ENVIRONMENT, CLIMATE CHANGE AND LAND REFORM COMMITTEE

AGENDA

20th Meeting, 2018 (Session 5)

Tuesday 19 June 2018

The Committee will meet at 9.30 am in the Robert Burns Room (CR1).

1. **Decision on taking business in private**: The Committee will decide whether to take item 6 in private.

2. **Climate Change Bill**: The Committee will take evidence on the Bill at Stage 1 from—

   Sara Grainger, Decarbonisation Delivery Unit Team Leader, Mark Eggeling, Solicitor, Eleanor Stanley, Deputy Bill Manager, and Calum Webster, Bill Manager, Scottish Government.

3. **Scotland's biodiversity targets**: The Committee will take evidence from—

   Hugh Dignon, Head of Wildlife and Protected Areas, Scottish Government;
   Sally Thomas, Director of People and Nature, Scottish Natural Heritage.

4. **Subordinate legislation**: The Committee will consider the following negative instrument—

   Environmental Protection (Microbeads) (Scotland) Regulations 2018 (SSI 2018/162)

5. **Climate Change Bill (in private)**: The Committee will consider evidence heard earlier in the meeting.

6. **Scotland's biodiversity targets**: The Committee will consider evidence heard earlier in the meeting.
The papers for this meeting are as follows—

**Agenda Item 2**

Climate Change Bill cover note
PRIVATE PAPER
ECCLR/S5/18/20/1
ECCLR/S5/18/20/2
(P)

**Agenda item 3**

Biodiversity cover note
PRIVATE PAPER
ECCLR/S5/18/20/3
ECCLR/S5/18/20/4
(P)

**Agenda item 4**

Subordinate legislation cover note
ECCLR/S5/18/20/5
Introduction

1. The Climate Change (Emissions Reductions Targets) (Scotland) Bill was introduced on 23 May 2018 and under rule 9.6 of the Standing Orders, the Parliamentary Bureau referred the Bill to the Environment, Climate Change and Land Reform Committee to consider and report on the general principles.

2. The Scottish Government has published the following documents in relation to the Bill:
   - Climate Change (Emissions Reductions Targets) (Scotland) Bill
   - Policy Memorandum
   - Explanatory Notes
   - Financial Memorandum
   - Delegated Powers Memorandum
   - Statement on Legislative Competence

3. In addition the Cabinet Secretary for Environment, Climate Change and Land Reform wrote to the Committee to highlight an information and analysis document to support discussion of the Bill. This is included at Annexe A.

4. No secondary Committee was appointed to scrutinise the Bill. However, the Finance and Constitution Committee will consider the Financial Memorandum to the Bill. Provisions relating to delegated powers within the Bill will be considered by the Delegated Powers and Law Reform Committee at Stage 1.

5. This paper sets out the background to the Bill and the Committee’s approach to consideration of the Bill at Stage 1.

Background

7. The key provisions of the agreement were:

- Global temperature rises should be limited to “well below” 2°C and to “pursue efforts” to limit temperature increase to 1.5°C above pre-industrial levels (See Article 2);

- Parties to the agreement are to aim to “reach global peaking of greenhouse gas emissions as soon as possible”;

- Parties are to take action to “preserve and enhance” carbon sinks;

- To conduct a “Global Stocktake” every five years, starting in 2023;

- For developed countries to provide financial support for developing countries to mitigate climate change;

- Creates a goal of “enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change”.

8. Following the adoption of the agreement, the First Minister (who attended the summit) welcomed the agreement and said:

“COP21 has, as we had hoped, achieved a big step forward in the international fight against climate change…..Devolved administrations, like the Scottish Government, will be strong drivers of a progressive climate agenda. We look forward to working with our international partners to secure the successful implementation of the Paris agreement.”

9. In its Programme for Government 2016-17, the Scottish Government signalled its intentions to legislate to create new, more pressing climate change targets via new legislation in order to address the Paris Agreement. In its 2017-18 Programme for Government, the Scottish Government stated the Bill would be included in the programme of legislation that year and said:

“The Climate Change Bill will respond to the historic Paris Agreement by setting more ambitious targets to reduce greenhouse gas emissions. The Bill will increase transparency, demonstrate our commitment to sustainable economic growth and signal to the international community that Scotland is the place to do low carbon business.”

10. The Scottish Government requested advice from the Committee on Climate Change (CCC) in October 2016 and received this advice in March 2017. It sought further advice which was received in December 2017. Between 30 June and 22 September 2017, the Scottish Government consulted on provisions and policy for inclusion in the Bill. The main themes of the consultation were:

- Updating the 2050 target in the Climate Change (Scotland) Act 2009 by increasing this from 80% to 90% lower than baseline levels;

- Whether the Bill should contain provisions to allow for a net zero emissions target to be set at a later date;
To update the interim target for 2020 contained in the Climate Change (Scotland) Act 2009 from 42% to 56% lower than baseline levels;

To add further interim targets of 66% by 2030 and 78% by 2040;

To change the presentation of annual targets from tonnes of emissions to percentages to be consistent with the interim targets;

For these annual targets to be presented as equidistant linear points between the interim targets;

For targets to be set on the basis of actual emissions, rather than adjustments for crediting systems such as the European Union Emissions Trading Scheme (EU ETS);

Whether the interim and 2050 emissions targets should be allowed to be changed;

Reporting, including Climate Change Plans; and

The impacts of the Bill on people, businesses and the environment.

11. The Scottish Government received 19,365 responses, of which 273 were non-campaign generated. An analysis document published in December 2017 highlighted the views of consultees.

Content of the Bill

12. The Bill proposes to increase the 2050 target for reduction of greenhouse gas emissions from the 1990 baseline from 80% (as laid out in the Climate Change (Scotland) Act 2009) to 90%. The Bill also allows for a target of the 100% reduction (known as a net zero target) from the baseline to be created at a future date.

13. The Bill contains 5 Parts and 1 Schedule.

- **Part 1** allows for the creation of a net zero emissions target at a future date and updates the 2009 Act 2050 target from 80% to 90%. It also creates new interim targets for 2030 and 2040, as well as updating the previous 2020 interim target. The Bill creates a new provision for modification of these targets. Part 1 also includes sections proposing annual targets be presented in percentage terms in future and on advice the Scottish Government must seek in setting targets.

- **Part 2** is concerned with Emissions Accounting and how the emissions will be calculated in relation to the targets. This includes restricting the use of carbon units which can be purchased to contribute towards emissions reductions.

- **Part 3** is about the reporting and planning duties of the Scottish Government on the targets. It also includes detail of proposals for how
reports on policies and proposals, suggested to be renamed Climate Change Plans, will be created and published in the future.

- **Part 4** provides further detail on the meaning of terms within the Bill and further consequentials to the 2009 Act.

- **Part 5** contains final general and miscellaneous provisions such as:
  
  i. Meaning of the 2009 Act
  
  ii. Ancillary Provision
  
  iii. Commencement
  
  iv. Short title

**Environment, Climate Change and Land Reform Committee Scrutiny**

14. The Committee has agreed to conclude its evidence taking at Stage 1 of the Bill prior to Christmas 2018. The Committee’s timetable for consideration of the Bill at Stage 1 is:

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
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<tbody>
<tr>
<td>19 June 2018</td>
<td>Bill team evidence session</td>
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<tr>
<td>26 June 2018</td>
<td>Consideration of approach paper</td>
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<tr>
<td>June – August 2018</td>
<td>Call for views</td>
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<tr>
<td>October – November 2018</td>
<td>Evidence sessions</td>
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<tr>
<td>December 2018</td>
<td>Consideration of Stage 1 Report.</td>
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15. The Committee plans to consider its draft Stage 1 report following the Christmas recess 2018 and report to Parliament by the end of January 2019.

16. At its meeting on 19 June 2018, the Committee will hear from the Scottish Government Bill Team. In advance of the meeting, the Committee wrote to the Bill Team and received a response on 12 June 2018. This is available at **Annexe B**.

17. The Committee has received two written submissions in relation to the session which are available at **Annexe C**.

**Clerks**

Environment, Climate Change and Land Reform Committee
Dear Graeme,

When to set a net-zero greenhouse gas emissions target year: Information and analysis to support discussion of the Climate Change (Emissions Reduction Targets) (Scotland) Bill.

As you will be aware the Climate Change (Emissions Reduction Targets) (Scotland) Bill was introduced to the Scottish Parliament on 23 May 2018.

The Bill includes the target levels that were advised by the UK Committee on Climate Change and that the Scottish Government consulted on last year, including a 90% emission reduction target for 2050.

The Bill establishes a net-zero target but it does not set a date for that target. In light of the large number of consultation responses calling for a net-zero target to be set for 2050 or sooner, the Bill requires that Ministers regularly consider the earliest achievable year for such a target.

I considered a range of information and analysis in coming to my view on the target levels, and to support the Committee in debating the issue I have today laid a paper in Parliament that summarises that information and analysis. The paper is annexed to this letter for your ease of reference.

