differ from these estimates.

The estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognised in the period in which the estimate is revised if the revision affects only that period, or in the period of the revision and future periods if the revision affects both current and future periods.

### **Critical judgements in applying the Company's accounting policies**

The following are the critical judgements that the directors have made in the process of applying the Company's accounting policies and that have the most significant effect on the amounts recognised in the financial statements. There are no critical judgements other than those which involve estimations. These are as follows:

#### **Recoverability of deferred tax assets (note 13)**

NPL has recognised a deferred tax asset as a result of losses in the business from the recognition of the pension liability. NPL is required to make a judgement concerning the timing and likely extent of use of those tax losses against the future profitability of the business. Future profitability is assessed through the Company's annually updated five-year plan. The underlying financial performance of the Company remains strong, as evidenced by the increase in revenues in 2022, and the growth in its orderbook and sales funnel.

Following the changes to capital allowances, announced in the 2023 Spring Budget, the Company has taken the decision to derecognise £7.2M of the previously recognised deferred tax assets in respect of tax losses and RDEC tax assets due to the uncertainty of these assets being recoverable in the foreseeable future. The company has unrecognised deferred tax assets of £10.6M as at 31 December 2022.

#### **Timing of revenue recognition (note 3)**

NPL is required to make an assessment about the timing and quantum of revenue recognised. NPL's revenue recognition policy requires forecasts to be made about the outcomes of its long-term contracts, including requiring judgements to be made on the cost forecasts of delivering those contracts. Further, for contracts which span the balance sheet date, consideration is required concerning the stage of completion of that contract.

#### **Recognition of pension scheme asset (note 18)**

The pension scheme assets are measured at fair value and liabilities are measured on an actuarial basis using the projected unit credit method. Actuarial valuations are obtained at least triennially and are updated at each balance sheet date. There is significant estimation in the assumptions used to derive the value of the pension scheme liabilities and each assumption is subject to NPL's judgement. NPL has recognised a pension asset as a result of a net surplus for the defined benefit pension scheme. In accordance with paragraph 28.22 of FRS102, NPL is of the view that it is allowed to recognise an asset as it would be able to recover the surplus on the death of the last member.

The valuation of the amounts recognised in the Balance Sheet has been assessed through the following sensitivity analysis. The effect of marginal changes on discount rate, inflation rate, and mortality have the following impact on the net defined benefit asset:

	2022	Minus 0.25% Discount rate	Plus 0.25% Discount rate	Minus 0.25% Inflation rate	Plus 0.25% Inflation rate	Mortality- 1-year age rating
<b>Fair value of plan assets</b>	166,112	166,112	166,112	166,112	166,112	166,112
<b>Defined benefit obligation</b>	(129,764)	(134,500)	(125,284)	(126,290)	(132,618)	(133,044)
<b>Net defined benefit asset</b>	36,348	31,612	40,828	39,822	33,494	33,068

### 3. Turnover

An analysis of the Company's turnover by class of business is set out below:

	2022 £000s	2021 £000s
National Measurement System	75,133	62,240
Non-National Measurement System	53,860	55,952
<b>Total</b>	<b>128,993</b>	<b>118,192</b>

All turnover arose from the provision of services in the United Kingdom. (2021: all turnover arose in the UK). Turnover includes Grant income of £32,720k (2021: £26,311k).

### 4. Information regarding directors and employees

The average monthly number of employees (including executive directors) was:

	2022 No.	2021 No.
<b>Average number of full-time equivalent employees during the year</b>		
Technical Staff	815	775
Administration	294	269
<b>Total</b>	<b>1,109</b>	<b>1,044</b>

Their aggregate remuneration comprised:

	2022 No.	2021 No.
Wages and salaries	51,069	44,548
Social Security costs	5,917	4,897
Other pension costs	9,382	8,791
	<b>66,368</b>	<b>58,236</b>

**Directors' remuneration**

	2022 £000s	2021 £000s
<b>Directors' emoluments</b>		
Emoluments (excluding pension contribution)	615	542
Pension contributions	42	63
<b>Total</b>	<b>657</b>	<b>605</b>

