Introduction

Intellect Labs and **The Patent Searcher** welcome the arrival of a patent box regime in Australia and the opportunity to provide feedback on the Treasury's Patent Box Discussion Paper on Policy Design.

At Intellect Labs we help ambitious businesses with R&D tax incentive, grant strategy and IP centric projects across the medtech, biotech, food and beverage, recycling and manufacturing industries. We collaborate with an expandable network of IP experts to assist our clients to leverage the ideas and products they develop.

Our team is led by two Principals who have spent their careers working at the intersection of the Australian tax and intellectual property systems. As part of this work, we have published in-depth analysis examining preferential tax treatment for IP in other jurisdictions in The Tax Institute's *The Tax Specialist* journal. These publications are available here and here.

To ensure that we can make a productive contribution to this discussion, Intellect Labs has collaborated with the IP Analytics team at The Patent Searcher in preparing this response.

Dr George Mokdsi leads the team at The Patent Searcher and has 20 years of experience helping companies and legal practitioners navigate the complex world of patents and scientific literature. He is highly regarded in the IP industry as a leading patent analyst having pioneered new and innovative processes and systems in this specialist field. Dr Mokdsi has a PhD in chemistry and has developed the highly specialised skill of searching pharmaceutical patents.

Dr Mokdsi is the go-to patent searcher and analyst for many top IP firms and organisations with sophisticated IP functions. He also consults and provides advice to government departments that deal with IP and innovation.

Intellect Labs

The Patent Searcher

A data-driven approach to patent box policy design

We strongly support attempts to use preferential tax treatment for IP to attract substantial activity such as R&D and manufacturing, as well as to retain the ownership of IP in Australia.

As with all tax policies, and particularly those that that confer preferential treatment for certain amounts, careful consideration is required to ensure equity, simplicity, certainty and additionality. While our responses to the consultation questions draw on our own knowledge and experience with Australian innovators, above all we advocate for **a data-based approach to patent box policy design** to help achieve these outcomes.

Australia has taken a 'watch and wait' approach over the last decade while other nations have refined their preferential IP regimes, leaving us with many programs from which to learn. This is complimented by the existence of substantial IP datasets now available to the Federal Government via IP Australia, and sophisticated experts in the public and private sectors able to interpret this data.

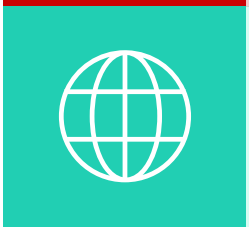
Given the breadth of information available, we believe that a concentrated data analysis effort will ensure best prospects of effectiveness for Australia's patent box regime.

Our responses

Intellect Labs and The Patent Searcher have provided responses to several of the questions posed by The Treasury. We believe that the areas where we can add the most value to the discussion are primarily concerned with:

The potential use of patent analytics and other methods to provide insight into program design

The ability to leverage the R&D tax program in delivering patent box benefits



Insights into ways that some of the characteristics of patent box programs in other jurisdictions could be used to achieve the desired objectives

As well as responding to the consultation questions, we have commented on issues that should be continually considered throughout design and delivery of the patent box regime on the subjects of:

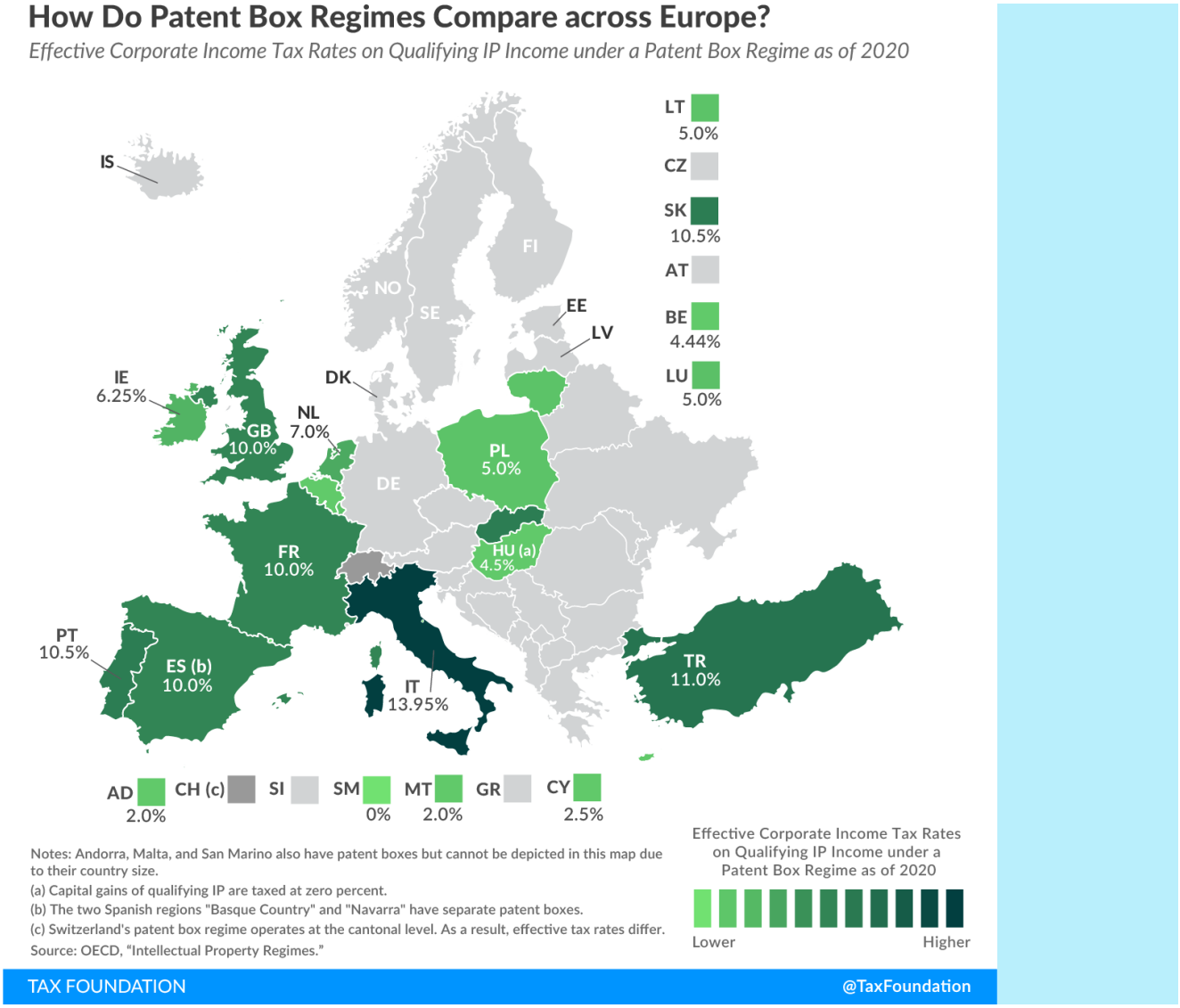
Expansion of the patent box benefits to other industries and technology areas

Ensuring access and benefits for small and medium businesses (SMBs)

Expansion of the patent box benefits to other categories of IP similar to patents

Question 1: What features of patent boxes in other jurisdictions are most significant and important for designing the Australian patent box to support the medical and biotechnology sectors