Yours,

ROSEANNA CUNNINGHAM
PAPER LAID IN SCOTTISH PARLIAMENT – “WHEN TO SET A NET-ZERO GREENHOUSE GAS EMISSIONS TARGET YEAR: INFORMATION AND ANALYSIS TO SUPPORT DISCUSSION OF THE CLIMATE CHANGE (EMISSIONS REDUCTION TARGETS) (SCOTLAND) BILL”
12 June 2018

Dear Convener,

**Climate Change (Emissions Reductions Targets) (Scotland) Bill**

Thank you for your letter of 30 May requesting further information on aspects of the Climate Change (Emissions Reduction Targets) (Scotland) Bill. I apologise that we were not able to meet your requested response date, I hope this does not cause too much inconvenience.

Our response to each question is set out in the Annex to this letter.

Yours sincerely

Calum Webster

Bill Manager

**RESPONSES TO QUESTIONS IN LETTER OF 30 MAY**

**SCOPE**

Were other parts of the 2009 Act reviewed for inclusion in the consultation?

The Bill proposals derive from the Government’s commitment to set a new target to reduce emissions by more than 50 per cent by 2020 and to increase transparency and accountability by basing Scotland’s targets on actual emissions from Scotland. The Bill’s focus is therefore on Part 1 of the 2009 Act and increasing emissions reduction targets and improving the accountability of these targets. As amendments were being made to targets and reporting, it was sensible to make other changes to improve the target and reporting framework in Parts 1 and 3 of the 2009 Act.

What are the stakeholder views on the scope?

The written consultation on the Bill did not ask for views on the scope of the Bill, therefore some respondents did not express a view on scope. However some respondents chose to comment on issues wider than the policy proposed in the consultation paper and suggested that the Bill could be an opportunity to legislate more widely on issues that relate to climate change, for example by including delivery measures in the Bill. The campaigns that fed into the Bill consultation process made calls for delivery measures to be included in the Bill. We have undertaken some initial engagement with stakeholders on delivery proposals and will continue to work with them to understand their proposals. The Scottish Government’s view is that the appropriate place to capture policies and proposals for delivery is in the Climate Change Plans that are produced regularly.
When is the next Intergovernmental Panel on Climate Change report due and how will this impact on the passage of the Bill?

The IPCC’s special report on global warming of 1.5 degrees is due to be published in October 2018. The Scottish Government’s approach has always been to base targets on the best scientific understanding, which is evolving all the time, and will continue to evolve. Ministers have written to the UK Government to request that the Committee on Climate Change (CCC) are commissioned jointly to provide advice on UK and Scottish targets in response to the special report. The Bill sets a strategic direction with provisions that are designed for the targets to be updated regularly in response to independent advice that takes into account evolving science and to our commitment to the Paris Agreement.

The next full IPCC Assessment Synthesis Report on all areas of climate science is expected in the first half of 2022, in advance of the first Paris Agreement stocktake process in 2023. The Bill provisions ensure that advice from the CCC on target levels will be sought and published at least every five years.

How does the Scottish Government intend to implement its commitment to create a Just Transition Commission, and why is this not included on the face of the Bill?

The Scottish Government is committed to establishing a Just Transition Commission to advise Scottish Ministers on adjusting to a more resource-efficient and sustainable economic model in a fair way which will help to tackle inequality and poverty, and promote a fair and inclusive jobs market.

The form that the Commission will take, and its membership, are currently being considered and will be announced later this year. We have considered carefully whether our resources at this time should be focused on setting up the commission and supporting it to begin its work or diverted into drafting the necessary measures to give it statutory effect, a process which will take up most of the year, before the Commission can begin its work. We consider the former approach to be the more effective one - providing a statutory basis for the Commission would delay the work we want it to undertake.

Our intended, non-statutory, approach to the Commission is in line with how other nations have sought to undertake just transition initiatives, for example the Canadian Just Transition Task Force and the New York State Environmental Justice & Just Transition Working Group, and will provide flexibility for the commissioners and stakeholders to guide the focus and priorities of the Commission’s work.

What are the current requirements of, or what information does the Scottish Government currently receive from, the private sector in terms of its climate change mitigation activities?

There are a number of requirements on the private sector to report on their climate change activities.

The Scottish Environment Protection Agency (SEPA) collects a range of data on pollutants on a statutory (annual) basis, most notably site-specific emissions from large
emitters of greenhouse gas emissions in Scotland under the EU-Emissions Trading System (EU ETS).

These EU ETS data are reported to the EU and are also used in the production of Scotland’s greenhouse gas inventory. The GHG inventory also employs a range of additional data sources in its construction from official Government surveys, through administrative data collected by regulatory bodies, to data collected by trade bodies and industry associations. Some important data sources relating to the private sector in Scotland include: fuel supply and consumption, vehicle kilometres, livestock populations and waste management data.

There are a range of other ways in which information is currently gathered and reported in the UK. Examples include:

- The UK regulations requiring UK quoted companies to include greenhouse gas in their annual Strategic or Directors’ reports to Companies House
- The Carbon Reduction Commitment (CRC) requires organisations to report emissions to Scottish Ministers. The UK Government intends to replace this in 2019 by extending reporting within annual Strategic or Directors’ reports to unquoted companies of a certain size
- The Energy Savings Opportunity Scheme (ESOS) – a UK wide scheme which transposes part of the Energy Efficiency Directive. This requires the private sector to have an energy audit every 4 years including recommendations for measures to save energy

PART ONE – EMISSIONS REDUCTION TARGETS

Section 1 – Net Zero Emissions Target

A1(3)(b) – what is the “extent to which” the target setting criteria have been considered”? Is it envisaged this would be consistent throughout reports? A1(3)(c) – Does this mean the reasons why it is not consistent with the advice or the reasons why the Government are choosing to do so despite the advice?

The requirement in new section A1(3)(b) to set out the ‘extent to which’ the net-zero emissions target year takes account of the target-setting criteria is consistent with new section 2A(6) (inserted by section 5) as regards the modification of the 2050 and interim targets. It is also consistent with the approach which applies currently in relation to the setting of annual targets under section 5(4) of the Climate Change (Scotland) Act 2009.

The Scottish Ministers currently meet this requirement (in relation to the setting of annual targets) by setting out the extent to which each proposed target takes account of each of the target-setting criteria. For example, a statement under section 5(4) of the 2009 Act would set out the extent to which the proposed target takes account of, among other things, “scientific knowledge about climate change”.

We would expect a similar approach to be adopted under new section A1(3)(b) in the event that the Scottish Ministers lay draft regulations before Parliament which propose to specify the net-zero emissions year. In addition, subsection (3)(b) of this new section, also requires the Scottish Ministers to set out their reasons for proposing to specify this year.
As regards “the reasons why” in new section A1(3)(c), this refers to the Scottish Ministers' reasons for proposing a net-zero emissions target year that is different from the year set out in the advice received from the relevant body (the CCC).

A1(5) – What are the circumstances in which you might do this?

The Bill requires the Scottish Ministers to seek advice from the CCC on the earliest achievable net-zero emissions target year. This requirement applies even after a target year has been set through secondary legislation. If the advice is that the earliest achievable date has changed, this power allows the date to be moved accordingly. For example, if an unforeseen change in technology makes an earlier date achievable, then the net-zero emissions target year could be brought forward. The CCC could also advise that a net-zero emissions target year that has been specified is no longer achievable and recommend that a later year is set. Scottish Ministers could only propose setting a later net-zero emissions target year than has already been specified if this was consistent with the advice from the CCC as to the earliest achievable year. Any proposals by the Scottish Ministers would be subject to affirmative procedure secondary legislation and subject to the agreement of Parliament.

Section 3 – Interim Targets

Will the interim targets also be expressed in megatonnes of carbon? The Committee requests a note of the annual targets in percentages and megatonnes of carbon.

No targets in the Bill will be expressed in megatonnes. The CCC advised in March 2017 that all targets should be set as percentage reductions, so as to be consistent with one another if there are changes to the inventory (as you are aware, under the 2009 Act, some are set as percentages and some in tonnes, and these have diverged). The percentage reduction is considered less sensitive to changes in the greenhouse gas inventory and easier to understand. This change was supported by consultation respondents, as set out in our response under section 9 below.

Emissions will continue to be reported annually in tonnes of carbon dioxide equivalent in the Scottish emissions statistics, as certain of the reporting requirements in new sections 33 and 34 (as inserted by section 16 and 17 of the Bill) are required to be report in terms of tonnes of carbon dioxide equivalent.

A table showing the megatonne equivalents of the percentage reduction targets is provided in Appendix 1.

Section 6 – Duty to seek advice from the relevant body

Will an inventory change ever suggest an exceeded a target? Will it only ever identify further sources of carbon?

- If so, do the targets take into account the fact they might find more?
- If not, would that represent a bonus (forestry example from the CCP draft to final)?
A vital element of the CCC’s proposal is that targets can be modified, in either direction, should re-alignment to substantial changes in measurement methods be needed. Data revisions can affect target achievability in both directions, they can either make them too easy, or so hard as to be unachievable regardless of the policies introduced. Inventory changes do not only involve identifying further sources of carbon.

We are clear that any lowering of target levels should not represent a drop in ambition. The Bill proposals therefore require that Ministers could only propose a lowering of target levels if the CCC has advised that this should occur. The final decision on any change in target levels would be for Parliament, through affirmative procedure secondary legislation.