**Highest paid Directors' remuneration**

	2022 £000s	2021 £000s
Aggregate of emoluments	216	210
Pension contributions	16	16
<b>Total</b>	<b>232</b>	<b>226</b>

**Number of directors who:**

	2022 No.	2021 No.
Are members of a defined benefit pension scheme	-	-
Are members of a money purchase scheme	3	4
<b>Total</b>	<b>3</b>	<b>4</b>

**5. Interest receivable and similar income**

	<b>2022</b> <b>£000s</b>	<b>2021</b> <b>£000s</b>
Bank interest receivable	11	-
Net interest on defined benefit pension scheme	943	545
<b>Total</b>	<b>954</b>	<b>545</b>

**6. Interest payable and similar charges**

	<b>2022</b> <b>£000s</b>	<b>2021</b> <b>£000s</b>
Other loans	1,209	1,111
<b>Total</b>	<b>1,209</b>	<b>1,111</b>

**7. Profit before taxation**

Profit before taxation is stated after charging:

	<b>2022</b> <b>£000s</b>	<b>2021</b> <b>£000s</b>
Depreciation of tangible assets	7,642	7,671
Operating lease rentals		
- Plant and machinery	362	483
Rental costs	15,792	15,500
Loss on disposal of property, plant and equipment	43	14
Research and development expense	49,027	41,030
Exchange losses/(gains)	(222)	228

The analysis of auditor's remuneration is as follows:

	<b>2022</b> <b>£000s</b>	<b>2021</b> <b>£000s</b>
Fees payable to the Company's auditor for the audit of the Company's annual financial statements	64	54
Fees payable for grant auditing services	151	197
<b>Total fees</b>	<b>215</b>	<b>251</b>

## 8. Taxation

The tax charge/(credit) comprises:

	2022 £000s	2021 £000s
<b>Analysis of tax charge for the period</b>		
<b>Current tax</b>		
UK corporation tax at 19% (2021: 19%)	-	-
<b>Total current tax charge</b>	-	-
<b>Deferred tax</b>		
Origination and reversal of timing differences	7,893	(267)
Adjustment in respect of prior periods	(161)	75
Effect of tax rate change on opening balance	997	(2,147)
<b>Total deferred tax charge / (credit)</b>	<b>8,729</b>	<b>(2,339)</b>
<b>Tax on profit on ordinary activities</b>	<b>8,729</b>	<b>(2,339)</b>
<b>Tax relating to other comprehensive income</b>	<b>(3,856)</b>	<b>3,409</b>

Under Finance Act 2021, which was substantively enacted on 24 May 2021, it was announced that the main rate of corporation tax would increase to 25% from 1 April 2023. Therefore, the deferred tax balances at 31 December 2022 have been calculated accordingly at 25% except where the timing differences are expected to unwind before 31 March 2023.

The tax charge recognised for the year ended 31 December 2022 is higher than the United Kingdom corporation tax rate of 19% (2021: 19%). The reasons for this are set out below.

	2022 £000s	2021 £000s
<b>Reconciliation of tax charge/(credit)</b>		
Profit before tax	1,895	3,579
Tax on profit at standard corporation tax rate of 19% (2021: 19%)	360	680
<b>Effects of:</b>		
Expenses not deductible for tax purposes	9	5
Income not taxable for tax purposes	-	(134)
Fixed asset differences	(276)	
Amounts relating to other comprehensive income	-	2,591
Deferred tax posted directly	-	(3,409)
Deferred tax not recognised	8,628	(542)
Adjustments to tax charge in respect of previous periods – deferred tax	(161)	75
Timing differences not recognised in the computation	277	296
Adjust opening and closing tax rates	-	(1,901)
R&D expenditure credits	(108)	-
<b>Tax charge/(credit) for the year</b>	<b>8,729</b>	<b>(2,339)</b>

**9. Intangible assets**

<b>Cost</b>	<b>Computer Software £000s</b>
At 1 January 2022 and 31 December 2022	<b>2,250</b>

Intangible assets relate to the costs involved in developing a new Finance and ERP software system. The project was put on hold during 2022 and is restarting in 2023. No impairment of the cost is currently deemed necessary, and this will be reviewed when work restarts.