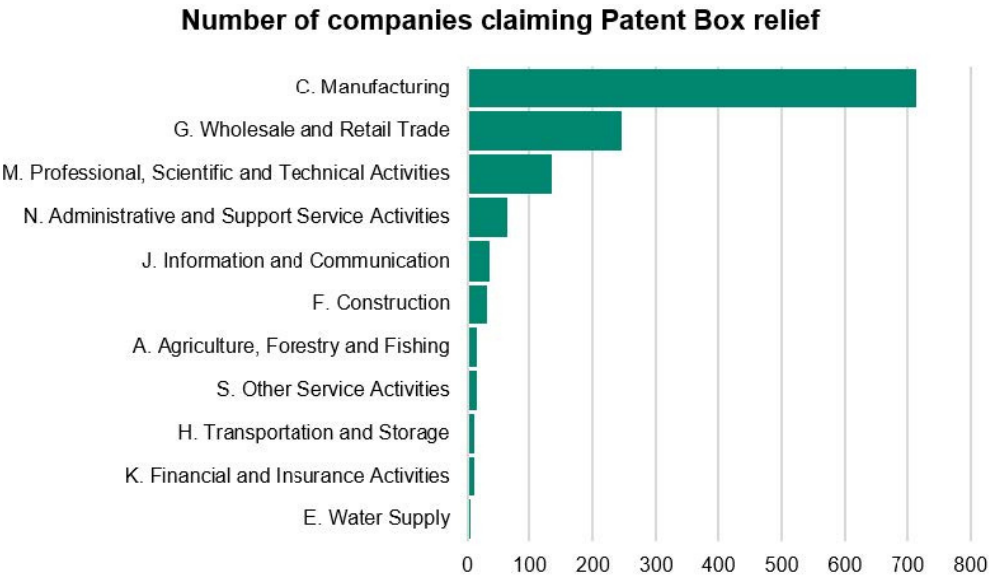
The tax rate of 17% proposed for the patent box program remains notably higher than that used by patent box programs in other jurisdictions. Examples of preferential tax rates used in Europe are provided in the below graphic from the Tax Foundation. While we acknowledge the dangers of a 'race-to-the-bottom' mentality, The Treasury should assess whether this a a 17% tax rate would achieve the desired objectives of the program. This is a difficult question given that the concessional tax rate for patents is one of many factors that contributes to Australia's desirability as an R&D and IP holding centre.



Expansion of the patent box benefits to other industries and technology areas

One of the defining characteristics of the Australian patent box policy is its applicability only to medtech and biotech patents. This has left businesses in other industries wondering why they won't be able to access the concessional tax rate for patent income.

The program's tight scope is much more restrictive than almost all comparable programs globally. In the UK for example, the number of companies claiming patent box relief by industry sector is shown in the HMRC data below:



https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/921792/2020_Patent_Box_Publication_-_accessible.pdf

Over half (715) of the companies that claimed the UK Patent Box in 2017-18 were in the Manufacturing sector. This includes the pharmaceuticals industry which accounted for 30% of the relief. So while the pharma industry did have a very high level of participation, plenty of other industries are also benefiting from the program.

Under the Federal Government's planned patent box, companies in the Government's other priority sectors such as Recycling, Clean Tech, Food and Beverage, Defence, Space, Resources Tech and Critical Minerals will miss out. These are industries that the Government has itself identified as having significant growth potential for Australia, where keeping important homegrown IP onshore should be a focus.

We recognise the value of trialling the patent box with the biotech/medical industries. If it is successful, we would welcome expansion of the program to other industries.

Expansion of the patent box to other categories of intellectual property that are substantially similar to patents

We hope that in designing the new Patent Box program the Government is clear in its objectives for the scheme. Increasing patent filings should not be the goal as this alone will not translate to the promotion of a healthier culture of innovation in Australia. Importantly, patents represent only one form of IP protection and do not suit every business. The most recent data from the ABS indicates that approx. 13% of innovation-active businesses utilise secrecy/confidentiality agreements for IP protection (compared with 3% that utilise patents). As patents necessitate that the details of a company's invention are publicly disclosed, they are not always the preferred method of IP protection.

Having said this, we acknowledge that patents may be the preferred method of IP protection for businesses in the biotech and medical sectors. However, as the program is delivered and develops further, we would like to see suitable consideration given to the potential for patent box incentives to be applied more broadly to other forms of non-patent IP that better serve the strategic objectives of some businesses.

For example, many programs in other jurisdictions provide benefits for software. Some programs also confer benefits for other forms of IP that are substantially similar to patents such as patentable inventions that are protected as business secrets. The advantage of a broader range of eligible IP is that businesses are not encouraged to 'patent for the sake of patent box.' Such a behavioural change would result in reduced tax revenue without any increase in innovative activity.