The targets themselves cannot be set to take into account future inventory changes. The framework proposed in the Bill allows for a balance between responsiveness to science and the need for stability for strategic planning purposes. Targets are therefore fixed against a set inventory for five years. The Bill provides that Ministers must seek advice from the CCC on target levels at least every 5 years. This will ensure that targets are regularly reviewed and that they are able to be aligned with the most up-to-date inventory at the time the advice is received. Advice from the CCC on target levels will be based on the most recent inventory available to them.

The CCC will consider the entire range of target-setting criteria, including inventory revisions, when providing advice on target levels in the future. The effect of an inventory change on future targets levels will depend on its impact relative to the other target-setting criteria.

**Section 9 – Annual Targets – 2021 – 2049**

What are the advantages and disadvantages of the approach to rounding up and down?

The advantages of rounding up or down a target are around transparency and consistency. The majority of annual target levels are unlikely to need to be rounded up or down because they are one-tenth the difference between two whole integers (i.e. the target of 66% for 2030 and 78% for 2040), a calculation which will never require more than one decimal place. However, it is possible that a net-zero emissions target year could be set for mid-decade which could lead to annual target levels ending in very long or endlessly recurring numbers of decimal places (e.g. 86.66666666 ... %). As an example, this could happen if annual targets were calculated as the difference between three years, e.g. between 2040 and 2043 (if the net-zero emissions target year had been set as 2043). In the absence of a rounding rule, it would be unclear how these levels are to be treated and they could become confusing.

**Is tonnes of carbon not a more consistent measurement (as stated in the 2015 report on emissions?)**

In its advice on the Bill, the CCC says: “The Committee’s assessment is that percentage reduction targets provide a more consistent, stable basis from which to drive decarbonisation, as changes to the emissions inventory have a smaller impact.” The Scottish Government agrees with this assessment, and is keen to follow the advice of the
expert advisors on this and indeed, other matters. The written public consultation asked whether respondents agreed that annual emission reduction targets should be in the form of percentage reductions from baseline levels. 172 of the 196 non-campaign respondents (88%) who answered this question agreed with the proposal.

Section 10 - Annual Targets 2017, 18 and 19

The Committee requests the figures for these new proposals in megatonnes for comparison with the current regulations.

A table showing the megatonne equivalents of the percentage reduction targets is provided in the Appendix along with the other comparative figures requested.

Section 12 – Publication of the targets

What is the purpose of publication of a list of targets?

The Bill proposes that annual targets are calculated as the difference between interim targets; or the difference between interim targets and the 2050 target or net-zero emissions target year (if set). The annual targets will be recalculated if the interim or 2050 targets are amended. They will also be recalculated when a net-zero emissions target year is set. It was decided not to include a list of the annual targets on the face of the primary legislation as this could cause confusion if these targets are subsequently recalculated, to reflect shifts in science, knowledge and understanding in this field. Publishing a list of the targets will ensure up to date target levels are freely available and easily accessible to all at any time.

PART TWO – EMISSIONS ACCOUNTING

Section 13 – Net Emissions Account – Restrictions on the use of carbon accounting

Are there costs associated with the potential to purchase carbon credits?

The estimated cost of using credits to make up the gap between what is technically feasible domestically here in Scotland and a net-zero emissions target in 2050 could be around £15 billion over the period to 2050. This is derived from the annual difference in emissions between the CCC’s 90% pathway and a pathway to 100%, based on linear interpolation, multiplied by the annual cost of permits as calculated by BEIS\(^1\). Discounting reduces this value to £6bn. All values are in 2017 prices.

PART THREE – ANNUAL REPORTING CYCLE

Section 16 – Reports on emissions reduction targets

Has the requirement to explain how domestic effort contributed been omitted?
- If so, why?
- What is the impact of this?

The requirement to report on the domestic effort target is not in the revised reporting provisions under the Bill as the Bill establishes a default position that targets must be achieved through domestic effort alone (unless at some point in the future the Scottish Parliament passes legislation to allow for carbon units to be purchased and credited to the net Scottish emissions account). New section 34(1)(b)(iv), inserted by section 17 of the Bill, still requires the percentage of any year-on-year reduction due to domestic effort to be reported annually in a report under section 33.

New section 13A(2), inserted by section 14 of the Bill, provides that, should regulations be made to allow carbon credits purchased by the Scottish Ministers to be credited to the net Scottish emissions account for a year, the regulations cannot set a limit that would be greater than 20% of the planned reduction for that year (i.e. 20% of the difference between the target for year x and the following year, not 20% of the reduction from baseline). This limit effectively replaces the domestic effort target that currently requires the Scottish Ministers to ensure that net Scottish emissions account for at least 80% of reductions in the net Scottish emissions account.

What does “amount” mean – percent or tonnes?

Any reference to “amount” in section 16 refers to tonnes of carbon dioxide equivalent.

Section 18 – Provision of further information

Will there still be reports on all the same elements elsewhere?
What is the justification behind removing the requirement to report on these elements?

This section amends section 42 of the 2009 Act (Reports: provision of further information to the Scottish Parliament) to update references to the report required under section 33 of the 2009 Act which is amended by the Bill.

It also repeals section 42(2) of the 2009 Act which refers to the following reports:

(a) section 33(1) (report on annual targets)
(b) section 36(2) (report on proposals and policies to compensate for excess emissions)
(c) section 40(1) (report on interim targets)
(d) section 41(1) (report on interim targets)

The section 33 report will continue to be made, however the other three reports are no longer required.
The report required under section 36 of the 2009 Act is no longer required because alternative provision is made in new section 35(2) (inserted by section 19 of the Bill) to ensure that the proposals and policies in climate change plans compensate for any excess emissions.

The reports required under sections 40 and 41 of the 2009 Act are no longer required as the new reporting functions established by section 16 of the Bill require a report for every year for which an emissions reduction target has been set. This means there is no longer a requirement to have a separate provision covering the interim target or the 2050 target.

Section 19 – Climate Change Plans

What percentage of respondents thought that the time available for the CCP should be 60 to 120 days and what percentage considered that it should be open ended?

As this was a free text question, the consultation analysis report does not provide percentage figures. Officials have therefore separately analysed these responses and have provided some figures below, noting that many responses are descriptive and do not always neatly answer the question.

Of the 165 responses to this question:

- 81 gave a response indicating support for a specific timescale of up to 120 days. The most common figure suggested was 90 days or at least 90 days
- 7 gave a response indicating support for a specific timescale of more than 120 days but which should not be open-ended
- 15 gave a response indicating support for an open-ended timescale
- 62 gave a response that either did not specifically answer the question or were unclear as to the specific timescale they supported

Are the statistics for the figures used in the draft plan available (2017 figures)?

We have committed to producing annual monitoring reports in respect of the Climate Change Plan, with the first report in October 2018. The monitoring framework will report progress against the indicators contained in the final Plan that was published on 28 February 2018.

PART FOUR – CONSEQUENTIAL

Why are the reporting requirements in sections 38 – 41 of the Climate Change (Scotland) Act 2009 (electricity consumption) being removed? Will reporting on these elements take place elsewhere?

The sections referred to in this question are being repealed as they are no longer required, or they are reported on elsewhere.

Section 38 of the 2009 Act, which requires the Scottish Ministers to report on the impact on emissions of the exercise of electricity generation related functions, is being repealed
as the information will be published in the annual Energy Strategy Statement. This also makes it possible to provide the statutory report, currently produced in October, on a statutory basis as soon as reasonably practicable after the greenhouse gas emissions statistics are available. This is because the information on electricity generation may not be available at the time the emissions statistics are reported. This approach was proposed by stakeholders and discussed in the Technical Discussion Group meetings with stakeholders ahead of the Bill being introduced.

Section 39 of the 2009 Act previously required a report to be laid before the Scottish Parliament by the end of December 2015, and is therefore no longer applicable.

The reports required under sections 40 and 41 of the 2009 Act are no longer required as the new reporting functions established by section 16 of the Bill require a report for every year for which an emissions reduction target has been set. This means there is no longer a requirement to have separate provision covering the interim target or the 2050 target.

**FINANCIAL MEMORANDUM**

The Committee requests detail of analysis the Scottish Government has done to arrive at indirect costs from the Bill of £13 billion?

The Scottish TIMES model is a high-level strategic model, covering the Scottish energy system (which includes Residential and Non-Domestic Buildings, Industrial Processes, Electricity Generation and Transport), as well as non-energy sectors, including Agriculture, Land Use, Land Use Change and Forestry, and Waste. The Scottish TIMES model, at its simplest, is a diagnostic tool to help understand the key inter-relationships across systems. Scottish TIMES belongs to a group of models that were developed by the International Energy Agency to examine long term energy dynamics. There are now more than seventy country versions of TIMES and TIMES modelling has underpinned a large number of studies in both environmental and energy economics, produced by governments, NGOs and in academia.

This approach captures the key characteristics of the Scottish energy system today, and considers the impacts on the future energy and emission flows that result from the deployment of a range of processes and technologies. There are over two thousand technologies and carbon abatement measures that the model can deploy to meet these final demands, and each has a series of associated technical variables, such as operating and investment costs, or technical efficiency, amongst others.

TIMES identifies the least-cost pathway of meeting a set of final energy demands, given a set of technical and policy constraints, including the Scottish Government’s climate change targets.