**10. Tangible assets**

	<b>Assets in the course of construction £000s</b>	<b>Technical equipment £000s</b>	<b>Office equipment £000s</b>	<b>Total £000s</b>
<b>Cost</b>				
<b>At 1 January 2022</b>	<b>11,884</b>	<b>89,479</b>	<b>6,276</b>	<b>107,639</b>
Additions	2,748	8,126	273	11,147
Transfers	(7,692)	7,692	-	-
Disposals	-	(243)	(487)	(730)
<b>At 31 December 2022</b>	<b>6,940</b>	<b>105,054</b>	<b>6,062</b>	<b>118,056</b>
<b>Depreciation</b>				
<b>At 1 January 2022</b>	-	<b>47,335</b>	<b>5,660</b>	<b>52,995</b>
Charge for the year	-	7,373	269	7,642
Disposals	-	(201)	(486)	(687)
<b>At 31 December 2022</b>	-	<b>54,507</b>	<b>5,443</b>	<b>59,950</b>
<b>Net book value</b>				
<b>At 31 December 2022</b>	<b>6,940</b>	<b>50,547</b>	<b>619</b>	<b>58,106</b>
<b>At 31 December 2021</b>	<b>11,884</b>	<b>42,144</b>	<b>616</b>	<b>54,644</b>

**11. Investments in subsidiaries, joint ventures and associates**

Details of the investments in which the company holds 20% or more of the nominal value of any class of share capital are as follows:

Undertaking	Registered Office	Holding	Proportion of voting rights and shares held	
			2022	2021
<b>Celsius Health Limited</b>	NPL Hampton Road Teddington TW11 0LW	Ordinary	100%	100%

The investment in Celsius Health Limited is held at £ 1 (2021: £1).

Celsius Health Limited was incorporated on 21 December 2018 and is not currently trading.

The company has taken advantage of the exemption in section 400/401 of the companies Act 2006 from the requirement to prepare consolidated financial statements. Consequently, these financial statements present the financial position and financial performance of the company as a single entity.

**12. Debtors**

	2022 £000s	2021 £000s
<b>Amounts falling due within one year</b>		
Trade debtors	13,516	10,686
Amounts owed by group undertaking	1	1
Amounts recoverable on contracts	8,868	9,095
Other debtors	119	96
Prepayments	3,185	2,752
RDEC tax asset	10,390	9,076
<b>Total</b>	<b>36,079</b>	<b>31,706</b>

The amounts owed by group undertaking relates to inter-co receivable balances with Celsius Health Limited. Celsius Health Limited was incorporated on 21 December 2018 and is not currently actively trading.

### 13. Deferred tax asset

The deferred tax asset has moved in the year as follows:

	2022 £000s	2021 £000s
<b>Recognition of deferred tax</b>		
Accelerated capital allowances	6,980	6,550
Short term timing differences	(8,654)	(12,010)
Tax losses carried forward and other deductions	7,341	11,264
Other	2,609	6,026
<b>Total deferred tax asset</b>	<b>8,276</b>	<b>11,830</b>
Movement in deferred tax asset:		
Asset at 1 January	11,830	11,648
Deferred tax charge/(credit) in the Profit and Loss Account for the year	(8,729)	2,339
Statement of Comprehensive Income	3,856	(3,409)
Deferred tax on RDEC tax asset	1,319	1,252
<b>Deferred tax asset at 31 December</b>	<b>8,276</b>	<b>11,830</b>

The deferred tax asset has moved in the year as follows:

	2022 £000s	2021 £000s
Within one year	-	-
More than one year	8,276	11,830
<b>Total</b>	<b>8,276</b>	<b>11,830</b>

Deferred tax assets and liabilities are offset only where the Company has a legally enforceable right to do so and where the assets and liabilities relate to income taxes levied by the same taxation authority on the same taxable entity.