Ensuring access and benefits for SMBs

The need for sovereign capability in vaccine and drug development is a high Government priority and is inevitably being led by large and established enterprise. There's no doubt that this need has been a driver for getting a patent box regime over the line in Australia, and that the program is intended to benefit these businesses. However, to ensure long term benefits, we encourage the Government to consider any measures that could improve accessibility for small and medium businesses (SMBs).

The UK patent box program has demonstrated a clear bias to large businesses. Between 2016 and 2017, large companies accounted for 96.3% of the total UK patent box relief claimed.

It is reasonable to predict that larger businesses in the chosen sectors for the Australian regime will be the primary beneficiaries if the UK program design is mirrored. The Australian Government could consider special measures for SMEs including refundability of tax benefits where no tax liability exists, or simpler pathways to entering the program, to ensure that the next generation of businesses like CSL, Cochlear and ResMed are supported.

Notable examples of such measures in other jurisdictions include the ability for French SMBs to access patent box benefits for patentable inventions (i.e. inventions which have a level of patentability equivalent to that of a patent or a utility certificate). Patentability is assessed and certified by the French INPI (National Institute of Industrial Property). The purpose of the French certification process is to allow patent box benefits to be accessed without the requirement that a patent be filed. This provides entities with the option of avoiding disclosure and continuing to enjoy legal protection of the information as a business secret.

In the Netherlands, small businesses (defined by worldwide net group sales of less than EUR 50 million per year and a gross benefit from IP not exceeding a total of EUR 37.5 million in 5 consecutive years) can apply for the innovation box with an 'R&D statement'. A small taxpayer may also include unprotected IP in the innovation box regime.

Question 2: Are patents applied for by medical and biotechnology companies with domestic R&D operations generally Australian standard patents?

We recommend that The Treasury employs the use of the patent analytics tools at its disposal via IP Australia to draw a reliable and data driven conclusion on this question.

IP Australia's patent analytics hub has structured and standardised the Australian patent data (e.g. sourced from IPGOD) and is able to analyse the foreign patent filing data through the European Patent Office (EPO) PatStat data. IP Australia's patent analytics hub has the technical skills and resources to accurately perform this analysis and could determine exact numbers of patent filings in this area of technology.

The Patent Searcher's recommended approach to this analysis

The analysis approach recommended would be to start with the Australian patent data and apply a filter that limits to standard Australian patents filed in the medical and biotechnology field. This can be done based on the International Patent Classification (IPC) codes assigned to standard Australian patents when they are published.

The patent data includes the name of the applicant of the patent, and the country is shown in the applicant field.

Some clean up and standardising of the applicant names may be necessary so the names can be accurately grouped and counted. IP Australia's analytics hub routinely performs this standardisation. The year of filing can also be easily included in the analysis and any subsequent breakdowns.

For applicants identified as having filed standard Australian patents in the relevant field, the number of foreign patents they have filed can also be extracted from the EPO PatStat data. The number of foreign patents filed can be counted as the number of patent families, as well as the number of individual patents filed in each jurisdiction. The family information is also available in the EPO PatStat data.

The legal status of the Australian patents (i.e. whether the patent application is pending or granted or dead) can be extracted from the Australian patent data. The legal status for foreign patents is a little more complicated to source from a single location in a standardised form. This may need to be extracted from a commercial patent database such as Minesoft's PatBase or Clarivate's Derwent Innovation.

The recommended technology area IPC mapping schema also used by WIPO and other patent offices is provided at Appendix A.

Question 3: In instances where an invention is patented in other jurisdictions but not in Australia, is there a way of judging whether the scope of claims in these patents would be substantially similar to the scope of claims in a standard patent that would have been granted in Australia?