The Scottish TIMES model has been used to derive the indicative cost of increasing the Greenhouse Gas reduction target from 80% to 90%, estimating it to be approximately £13 billion in the period 2030 to 2050. This is the additional net system cost (which consists of the cost of all technologies and energy sources over the period) of setting a 90% climate change target in comparison to an 80% target, discounted to 2017 prices. Critically, TIMES provides us with an estimate of the system cost of meeting a set of final targets and the overall costs associated with achieving these targets.
demands. It therefore does not provide an assessment of how these costs will be allocated amongst businesses, individuals and government.

As with any model with a long term horizon up to 2050, the results are subject to uncertainty, in particular as we move further away from the present day. The pace of technological change and advances in engineering and information technology across the economy and the energy sector over the next three decades, will have a huge bearing on the energy system and the ways in which we interact with it.

Please provide the Committee with all costs associated with the policies and proposals in the most recent Climate Change Plan.

The Scottish TIMES approach helps identify the most efficient parts of the system to remove carbon and allocates sector envelopes accordingly. Sectors then develop their proposals and policies to ensure their emissions remain within these limits. Cost information from TIMES therefore relates to the technological resource costs; the cost of purchasing the equipment and fuels to deliver the pathway. Critically, TIMES provides us with estimates of the system wide resource cost of meeting a set of final demands, and therefore does not provide an assessment of how these costs will be allocated amongst businesses, individuals and government.

We have estimated the system wide resource cost of meeting the Scottish Government climate change targets using Scottish TIMES. To do this, we have subtracted the system cost of a TIMES model run with no targets from the cost of the model run underpinning the Climate Change Plan (covering the period to 2050). This gives us the indicative cost of meeting the 80% climate change target over and above the cost of taking no action. The resulting indicative resource cost is the equivalent of approximately 1% of cumulative GDP out to 2050, and is in line with international estimates, such as those set out in Stern Review.

What are the costings of not acting to increase climate change mitigation targets?

If the targets are not amended, then the costings would be consistent with the current legislation (i.e. a target of 80% reduction by 2050). This is set out in the answer above.

The Financial Memorandum includes information from a review of key global assessments of the costs of climate change action, including the costs of the damages that will occur if climate change is not mitigated.

The review finds that, amongst studies looking at the impact of global warming of between 2.5 to 3 degrees higher than pre-industrial levels, and presenting the results in terms of GDP, the mean (average) estimate of costs is 2.2% of GDP. The median (middle value of the range) is 1.5%, and the 10th and 90th percentiles are 0.0% and 3.5% respectively. There are no estimates specifically for Scotland.

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2 Provided for the purpose of Bill consideration, this equates to approximately £33 billion between 2018 and 2050 (discounted to 2017 prices).
# TABLE SHOWING MEGATONNE EQUIVALENTS OF PERCENTAGE REDUCTION TARGETS

<p>| Year      | Baseline | 2009 Act (emissions adjusted for the EU-ETS) | Bill (actual emissions) | 2009 Act (emissions adjusted for the EU-ETS) | Bill (actual emissions) | Interim / 2050 Targets (as set) | Annual Targets (expressed as amounts based on current inventory) | Interim / 2050 Targets (as set) | All targets (as proposed) | Annual Targets (as set) | Interim / 2050 Targets (as set) | All targets (as proposed) | Annual Targets (as set) | Interim / 2050 Targets (as set) | All targets (as proposed) | Annual Targets (as set) | Interim / 2050 Targets (as set) | All targets (as proposed) |
|-----------|----------|---------------------------------------------|-------------------------|---------------------------------------------|-------------------------|-----------------------------|----------------------------------|--------------------------------|-----------------------------|-----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------------------------|-----------------------------|-----------------------------|--------------------------------|-----------------------------|-----------------------------|-----------------------------|
| Baseline  | 0%       | 0%                                          | 0%                      | 0%                                          | 0%                      | 0%                          | 0%                               | 0%                            | 0%                          | 0%                          | 0%                            | 0%                          | 0%                          | 0%                               | 0%                            | 0%                          | 0%                            | 0%                            | 0%                          | 0%                          |
| 2010      | 23.6%    | 30.4%                                       | N/A                     | 53,652,000                                  | N/A                     | 53,652,000                   | 70,201,000 (2008 inventory)     | 53,652,000                   | 53,652,000                   | 70,201,000                   | 53,652,000                   | 53,652,000                   | 70,201,000 (2008 inventory)     | 53,652,000                   | 53,652,000                   | 70,201,000                   | 53,652,000                   | 53,652,000                   | 70,201,000                   |
| 2011      | 23.9%    | 30.7%                                       | N/A                     | 53,404,000                                  | N/A                     | 53,404,000                   | 70,201,000 (2008 inventory)     | 53,404,000                   | 53,404,000                   | 70,201,000                   | 53,404,000                   | 53,404,000                   | 70,201,000 (2008 inventory)     | 53,404,000                   | 53,404,000                   | 70,201,000                   | 53,404,000                   | 53,404,000                   | 70,201,000                   |
| 2012      | 24.2%    | 31.0%                                       | N/A                     | 53,226,000                                  | N/A                     | 53,226,000                   | 70,201,000 (2008 inventory)     | 53,226,000                   | 53,226,000                   | 70,201,000                   | 53,226,000                   | 53,226,000                   | 70,201,000 (2008 inventory)     | 53,226,000                   | 53,226,000                   | 70,201,000                   | 53,226,000                   | 53,226,000                   | 70,201,000                   |
| 2013      | 31.7%    | 37.8%                                       | N/A                     | 47,976,000                                  | N/A                     | 47,976,000                   | 77,091,000 (2015 inventory)     | 47,976,000                   | 47,976,000                   | 77,091,000                   | 47,976,000                   | 47,976,000                   | 77,091,000 (2015 inventory)     | 47,976,000                   | 47,976,000                   | 77,091,000                   | 47,976,000                   | 47,976,000                   | 77,091,000                   |
| 2014      | 33.1%    | 39.1%                                       | N/A                     | 46,958,000                                  | N/A                     | 46,958,000                   | 77,091,000 (2015 inventory)     | 46,958,000                   | 46,958,000                   | 77,091,000                   | 46,958,000                   | 46,958,000                   | 77,091,000 (2015 inventory)     | 46,958,000                   | 46,958,000                   | 77,091,000                   | 46,958,000                   | 46,958,000                   | 77,091,000                   |
| 2015      | 34.6%    | 40.4%                                       | N/A                     | 45,928,000                                  | N/A                     | 45,928,000                   | 77,091,000 (2015 inventory)     | 45,928,000                   | 45,928,000                   | 77,091,000                   | 45,928,000                   | 45,928,000                   | 77,091,000 (2015 inventory)     | 45,928,000                   | 45,928,000                   | 77,091,000                   | 45,928,000                   | 45,928,000                   | 77,091,000                   |
| 2016      | 36.0%    | 41.7%                                       | N/A                     | 44,933,000                                  | N/A                     | 44,933,000                   | 77,091,000 (2015 inventory)     | 44,933,000                   | 44,933,000                   | 77,091,000                   | 44,933,000                   | 44,933,000                   | 77,091,000 (2015 inventory)     | 44,933,000                   | 44,933,000                   | 77,091,000                   | 44,933,000                   | 44,933,000                   | 77,091,000                   |</p>
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20
Written Submission from the Just Transition Partnership

Just Transition Partnership
Briefing for members of the ECCLR Committee

Ahead of taking evidence from the Scottish Government’s Climate Change Bill Team on the question:

- How does the Scottish Government intend to implement its commitment to create a Just Transition Commission, and why is this not included on the face of the Climate Change (Emissions Reductions Targets) Bill?

Just Transition and Climate Change Targets

The concept of a Just Transition is central to a successful response to climate change and the implementation of Scottish greenhouse gas emission reduction targets. The draft Bill increases targets under the 2009 Act, and requires sectors to report on emissions reductions, while the Climate Change Plan identifies their current GHG sources and future reductions according to sector.

These challenging overall objectives will require a rapid economic transition so it is vital to show how they can be made to happen – spelling out the industrial changes that are needed and how they can be implemented in ways which benefit the economy, protect employment levels and build social cohesion.

That is the role of Just Transition: ensuring that the transition to a prosperous low carbon economy is done in a way in which the costs and rewards are shared fairly, and employment levels and job quality are protected and enhanced.

This concept provides an approach to the implementation of GHG targets which reflects the need to both drive the transition forward rapidly and to ensure popular support by bringing socio-economic benefits and the needs of workers and communities into account. It embodies principles which should characterise the Scottish approach to climate change mitigation.

The need for a Just Transition Commission

Meeting the emissions reduction targets will require a concerted long-term effort from all social and economic sectors, led by government. The positive vision provided by the Just Transition agenda offers a framework which can be shared across the nation and which can engage the support of all sectors.