Following the changes to capital allowances, announced in the 2023 Spring Budget, the Company has taken the decision to de-recognise £7.2M of the previously recognised deferred tax assets in respect of tax losses and RDEC tax assets due to the uncertainty of these assets being recoverable in the foreseeable future. The company has unrecognised deferred tax assets of £10.6M as at 31 December 2022 (2021 : £2.1M).

**14. Creditors: amounts falling due within one year**

	<b>2022</b> <b>£000s</b>	<b>2021</b> <b>£000s</b>
Other loans (see note 20)	3,031	2,781
Trade creditors	7,240	7,528
Other taxes and social security	4,764	3,433
Other creditors	21,661	16,447
Accruals	7,282	6,832
Contract deferred income	13,824	9,391
<b>Total</b>	<b>57,802</b>	<b>46,412</b>

Within other creditors is £20,505k (2021: £15,661k) of grant income from BEIS<sup>8</sup> to fund the purchase of some capital equipment.

**15. Provisions for liabilities**

The other provisions balance is made up as follows:

	<b>2022</b> <b>£000s</b>	<b>2021</b> <b>£000s</b>
Opening balance	1,156	1,010
Increase in provisions	602	211
Provisions released	(194)	(65)
<b>Closing balance</b>	<b>1,564</b>	<b>1,156</b>

The other provisions balances are made up of provisions for future loss on contracts and provisions for warranty expenses. Should a project have a requirement to give a warranty, this is provided for based on the best estimate of future cashflows.

<sup>8</sup> On 10 February 2023 responsibility for NPL transferred from BEIS to the new Department for Science, Innovation & Technology.

## 16. Share capital

Allotted, called up and fully paid	£
At 1 January 2022 Share Issue (76 Ordinary shares at £1 each)	76
<b>At 31 December 2022</b>	<b>76</b>

### Ordinary Share rights

The Company's ordinary shares, which carry no right to fixed income, each carry the right to one vote at general meetings of the Company. All shares rank equally.

## 17. Share premium reserve

	Share Premium £'000s
<b>Balance at 1 January and 31 December 2022</b>	<b>115,400</b>

## 18. Employee benefits

### Defined contribution schemes

The Company operates a defined contribution scheme for all qualifying employees in the United Kingdom. The contributions payable by the Company charged to profit or loss amounted to £7,220k (2021: £6,595k). Contributions totaling £799k (2021: £766k) were payable to the fund at the year end and are included in creditors.

### Defined benefit scheme

#### The NPL Management Limited Pension Scheme

The Company operates a defined benefit scheme for qualifying employees (closed to new members) of the Company.

Under the scheme, the employees are entitled to retirement benefits varying between 1.111 and 1.667% of final pensionable pay for each year of Pensionable Service on attainment of their normal retirement age of 60. No other post-retirement benefits are provided. The Scheme is a funded scheme.

Under the Schedule of Contributions agreed with the pension scheme trustees following conclusion of the formal actuarial valuation conducted as at 5 April 2019, the Company is contributing to the scheme at the rate of 47.9% of active members' pensionable pay less 3.4% of members' Band Earnings. As the Scheme was fully funded on the statutory funding basis as at 5 April 2019 no deficit contributions are required to be made to the Scheme.

The most recent comprehensive triennial valuation of the Scheme was carried out at 5 April 2019. The company has employed an independent actuary to approximately update this valuation, as required by FRS102, allowing for differences between the actuarial assumptions used by the Scheme for funding purposes and those adopted by the company to measure the Scheme's assets on the financial statements, as well as adjustment for benefits paid by the Scheme.