From a patent analytics perspective, there is no way to compare an international patent to an Australian patent that does not exist. In our view, there are therefore two viable approaches to achieving this outcome:

- A detailed consideration and comparison of the general patent law across jurisdictions, followed by a conclusion as to whether another jurisdiction's standards are as high, or higher, than those required for an Australian standard patent. This assessment could be informed by mechanisms such as the Global Patent Prosecution Highway (GPPH) and the Patent Cooperation Treaty (PCT) that already seek to better standardise the path for patent protection across jurisdictions.

- The creation of a new certification process to be carried out by IP Australia to certify that the scope of claims would have been granted in Australia. Such a certification process would not be without precedent. In France, patentable inventions (i.e. inventions which have a level of patentability equivalent to that of a patent or a utility certificate) are eligible for concessional tax treatment under the French IP tax regime. Patentability is assessed and certified by the French INPI (National Institute of Industrial Property).

The purpose of the French certification process is to allow patent box benefits to be accessed without the requirement that a patent be filed. This provides entities with the option of avoiding disclosure and continuing to enjoy legal protection of the information as business secrets.

Question 4: What is the best approach to provide certainty around access to the regime for the medical and biotechnology sectors?

Question 5: What are the core concepts and applications that need to be covered by any definition of the medical and biotechnology sectors for the purpose of defining access to the patent box?

We defer to industry bodies such as AusBiotech and their constituents in crafting definitions that best achieve the objectives of the program. In this regard, we note that AusBiotech's draft response to the consultation paper suggests the use of definitions in the *Therapeutic Goods Administration Act 1989*.

Having said this, we make the following observations:

- While we acknowledge that the use of the International Patent Classification to define eligible patents is not perfect, we believe the simplicity, measurability and integrity that such a system could provide is significant.

- However, the inability for an entity to influence the classification of its own patent would need to be addressed by ensuring an avenue for appeal and/or dispute of administrative decisions. Classifications would also need to be made and communicated as soon as possible after patent application to ensure certainty for entities around access to benefits.

- More clarity is required about the technologies that the Government wants to support with the patent box. Biotechnological processes are finding far broader applications than the medical and pharmaceutical sectors with such technologies being used in the food and beverage, recycling and materials industries. If the Government is seeking to support and accelerate the use of biotechnological processes more broadly with the patent box (which we believe should be the case), then definitions will need to be sufficiently broad to ensure that this is so.

Question 6: What sort of businesses own patented inventions relating to low emissions technologies, and would introducing a tax concession through a patent box support the clean technology energy sector?

From an analytics perspective, there is not a straight-forward way of identifying patents that relate to low emissions technologies. An expert patent searcher could devise a query based on keywords and IPC codes that may be useful in identifying a representative set of patents related to low emissions technologies. A similar approach as described under question 2 could also be adopted to look at any clean technology energy patent.

Question 7: Do patents play a strong commercial role in the clean technology energy sector, or are other strategies for using IP more important (such as being first to market)?

This question could be effectively answered by surveying entities working in the clean technology energy sector.

A starting list of Australian entities conducting R&D in clean technology energy sector could be identified from the Australian patent data in a similar way to that described in the answer to question 2. There would be IPC groups that could be selected that define the clean technology energy sector. However, this method of forming a starting list would not identify entities conducting R&D in the clean technology energy sector that have not filed a published Australian patent.

It may be possible to identify an additional list of entities developing clean technology energy based on Australian trade marks that are filed in classes relevant to clean technology energy. Trade mark filing activity would be representative of development in clean technology energy that is closer to the commercialisation stage compared to what may be indicative of the development stage based only on the filing of a patent.

Question 11: Do existing record keeping systems allow companies to show how R&D expenses are related to patented inventions? Can companies divide this into expenses incurred in Australia and elsewhere in order to calculate the proportion of R&D related to the patented invention that occurred in Australia?

While some companies operate sophisticated systems and processes that enable accurate tracking and correlation of R&D expenses to patented inventions, this is the exception rather than the rule. This capability is more common with large, more mature businesses that have clearly defined and formally structured R&D activities. Such businesses are also well-resourced and have administrative support to aid in financial analysis and record-keeping.