The Scottish Government has accepted the case made by the Just Transition Partnership and Stop Climate Chaos Scotland, and committed to establishing a Just Transition Commission in its 2017 Programme for Government. It fell short however, of agreeing to put the Commission on a statutory basis, and the draft Climate Change Bill fails to do so.
Little detail has been revealed about the Scottish Government’s plans for the Just Transition Commission to date. The Just Transition Partnership is calling for the Commission to advise Government on making the transition to a prosperous low-carbon economy in which the costs and rewards are shared fairly; and report on the measures put in place to ensure that livelihoods of workers and of communities are protected and social equity is enhanced. In addition it should play a central role in energising and facilitating these changes through:

- focusing attention on changes needed and doing them in socially just ways;
- securing widespread support through engagement with unions, employers and civil society;
- scrutinising and advising all of the actors and sectors involved.

Such a Commission could assist the Scottish Government in overcoming barriers, and engaging the active participation of workers, employers and civic society. For more on the Just Transition Partnership’s proposals for the remit, functions and composition of the Just Transition Commission, see Annex 1.

**Putting Just Transition in the Climate Change Bill**

The vital importance of the Just Transition approach to realising the transformation to a low carbon economy requires that the Climate Change Bill should enshrine it in a meaningful way. This means:

- including a commitment that a Just Transition approach will be applied to the creation of a low carbon economy, protecting livelihoods, enhancing social justice and contributing to a fairer and more equal Scotland;
- including reporting requirements on Just Transition in the Climate Change Plan i.e. on how proposals and policies will affect employment in different sectors, what measures will be put in place to support the transition of the workforce and related communities, the scale and sources of investment; and annually by Ministers on progress towards these;
- putting the Commission on a statutory basis in order to give it the status needed to carry out these functions effectively and help drive the changes needed, for the duration of the climate targets laid out in the Bill.

The Commission should report to Ministers, and its reports should also be laid before Parliament.

**About the Just Transition Partnership**

The Just Transition Partnership was formed by Friends of the Earth Scotland and the STUC in 2016. Membership includes Unite Scotland, UNISON Scotland, UCU Scotland, CWU Scotland, PCS Scotland and WWF Scotland.
Annex 1 briefing on Proposals for the Just Transition Commission from the
Just Transition Partnership

Just Transition Partnership

Proposals for the

The Just Transition Commission

March 2018

The Scottish Government announced that it would set up a Just Transition Commission in its Programme for Government of September 2017. In creating a Just Transition Commission, it has an opportunity to set out a bold path for a radical and fair transformation of the Scottish economy, both moving towards eliminating greenhouse gas emissions and achieving greater social justice and environmental sustainability.

This document sets out the proposals concerning the Commission from the Just Transition Partnership, set up by the Scottish Trade Union Congress and Friends of the Earth Scotland in October 2016, and supported by Unite, UNISON Scotland, UCU Scotland, CWU, PCS and WWF Scotland.

Context

The current targets for reducing greenhouse gas emissions are set in the Climate Change Act 2009; these will be updated and extended in the Climate Change Bill 2018 in light of the Paris Agreement and the scientific evidence upon which it is based, sending a clear signal to all stakeholders and to private enterprises and investors.

The rapid decarbonisation needed for Scotland's contribution to limits set in the Paris Agreement should not be made at the expense of the workforce in sectors which currently extract or depend on the use of fossil fuels. The UK has already experienced badly-managed de-industrialisation which led to workers losing out and communities being left behind. Similarly, experience to date shows that the growth of renewable energy generation does not necessarily result in the creation of new manufacturing and engineering capacity and employment in Scotland.

Specific measures are needed to ensure that these benefits accrue. We need to put in place measures to ensure that building a low carbon economy results in a growth in employment which protects workers' livelihoods and creates a new industrial base. If planned and delivered in the right ways, achieving decarbonisation should also help deliver a fairer, greener country with better housing, cleaner transport, improved health and greater equity.

Therefore the Climate Change Bill should enshrine a commitment that the transition will be a Just Transition - that is, that the ways in which a low carbon economy will be achieved will protect livelihoods, enhance social justice and create a fairer and
more equal Scotland. This will require substantial flows of investment into low-carbon infrastructure and enterprises and the conversion of existing industrial sectors, including through engagement of the workforce via collective bargaining. With the launch of the Commission, the Scottish Government should commit to developing robust plans which quantify the scale of the investments required for meeting emissions reduction targets and detail how their financing and delivery will be secured; and which consider the merits of increased public ownership in order to speed up and give direction to the transition.

To be effective, steps towards the governments’ low carbon reduction objectives and a just transition will have to be integrated across all relevant parts of government. The objective should be included in the remit of the Scottish National Investment Bank and of a future Government-owned energy company; it should also be integrated into the Economic Strategy and the Energy Strategy. Just Transition should be incorporated into the Climate Change Plan, which should include specific measures and budget lines for supporting the transition of the workforce as well as appropriate performance indicators. The Just Transition should be a core theme of any future industrial strategy.

The Just Transition Commission should advise the Scottish Government on the transition to a prosperous low carbon economy in which the costs and rewards are shared fairly, and employment levels and job quality are protected and enhanced. In addition it can play a central role in energising and facilitating these changes through:

- focusing attention on what needs to be done and how it can be done in socially just ways;
- securing widespread and popular support through engagement with unions, employers and civil society;
- scrutinising and advising all of the actors involved, not just central government.

All sectors of society will have to play their part so it is important that the involvement of unions, workers and communities as well as enterprises becomes the norm.

**Proposals for the Just Transition Commission**

**Remit**

The Just Transition Commission should be given a remit which includes:

- advising ministers on making the transition to a low carbon economy in which the costs and rewards are shared fairly
- reporting on and scrutiny of the measures put in place to ensure that livelihoods of workers and of communities are protected and social equity is enhanced.
- providing direction, leadership and strategic thought for Just Transition in Scotland, building on engagement with unions, workers and employers. In doing so it will support and enable the realisation of the Scottish Government’s vision for a low carbon Scotland
The focus should be on transforming Scotland’s whole economy through driving the transition to low carbon emissions, attending to jobs and job quality and the needs of workers and geographical communities – that is, on what needs to be done and how it can be done expeditiously and with a fair distribution of costs and benefits.

The Commission should be able to examine the plans and activities of all agencies whose actions are necessary for achievement of the Just Transition, and the extent to which they are integrated and joined-up. It should be empowered to make recommendations and advocate on behalf of the objectives of Just Transition. In order to prevent offshoring emissions production overseas, consider how to make the just transition to achieving the climate change targets without increasing consumption emissions.

The principles of Just Transition should be enshrined in the Climate Change Bill which should also establish the remit of the Just Transition Commission. The time period of the work of the Commission should derive from the function of monitoring progress towards and achievement of emissions reductions targets under the Climate Change Bill.

**Reporting**

The Commission should report to Scottish Ministers. In the current distribution of Ministerial portfolios we advocate that principle responsibility should lie jointly with the Cabinet Secretary for Economy, Jobs and Fair Work and the Cabinet Secretary for Climate Change, Environment and Land Reform.

Its reports should also be laid before Parliament and it should be able to give evidence to Parliamentary Committees. The Commission will produce both annual and one-off reports.

**Functions/activities**

The Commission should be a fully independent body which can:-

- Advise Ministers on the transition to a prosperous low-carbon economy
- Investigate measures needed to achieve a Just Transition and actions taken in Scotland to implement them
- Report to Scottish Government, Scottish Parliament and to the Scottish public
- Recommend and advocate
- Monitor progress towards the achievement of a Just Transition towards emissions reductions targets under the Climate Change Bill / Act, including as appropriate in relation to consumption emissions
- Engage with workers, unions and enterprises affected

The Commission should carry out its duties in such ways that it can assist the Scottish Government overcome barriers to Just Transition, engaging the active participation of workers, employers and civic society.

The role of the Commission is expected to evolve over time. Evidence-gathering, research, public hearings and assessment of the challenges and opportunities can
be expected to feature strongly in its initial work programme, with an ongoing monitoring and evaluation role in the longer term as Scotland strives to meet emissions targets under the Climate Change Bill / Act.

**Composition and membership**

The Commission should include trade union, community and environmental members, as well as representatives of business and local government. It should be chaired by someone who has the confidence of the trade union and environmental movements. Commissioners should be people who are committed to just transition as well as being able to speak from and report back to their sectors.

**Secretariat and Resources**

It is essential that the independent commission has the support of an independent secretariat which can co-ordinate its meetings and support its activities. The capacity to commission any research, organize events or facilitate consensus-building will depend on it having a budget of sufficient scale.

**About the Just Transition Partnership**

The Just Transition Partnership was formed by Friends of the Earth Scotland and the STUC in October 2016. It also includes Unite Scotland, UNISON Scotland, UCU Scotland, CWU Scotland, PCS Scotland and WWF Scotland.
Written submission from Stop Climate Chaos Scotland

Submission to ECCLR Committee ahead of session with Climate Change Bill officials 19/06/18

Reaction to Climate Change Bill

Stop Climate Chaos Scotland responded to the publication of the Climate Change (Emissions Reduction Targets) (Scotland) Bill by describing it as ‘hugely disappointing’.

The coalition’s view is that the Climate Bill can only deliver Scotland’s fair contribution to the Paris Agreement if it:

- sets a target of net-zero emissions by 2050 at the latest,
- increases the 2030 target to 77%, and
- delivers the necessary related increase in policy delivery.