	Valuation at	
Year	2022	2021
<b>Key assumptions used:</b>		
Discount rate	5.0%	1.8%
Rate of salary increases	3.2%	3.4%
Rate of increase in pensions in payment	3.0%	3.2%
Inflation (RPI)	3.2%	3.4%
Inflation (CPI)	2.9%	3.1%

**Mortality assumptions:**

The assumed life expectations on retirement at age 60 are:

Year	Valuation at	
	2022	2021
<b>Retiring today:</b>		
Males	27.9	28.4
Females	29.7	30.6
<b>Retiring in 20 years:</b>		
Males	28.7	29.8
Females	31.1	32

Amounts recognised in the profit and loss account in respect of the defined benefit scheme are as follows:

	2022 £000s	2021 £000s
Current service cost	2,525	2,753
Net interest gain	(943)	(545)
Admin expenses paid from plan assets	293	232
	<b>1,875</b>	<b>2,440</b>

Amounts recognised in other comprehensive income in respect of the defined benefit scheme are as follows:

	2022 £000s	2021 £000s
<b>Total cost/(gain) relating to defined benefit scheme</b>	15,425	(13,636)

Movements in the fair value of scheme assets were as follows:

	<b>2022</b> <b>£000s</b>	<b>2021</b> <b>£000s</b>
At 1 January	273,065	264,263
Interest income	4,895	3,689
Return on plan assets (excl. amounts incl. in net interest costs)	(109,605)	6,703
Contributions from employer	2,267	2,395
Contributions from scheme participants	35	39
Benefits paid	(4,252)	(3,792)
Admin expenses paid from plan assets	(293)	(232)
<b>At 31 December:</b>	<b>166,112</b>	<b>273,065</b>

Movements in the fair value of scheme liabilities were as follows:

	<b>2022</b> <b>£000s</b>	<b>2021</b> <b>£000s</b>
At 1 January	221,684	226,473
Service cost	2,525	2,753
Interest expense	3,952	3,144
Benefits paid	(4,252)	(3,792)
Settlement payments from employer	35	39
Effect of change in assumptions	(100,057)	(6,933)
Effect of experience adjustments	5,877	-
<b>At 31 December:</b>	<b>129,764</b>	<b>221,684</b>
<b>Net Asset recognised in the balance sheet</b>	<b>36,348</b>	<b>51,381</b>

The analysis of the scheme assets at the balance sheet date was as follows:

Year	Fair value of assets	
	2022 £000s	2021 £000s
Cash and cash equivalents	415	14,854
Equity instruments	5,837	26,695
Debt instruments	133,330	212,238
Real estate	5,037	7,017
Other assets	21,493	12,261
<b>Total</b>	<b>166,112</b>	<b>273,065</b>

**19. Financial commitments**

Total future minimum lease payments under non-cancellable operating leases are as follows:

	<b>2022</b> <b>£000s</b>	<b>2021</b> <b>£000s</b>
Within one year	799	350
Between one and five years	365	909
<b>Total</b>	<b>1,164</b>	<b>1,259</b>

In respect of the premises and accommodation services, the Company paid base rent of approximately £15,792k in 2022 to BEIS<sup>9</sup> (2021: £15,500k).

**20. Other Loans**

	<b>2022</b> <b>£000s</b>	<b>2021</b> <b>£000s</b>
Within one year	3,031	2,781
Between one and two years	3,138	2,879
Between two and five years	10,101	9,269
In over five years	19,377	17,778
Less amounts due within one year	(3,031)	(2,781)
<b>Total</b>	<b>32,616</b>	<b>29,926</b>

The loan facility is provided by BEIS to finance the purchase of capital equipment and the creation of associated infrastructure for the laboratories and testing facilities that support the National Measurement System (NMS).

Loans are repayable by instalments over a 10-year term. The amount of the installments will vary depending on the level of drawdown. The rate of interest is fixed at 3.5%.

<sup>9</sup> On 10 February 2023 responsibility for NPL transferred from BEIS to the new Department for Science, Innovation & Technology.