However, a significant amount of R&D activity is undertaken by SMB operators, or in businesses that are poorly resourced and/or are yet to develop and implement sophisticated processes. This presents practical barriers to the ability to accurately track and connect R&D spend to IP outcomes. A further barrier observed in identifying and attributing R&D spend to patented inventions is the propensity for businesses to rely on informal (secrecy & confidentiality agreements) rather than formal IP protection.

For companies that have established systems for tracking R&D spend on defined and well-planned R&D initiatives, there exists an ability to determine the split between expenses occurred in Australia and elsewhere. Many companies undertaking R&D and IP development lack the capabilities to accurately correlate R&D spend to patented inventions, let alone split these between the locations that expenditure has been incurred. Cost analysis and apportionment methods are able to be used by these types of companies when seeking to claim R&D costs via the R&DTI. Such methods would provide an example of how similar cost allocations could be used for development of IP.

Question 12: How much R&D activity (related to patented inventions) occurs outside Australia? How is R&D usually split between related and unrelated parties?

The R&DTI program provides companies with the opportunity to register and claim R&D activities undertaken overseas (via the lodgement of an Overseas Finding Application). However, the use of this process is not generally indicative of how much R&D activity occurs overseas because:

- Overseas Finding Applications can only be made by companies that spend less than half of their R&D project expenditure outside Australia. Companies that undertake Australian R&D but undertake the majority of their projects overseas would be excluded from applying and therefore may only be registering Australian activities despite undertaking overseas R&D.

- Companies typically undertake a materiality analysis prior to pursuing an Overseas Finding Application as the time and effort involved in registering eligible overseas R&D activities necessitates a material tax benefit via the R&DTI. As a result, companies would typically only register overseas activities for large projects and not register or pursue claims for overseas activities in smaller projects.

It is similarly difficult to use the R&DTI to establish the general split of R&D between related and unrelated parties. The manner in which each company pursues its R&D initiatives is unique and the nature of input from external parties is dependent on numerous factors, for example:

- The knowledge held internally within the business
- The resources available to the business
- The technology, plant and equipment available to the business
- The field in which the business operates and the nature of the R&D gains being pursued
- Regulations and requirements that may impact who can provide the services and support required for a project

In terms of formally registered R&D activities via the R&DTI, this program requires that eligible R&D costs incurred and paid to related parties be classified as 'Payments to Associates'. Similarly, costs incurred to unrelated third parties (including external contractors and research service providers) are separately disclosed. However, it's likely that the classification of costs in this way does not always provide an accurate picture of the split of R&D between related and unrelated parties.

One method to collect this data for future financial periods would be to add relevant questions to Australian Bureau of Statistics ('ABS') surveys provided to companies regarding their business expenditure on R&D.

Question 13: Is the existing legal framework for the R&D tax incentive appropriate for determining R&D conducted in Australia for the purposes of the patent box? Do companies already collect this type of data and report it to the Government in some way (such as for the R&DTI)?

While the R&DTI provides a useful framework for establishing the extent to which Australian companies undertake R&D, it is worth noting that the activities and costs claimed through this program need to meet specific criteria of R&D defined by the *Income Tax Assessment Act 1997*. The R&DTI legal framework incorporates various legislative requirements (including exclusions and exceptions) that may conflict with amounts that need to be identified for a patent box regime.

R&D initiatives pursued by Australian companies may well involve activities and costs that extend beyond those captured through the R&DTI (for example, costs of depreciating assets fall outside this program). This is further described in the response to question 14 below.

R&D investment by Australian companies is also assessed as part of surveys administered by the ABS. Data provided for ABS purposes typically involves much broader assessments and estimates of R&D activities and costs and would provide an alternative source of data regarding R&D pursued in Australia.

It is important that the limitations applied to the definition of R&D activities and costs

for the purposes of the R&DTI program be understood as part of any determination of whether this will provide an appropriate framework for the purposes of a patent box regime.

Question 14: To what extent are the R&D expenses of Australian patented inventions not entirely the subject of R&DTI claims?