The Bill as introduced does not diverge significantly from the proposals consulted on in summer 2017. Apart from adjusting the 2050 target from 80% to 90%, which was signaled in the consultation paper, most of what the Bill does is make technical changes to the underpinning framework. Whilst our initial analysis is that these technical changes do take us forward, they do not make for a Paris-compliant Bill that is likely to contribute to global climate leadership.

Purpose of climate change targets

In our view, the Bill appears to make a significant departure from the Climate Change (Scotland) Act 2009 on the purpose of climate change targets. Rather than setting targets in response to scientific evidence, moral and long-term economic need, and seeing them as a clear market signaling tool to drive innovation and behavior change; this new Bill sets climate targets based merely on a future we can predict, with known feasible pathways, and today’s technology.

2050 is still 32 years away. Could we have predicted 32 years ago, in 1986, that we’d be driving electric vehicles or carrying phones in our pockets that connect us with the world via the (yet to be invented) world wide web?

In 2009, the long-term targets in the Climate Change Act were set on what international agreements and climate change science were indicating was a significant contribution from Scotland to tackling global climate change. Debates focussed on aspects of climate justice, and Scotland’s responsibilities as a more industrialised economy that had benefited significantly from the fossil fuel age. The 42% reduction target for 2020 and the 80% target for 2050 were both passed without clear roadmaps for their achievability.

Yet now Scotland has already achieved a 45% emission reduction against the 1990 baseline using adjusted figures, and a 49% reduction against the baseline using ‘gross’ or ‘total’ emissions, which is the new measure under the proposed Bill.

This was fully acknowledged by the Scottish Government, and their consultation document in 2008 said that the 2050 target needs to be “more ambitious than what current technologies can deliver in order to help provide an incentive to develop new technologies”.

In contrast, the new Bill places a heavy emphasis on feasibility. The main focus of the advice commissioned from the UK Committee on Climate Change (UKCCC) is on known feasibility, based on today’s technology and modest assumptions about technological development and replacement rates.

Similarly, key parts of the new Bill place increased emphasis on ideas of feasibility and achievability over other considerations – for example Section 6, 2C(3) gives priority to ‘whether the net-zero emissions target is achievable’ over other target-setting criteria. This is particularly worrying as feasibility is a subjective concept, depending on a host of socio-political assumptions alongside technical and economic assumptions, which may change rapidly over time. As the CCC themselves highlighted in their December letter to the Cabinet Secretary, “At the time of the [original] advice [on the Bill], this reduction [90% by 2050] was at the limit of known options to reduce Scottish emissions. Our assessment of feasible emissions reductions can change when scientific methods change or when the evidence base improves”.

Moreover, we have concerns about inconsistencies in the Bill, where primacy is given to feasibility for long-term targets, but does not apply the same logic to other interim targets, where feasibility is just one criterion weighed against many.

**Additional evidence**

Whilst we have not yet fully completed our in-depth analysis of all documents published alongside the Bill, we are concerned that the Scottish Government appears not to have commissioned significant additional evidence beyond the UKCCC advice.

For example, we have not yet found that additional evidence has been sought on:

- what Scotland’s fair and safe budget for 1.5°C might be, under different assumptions about the global sharing of effort;
- what Scotland’s climate targets might need to look like if we are not to rely on ‘overshoot’ scenarios.

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5 The CCC advice assumes an overshoot scenario where global average temperature rises by more than 1.5°C, then negative emissions help to stabilise temperatures at 1.5°C at a later date. There is a growing body of evidence that most natural systems do not have the resilience to survive these changes, and so these overshoot scenarios may be as damaging for nature, and society’s reliance on nature, as scenarios with higher average temperature change.
how reasonable the CCC assumptions are on technological feasibility, and the extent to which other countries are scaling up policy development and sectoral roadmaps in response to their net zero commitments; or

advice about what role Scotland could play in additional technological development.

It appears from the Bill documentation that the Scottish Government has done some modelling of what net-zero might mean - in effect they appeared to have defined a pathway to deliver net zero by 2050 so that they can say they do not like it. However, if this analysis and the assumptions behind it are publicly available, we have not yet found them. This is unhelpful when the Scottish Government is challenging SCCS, other stakeholders, and members of Parliament to come forward with answers as to how more ambitious targets might be delivered. It is also unclear whether the Scottish Government has done any modelling to determine the earliest ‘achievable’ date for net-zero (to use the Government’s own terms).

**UKCCC advice**

The CCC advice shows that a fair contribution to a global effort to limit the global average temperature rise to 1.5°C (assuming equal per capita emissions) would be an 89-97% reduction from 1990 levels by 2045 to 2050. However, the CCC then opt for the lower end of this range based on feasibility and assumptions around technology replacement rates.

Stop Climate Chaos Scotland has a number of concerns about the CCC approach to calculating Scotland’s contribution to the Paris Agreement:

- The CCC analysis is based on a simple division of international effort (i.e. global equal per capita emissions), which does not make sufficient allowance for differentiation for poorer countries that have contributed less to climate change and have less capability to change their emissions trajectory.
- It is not clear what risk of breaching 2°C is built into the CCC advice. In some places the advice notes a 50% likelihood of keeping below 2°C, elsewhere it notes a 66% likelihood.
- The CCC also assumes a ‘return to 1.5 °C’ scenario, which allows global average temperatures to overshoot the 1.5 °C mark to a greater average temperature rise and then return to 1.5 °C later. There is growing scientific evidence about the damage that overshoot is likely to cause to natural systems and biodiversity, and our social and economic reliance on these systems.

Stop Climate Chaos Scotland has written to, and met with, the CCC regarding these concerns and is awaiting a formal written response. We are not clear whether the Scottish Government either understands or shares these concerns about the CCC advice, or whether they have requested any additional evidence on what implications different assumptions might carry.

The CCC advice was inevitably provided ahead of the IPCC Special Report on 1.5°C, due in October, which aims to give greater clarity on what the Paris commitments mean globally and to explore a number of scenarios. The CCC may update its findings on the basis of the IPCC report when it provides advice to the UK
Government on Paris compatibility and a net-zero target for the UK. It would be helpful to understand how the Scottish Government will respond to the IPCC findings and any updated CCC evidence when these become available.

Consultation on Bill
Over 19,000 responses calling for stronger targets than were proposed, and for a net-zero target by 2050 at the latest, were submitted to the Scottish Government’s consultation in summer 2017. SCCS analysis of the total consultation responses made publicly available suggests that 99% of consultation responses were in favour of a net-zero target by 2050 at the latest. Against that backdrop, we are of course disappointed that there has been no movement from the Government between the proposals that they consulted on, and the Bill as introduced. In the Policy Memorandum the Government cites the inclusion of future net-zero date setting powers as a response to this swell of opinion, but this was included in the public consultation proposals.

Some members of SCCS were invited to join the Scottish Government’s technical working group that met several times in winter 2017/18. However, as the Policy Memorandum notes, the subject matter of this working group was limited to matters of detail in relation to the operation of the Scottish climate change framework, and that meant that the level of targets was not discussed in this group. In our view, there were no public consultation or discussion events held about the level of the targets arranged by Government in response to the swell of public support for more ambitious targets in the consultation, which is the core purpose of the Bill. This means that there has not yet been the opportunity for stakeholders to test the CCC advice on long-term targets, or the Government’s interpretation of it, until the Bill was recently published.

We feel this therefore places an important responsibility on the Committee’s Stage 1 process to discuss more widely with civic Scotland the scientific and moral argument for ambitious targets, the CCC advice, the levels of targets that the Bill should set, and the Scottish Government’s reservations about higher targets.

Issues of detail and technical drafting
SCCS has not yet fully completed our in-depth analysis of the Bill as introduced. However, there are already some aspects of the Bill which are unclear:

- **Section 1: Net-Zero** – This section on net-zero appears to replicate many of the functions of other ministerial powers created by the Bill to amend targets in future. We’d like to understand further how this section differs from other sections, how Ministers using the powers in this section would interact with other parts of the Bill, and the rationale about creating these separate Ministerial powers.
- **Section 5: Target-Setting Criteria** – It is welcome that this section preserves the “objective of not exceeding the fair and safe Scottish emissions budget” which the consultation last year proposed removing.

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• The Bill contains a definition of the “fair and safe budget”, but we have already suggested an improved definition more in line with the UN climate conventions and agreements, and it is unclear whether the CCC will be required to recalculate this budget when they provide updated 5-yearly advice.

• Section 6: Duty to Seek Advice – This section gives additional precedence to seeking the CCC’s advice on whether net-zero is ‘achievable’, despite the target setting criteria including ‘technology relevant to climate change’. We’d like to understand better the rationale behind this decision and how the Scottish Government would propose to define ‘achievability’, which is a subjective concept.

• Section 13: Restriction on Use of Carbon Units – This section allows Ministers to gain the Parliament’s permission for using carbon credits. In publishing the Bill, the Government made a commitment to achieving emission targets without the use of credits. We’d like to understand better whether this commitment is based on this section of the Bill, or how they interact.

• Section 19: Climate Change Plan – this section maintains a requirement for the plan to include the contribution of four particular sectors (energy efficiency, energy generation, land use and transport), as well as creating a new requirement for Ministers to break down the Plan into chapters as they see fit. We’d like to understand how these requirements relate to each other, and why these four sectors have been particularly selected.