## 21. Controlling party

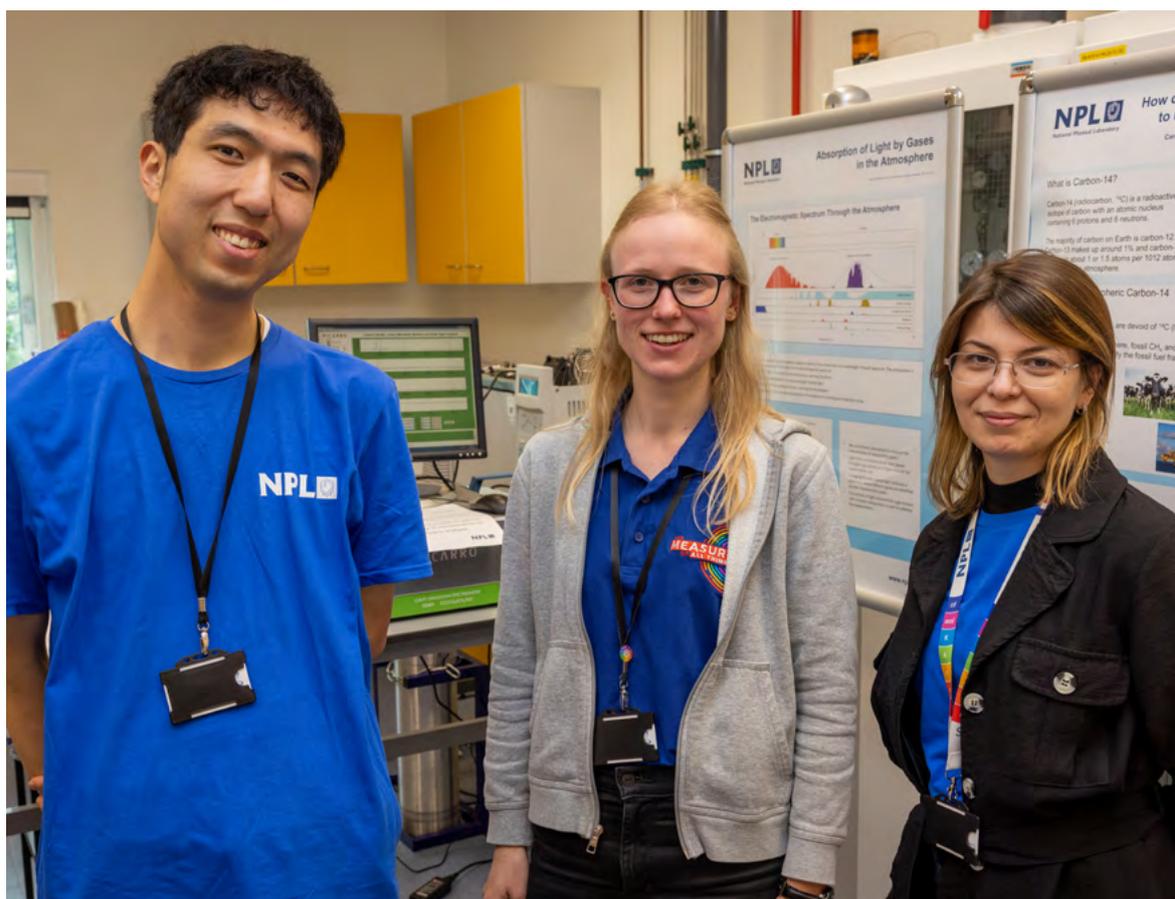
NPL Management Limited's registered office is National Physical Laboratory, Hampton Road, Teddington, Middlesex, TW11 0LW. The Company is wholly owned by the Secretary of State for Business, Energy and Industrial Strategy ('BEIS'). The smallest and largest group that the Company's financial statements are consolidated into are the Whole Government Accounts, available at [www.gov.uk](http://www.gov.uk) and from The National Archives.

## 22. Related parties

The Company has taken advantage of the exemption granted by FRS 102 not to disclose details of related party transactions with BEIS<sup>10</sup> and other entities within its 100% owned Group.

## 23. Capital commitments

The Company had capital commitments relating to scientific equipment of £5,054k at 31 December 2022 (2021: £6,287k).



<sup>10</sup> On 10 February 2023 responsibility for NPL transferred from BEIS to the new Department for Science, Innovation & Technology.







**National Physical Laboratory**

## **NPL Annual Report and Financial Statements**

For the year ended 31 December 2022

Company Registration No: 02937881 (England and Wales)

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NPL Management Limited 2023.

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