R&DTI claims are governed by relevant sections of the *Income Tax Assessment Act 1997*, which includes provisions that define eligible R&D expenditure for the purposes of calculating R&D tax offset entitlements. These limit, or exclude entirely, certain types of expenditure related to R&D activities and the development of patented inventions. For example:

- Costs of depreciating assets are excluded
- Expenditure to construct or acquire a building (including alterations, improvements, etc.) are excluded
- Interest costs are excluded
- Core technology costs are excluded
- Costs where the expenses are deemed to be not at risk (i.e. where there is a guaranteed return) are excluded
- Costs to acquire goods or raw materials that are transformed in R&D activities (feedstock costs) are subject to an adjustment and therefore, even though these costs can be eligible, they are often excluded from R&DTI claims given the limited benefit (or in some instances the promotion of a worse outcome for the claim of included)
- Decline in value expenses for assets used to undertake R&D activities are eligible, but may not be included given the administrative burden of tracking the use of these assets in R&D activities (as required by the ATO for these costs to be claimed).

As such, there may be instances where companies incur costs that they view as relevant to development of a patented invention that they are unable to include, or opt to exclude, from an R&DTI claim.

Question 16: How significant is the role of R&D that occurs after a patent has been applied for? What portion of an invention's total R&D would this typically account for in the medical and biotechnology sectors?

From a patent data analytics perspective, it may be that filing of related patent applications that are continuations or divisional of the originally filed patent would be indicative of further R&D after the original patent is filed. This information could be extracted from the patent data using methods described at question 2.

It may be possible to answer this question by surveying relevant entities, using patent filing data as a method of identifying survey targets.

Question 17: To what extent are Australian-based manufacturing processes subject to their own patents in the medical and biotechnology industry?

From a patent data analytics perspective, an indication of 'process of manufacture' patents filed in the medical and biotechnology field could be obtained by further limiting the patents identified in the method outlined under question 2 to those which refer to keywords in the claims that are likely to indicate a manufacturing process is claimed. E.g. look for keywords in the claims such as "process" or "method" or "preparation".

Question 18: What will be the implications of targeting the patent box to new patented innovations (i.e. have a patent priority date after 11 May 2021)?

Question 19: Would a start date for the patent box's concessional tax treatment of income years commencing on or after 1 July 2022 give companies enough time to prepare for the regime? How would it impact on new R&D?

A patent box that recognises patents with a priority date after 11 May 2021 as eligible for the program will be inaccessible to most companies for at least four years. This needs reconsideration if it is the Federal Government's intention to improve IP retention immediately.

If this is the intention, the Government should select a historical date and design the policy such that all patents with a priority date after the selected date are eligible for preferential tax treatment from 1 July 2022. This would also give the ability to use patent data analytics to facilitate simple modelling of the number of patented inventions that would be eligible for the program as at the start date.

APPENDIX A

Recommended technology area IPC mapping schema

IPC Code	Field description
G01N 33	Analysis of biological materials
C07G	Biotechnology
C07K	Biotechnology
C12M	Biotechnology
C12N	Biotechnology
C12P	Biotechnology
C12Q	Biotechnology
C12R	Biotechnology
C12S	Biotechnology
A61B	Medical technology
A61C	Medical technology
A61D	Medical technology
A61F	Medical technology
A61G	Medical technology
A61H	Medical technology
A61J	Medical technology
A61L	Medical technology
A61M	Medical technology
A61N	Medical technology
G16H	Medical technology
H05G	Medical technology
A62C	Environmental technology
B01D 45	Environmental technology
B01D 46	Environmental technology
B01D 47	Environmental technology
B01D 49	Environmental technology
B01D 50	Environmental technology
B01D 51	Environmental technology
B01D 52	Environmental technology
B01D 53	Environmental technology
B09B	Environmental technology
B09C	Environmental technology
B65F	Environmental technology
C02F	Environmental technology
E01F 8	Environmental technology
F01N	Environmental technology
F23G	Environmental technology
F23J	Environmental technology
G01T	Environmental technology