• Section 19: Climate Change Plan – this section makes a welcome new requirement for annual progress reports on the Plan. We’d like to understand more what shape these annual reports would take, how the Parliament might be able to use them, and whether Ministers would be required to report against any of the numerical targets in the Climate Change Plan – whether e.g. the sectoral ‘envelope’ for agriculture (a 9% reduction between now and 2032), the policy outcome targets (e.g. 100% of car sales are non-fossil fuel, with intervening numbers for between now and 2032), or the milestones for the introduction of new policies.
Introduction

1. As part of its work programme discussion on 1 May 2018 the Committee agreed to hold an evidence session with officials from the Scottish Government and Scottish Natural Heritage (SNH) to discuss progress in meeting the Biodiversity 2020 targets and the AICHI targets. The Committee received evidence on this from Scottish Environment LINK and RSPB Scotland (Annexe A).

Background

Biodiversity Targets

2. The United Nations Convention on Biological Diversity set targets to halt the decline in biodiversity by 2020, the Aichi Targets. Targets to 2020 were also set for the EU, and the European Biodiversity Strategy was published in 2011. These international targets call for a step change in efforts to halt the loss of biodiversity and restore essential services provided by a healthy natural environment.


4. In 2017 SNH produced two interim reports on progress of the Route Map to 2020 and 2020 Aichi Targets.

Previous Environment, Climate Change and Land Reform (ECCLR) Committee Consideration

5. As part of its work programme discussion on 1 May the Committee agreed to hold an evidence session with officials from the Scottish Government and SNH to discuss progress in meeting the biodiversity 2020 target and the AICHI targets.

6. At its meeting on 1 November 2016 the Committee heard from a range of stakeholders on biodiversity and Scotland’s progress to its 2020 targets. The Committee considered the findings of a number of publications: the SNH Report on the first full year reporting on the Route Map to 2020; Scotland’s Biodiversity


7. The Committee subsequently wrote to the Cabinet Secretary for Environment, Climate Change and Land Reform. The Committee notes the publication of the Scottish Government’s 3 yearly Scottish Biodiversity Progress Report in 2017. The Committee wrote to the Cabinet Secretary to ask whether the Scottish Government plans to hold a parliamentary debate on the report. In responding the Cabinet Secretary has indicated there are no plans to hold a parliamentary debate on the report.

Public Audit and post Legislative Scrutiny (PAPLS) Committee Consideration

8. Between 29 January 2018 and 23 March 2018, the Public Audit and Post-legislative Scrutiny Committee ran a call for evidence on biodiversity and biodiversity reporting duties placed on public bodies under the Nature Conservation (Scotland) Act 2004 and Wildlife and Natural Environment (Scotland) Act 2011. The call for evidence and written submissions can be viewed here.

9. On 7 June 2018 The Public Audit and Post-Legislative Scrutiny Committee took evidence from the Cabinet Secretary for Environment, Climate Change and Land Reform, and SNH. The Cabinet Secretary provided an update on the second round of duty reporting, stating that responses were still being compiled and that the current response rate stands at 41%. The Committee also heard that despite improved guidance since the 2015 round of reporting, there are still problems with awareness over the reporting duty.

Clerks
Environment, Climate Change and Land Reform Committee

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2 Report measuring progress against Scotland’s international obligations (the Aichi Targets) http://www.snh.gov.uk/docs/A2101704.pdf
Written submission from Scottish Environment LINK

Scotland’s progress towards domestic and international biodiversity 2020 targets

Scottish Environment LINK is the forum for Scotland’s voluntary environment community, with over 35 member bodies representing a broad spectrum of environmental interests with the common goal of contributing to a more environmentally sustainable society. This briefing sets out to highlight LINK member views on Scotland’s progress towards meeting biodiversity targets and halting biodiversity loss.

Progress towards international targets

We welcome the Scottish Government’s commitment to reporting on progress towards the 2020 Aichi targets and work undertaken to produce the recent SNH report. It is important to have a clear understanding of ambitions, actions underway and progress to date. However, we are disappointed over the lack of progress. It is critical to refocus efforts and pursue urgent actions to make progress ahead of the 2020 Aichi deadline.

As the SNH report notes, out of the 20 targets that Scotland is committed to meeting in less than two years, only 7 are on track. For 12 targets progress is insufficient and “unless we increase our efforts the target[s] will not be met by [the] deadline”, according to the report. The remaining critical target that tracks available financial resources, which are key to delivering many of the other targets, is falling, meaning that we are moving away from the target. The report highlights that “total funding figures for most of the Scottish organisations that have some biodiversity remit have also declined in the last 5 years”.

We are particularly concerned about the substantial deviation from biodiversity funding targets which comes alongside a number of other issues as detailed in the section below.

Looking at other indicators, the report states that:

- **A2 – Biodiversity values integrated**: whilst challenges remain, “biodiversity values have been integrated into the mainstream planning, policy and reporting frameworks”. The ongoing scrutiny of the Public Audit and Post-Legislative Scrutiny Committee of biodiversity reporting duties indicates that considerable action is needed to fully embed biodiversity not only in terms of reporting but also in terms of appropriate action.

- **A3 – Incentives reformed**: “there are incentives for activities which conflict with biodiversity leading to its deterioration and sometimes loss”. It is unclear how the Scottish Government aims to address these areas of concern; these issues are amplified in the context of the UK’s exit from the EU and potential for CAP reform.

- **A4 – Sustainable consumption and production**: “current indicators show we still have work to do to ensure the economy is operating within safe ecological
limits”. This has been an ongoing concern that LINK members have raised in a variety of fora. In this context, the Scottish Government’s resistance to include “sustainable development” as the overarching purpose of the National Performance Framework is particularly puzzling given Scotland’s commitment to meeting the UN Sustainable Development Goals. Similar concerns are raised in the context of sector specific strategies such as in the case of aquaculture.

- **C11 - Protected areas increased and improved:** LINK members agree that “more work is still required on management, representativeness, integration, and connectivity of sites”. Monitoring accurately and reflecting transparently on monitoring data is critical. Despite the protected nature sites national indicator increasing, there are significant issues with how the data is reported under the indicator: an increased proportion of ‘unfavourable’ features are re-categorised as ‘unfavourable recovering due to management’ and are therefore summarised as favourable under the national performance indicator, without evidence of actual recovery or delivery of management measures on the ground. It is important to note that SNH reports that “79.7% of Scotland’s natural features on protected nature sites are either in or recovering towards a favourable condition”; this reflects a 0.6 percentage point decrease since last year and differs to the “over 80%” figure used in the Aichi report.

With respect to the progress made against several targets, we are concerned that this seems to be focused on process rather than action directly linked to better environmental outcomes on species or habitat conservation and restoration (for example, indicators B5, B7, B10, C12, as well as indicators under funding). While the generation of indicators, data and other information is important, this must not be confused with improvements in biodiversity. We therefore welcomed the statements by Cabinet Secretary Roseanna Cunningham that there should be a focus on environmental outcomes and look forward to better understanding what actions are envisaged by Scottish Government and the relevant timeframe. At the moment, there is no indication about what are the additional actions that SNH and Scottish Government will take across all its departments to bridge the emerging gap between targets and the Scottish status quo.

It is also important to note that while the Aichi report makes some links with action outlined in the “Scottish Biodiversity: Route Map to 2020” most of the priority actions rely on partnership working and external funding. The focus on specific projects does not allows provide for long-term strategy and support for different targets and goals.

Biodiversity governance mechanisms will also need to be revisited and strengthened in particular to ensure adequate representation and participation by environmental charities.

**Biodiversity reporting duties**

We welcome the work of the Public Audit and Post-legislative Scrutiny (PAPLS) Committee on the operation and reporting of the biodiversity duty. LINK members have provided both written and oral evidence and are encouraged by the Committee’s ongoing interest. As indicated in our submissions, there are a number

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of actions, both legislative and non-legislative, that should be considered in order to support public bodies in delivering their biodiversity and reporting duties. The Government has provided Guidance which while helpful has not provided public bodies with enough clarity on how to meet their biodiversity duty, particularly with respect to the aspect of “mainstreaming”. We believe that making clearer the type of actions the duty would prescribe to meet Scotland’s biodiversity ambitions could be delivered through better implementation and very targeted legislative change.

We hope that the PAPLS Committee work on the biodiversity duty can be taken into account in ECCLR deliberations on Scotland’s progress towards biodiversity goals.

**Diminishing funds for tackling biodiversity loss and conservation**

As the Committee has noted in the past, there is a concern about the level of funding for biodiversity and the overall drop in funding over several years. This comes as other pressures on funding for biodiversity are becoming more prominent:

- Revision of SNH grant mechanisms:
  - Framework agreements: while only larger environmental charities were able to benefit from those agreements, they originally allowed for large-scale and more strategic support on a more long-term basis (initially over a period of 3 years, most recently reduced to yearly arrangements). These were focused on conservation and habitat and biodiversity restoration. These have been now discontinued and will be replaced by a series of challenge funds where biodiversity is relatively absent.
  - In addition, SNH grants are now increasingly focusing on the delivery of a number of further goals beyond conservation. Specifically, there are requirements for engaging with youth as well as disadvantaged communities. While these are laudable objectives, we cannot afford to take away from the core purpose of these funds which is conservation of our natural heritage. Moreover, very often SNH grants will require engagement in Scotland’s central belt, however, this limits possibilities for rolling out projects in more remote areas where vulnerable habitats and species reside.

- Uncertainty regarding the future of dedicated environment EU funding mechanisms such as LIFE creates further concern. Since its inception, LIFE has funded over 25 projects supporting among others Atlantic salmon, the freshwater pearl mussel, the red squirrel, Caledonian pinewoods, the porpoise as well as many others and bringing in well over £25m for conservation delivery – 21% of the UK total.

- Ongoing lack of funds for Scotland’s nature: according to a report put together by the Scottish Environmental Funders’ Network Scotland it is at a considerable disadvantage compared to the rest of the UK in terms of attracting funding for conservation projects. From 2012 to 2015, private foundation funding for environmental causes in England and Wales amounted to 20 times as much as that available in Scotland. This is equivalent to £768 per square kilometre in England and Wales versus £70 per square kilometre of Scotland.

Given this context, it is unsurprising that we are moving away from the Aichi target on financial resources for biodiversity.

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With growing pressures on dedicated budgets for conservation, it is important that we avoid a situation where dedicated funding for biodiversity is used to deliver a variety of diverse goals. Over the last few years, SNH has increasingly focused efforts on awareness raising and engagement with people as a way of recognising the multiple benefits of nature to our well-being. However, it is unclear to LiNK whether recognition of the wider benefits of our natural environment has elicited financial support from relevant portfolios. For example, given the contribution of our environment to our health and wellbeing, it would be possible to envisage dedicated funding from the social policy portfolio to support the delivery of those benefits.

Post-2020 biodiversity strategy

While progress needs to be made ahead of 2020, it is equally important to start a discussion about the need to refocus efforts post-2020 and develop a robust strategy that looks at biodiversity concerns within a wider policy context and addressed funding pressures. LiNK members believe that the introduction of a National Ecological Network (NEN)\(^5\) in line with Scottish Government commitments in Scotland’s Biodiversity - a Route Map to 2020 and the National Planning Framework, would be a helpful framework for such discussions.

While scientific evidence and academic literature overwhelmingly supports the introduction of an NEN to benefit not only our environment but also our wellbeing and economic prosperity, there has been little progress in its roll-out in Scotland. The NEN would help protect and restore Scotland’s nature, so that it continues to provide the life support systems we all depend on, particularly in terms of our health, wellbeing and economic prosperity. It could do this by providing an overriding, holistic policy approach that integrates the enhancement and protection of nature into policies, proposals and funding streams, so that they can deliver multiple public benefits more effectively.

We would welcome further work, including a potential inquiry, from the ECCLR Committee on post-2020 biodiversity ambitions. Launching such a piece of work would help promote this much needed debate.

June 2018

Written submission from RPSB Scotland

Scotland’s progress to meeting 2020 biodiversity targets

RSPB Scotland is Scotland’s largest conservation charity. Working to conserve biodiversity for Scotland’s varied habitats and species is at the heart of what we do. This briefing sets out RSPB Scotland’s view on progress towards meeting biodiversity targets and halting biodiversity loss.

Progress to 2020

Whilst we welcome Scottish Government’s commitment to report progress towards the 2020 Aichi targets, we are concerned over the lack of progress to date. As the recent Scottish Natural Heritage report notes, out of 20 targets Scotland is committed to meeting by 2020, only 7 are likely to be met. The report also highlights a worrying decline of biodiversity funding in those organisations that have a biodiversity remit in the past five years.

The report indicates that it is unlikely that Scotland will fully meet the 2020 Aichi targets - indeed the trend towards reduction in biodiversity action and funding suggests that meeting targets will now fall far beyond the initial 2020 target. There is therefore a need to reassess how public policy and funding in Scotland can meet targets sooner.

Notably, we are unlikely to meet Aichi Target 5 on habitat loss, Target 9 on control of invasive species, or Target 12 on preventing extinction of species, unless we significantly increase our efforts ahead of 2020. There is therefore an urgent need to streamline efforts to tackle biodiversity loss and ensure that policy and funding frameworks incentivise delivery of practical action on-the-ground, which will directly further species and habitat conservation. Current indications point, however, to a strong shift in government and NDPB focus in the opposite direction, away from biodiversity. This is partly due to an assumption that work on Natural Capital and Ecosystem Services has wholly and effectively integrated biodiversity values, or indeed that it is a proxy for, or alternative to, biodiversity conservation. We contend that this assumption is misdirected.

Biodiversity Reporting Duties- A Key Mechanism

The requirement on public bodies to further biodiversity conservation continues to be a key tool to help Scotland meet the 2020 Aichi targets, and permits their effectiveness to be scrutinised. There are a number of areas in which biodiversity reporting duties could be improved, such as around stronger statutory requirements to improve compliance, clearer guidance on actions and evaluation and monitoring to improve outcomes, and provision of additional resources to support delivery of the duties. Addressing these issues would strengthen potential outcomes for habitats and species to ensure compliance with international obligations and streamlined integration of biodiversity into public-decision making across all sectors.
**Biosecurity**

Invasive species are a major global driver of biodiversity loss, and islands are especially vulnerable ecosystems. Putting in place proportionate but effective biosecurity measures for Scottish islands, will not only reduce future harm to the natural environment, but will also safeguard economic and agricultural interests.

Scotland can become a global leader on biosecurity. Together with the success of past projects, and the challenges of currently unfolding issues such as Orkney stoats, Scotland is well placed to develop timely and ground-breaking public policy in this regard.

Ambition and recent successes in dealing with invasive species on islands will be pointless without long-term effective biosecurity arrangements and a programme of island restoration. This is an essential climate change mitigation action for protecting key areas of biodiversity.

We have been encouraged by recent progress of the Islands (Scotland) Bill with biosecurity accepted as a key outcome for any future National Islands Plan, and we therefore look forward to the plan’s development and publication. We would welcome the Committee’s involvement and oversight over this new important mechanism for conservation.

**Target C11 – Protected Areas**

Whilst we are worried about the various 2020 targets not being met, we are also concerned as to how some of the targets have been reported on. For instance – the protected areas target (Target C11) has been reported as ‘exceeded’, however since this report was published the 2018 protected area statistics showed that the proportion of features in favourable condition fell below the 80% target to 79.7%. Furthermore, this percentage includes features for which management measures have been put into place that are expected to bring the feature to favourable condition in the future. The proportion of features assessed as being currently in favourable condition is actually 66.2% - this has fallen 1.2% since 2005. Finally, the other ‘tests’ of Target C11 – that protected areas are effectively and equitably managed, ecological representative and well connected – have not yet been met. We therefore question how this target can be considered to have been exceeded.

Nevertheless, we would hope that the positive report showing a commitment to meeting this target by 2020 indicates that Scottish Government will respect the national and international designations of these protected areas in future policy decisions to ensure that there is no net-loss incurred to the biodiversity of these vital sites. Any decision that does not take account of the value of protected areas for their species and genetic diversity, would likely hinder progress and result in a failure to meet this Aichi target, while contributing negatively to other targets such as B5 and C12.
Post-2020 action – National Ecological Network

The introduction of a National Ecological Network (NEN) for Scotland was included as a commitment in Scotland’s Third National Planning Framework (2014) as a way to enhance and complete the existing suite of protected sites, improve connectivity and the biodiversity value of land in between these sites. Scientific and academic evidence indicates that the NEN would help Scotland to progress towards biodiversity targets while also having positive socioeconomic impacts. Unfortunately, there has been little progress to date on rolling out Scotland’s NEN. This is so far a missed opportunity to better streamline the protection of our natural environment and biodiversity into public policy, to deliver outcomes for the public good.

We would welcome an inquiry from the Committee on biodiversity targets that would include assessing the potential usefulness of the National Ecological Network as a means for delivering biodiversity success in the future. There is a clear need for action and debate around this issue or we risk losing some of the elements that make Scotland’s landscape and natural environment so unique and valuable.

12 June 2018
Environment, Climate Change and Land Reform Committee

19th Meeting, 2018 (Session 5)

Tuesday 5 June 2018

SSI cover note for Environmental Protection (Microbeads) (Scotland) Regulations 2018 (SSI 2018/162)

Title of Instrument: Environmental Protection (Microbeads) (Scotland) Regulations 2018 (SSI 2018/162)

Type of Instrument: Negative

Laid Date: 21 May 2018

Circulated to Members: 24 May 2018

Meeting Date: 5 June 2018

Minister to attend meeting: No

Motion for annulment lodged: No

Drawn to the Parliament’s attention by the Delegated Powers and Law Reform Committee? No

Reporting deadline: 25 June 2018

Recommendation

1. The Committee is invited to consider any issues which it wishes to raise on this instrument.

Background

2. The Scottish Government has announced that, along with counterparts around the UK, it will work to legislate to ban the sale and manufacture of rinse-off personal care products containing plastic microbeads. It has consulted on subordinate legislation and aims to ensure this comes into force on 9 July 2018, to coincide with the rest of the UK.

3. A copy of the Scottish Government’s Explanatory and Policy Notes, as well as the Business and Regulatory Impact Assessment and the UK Impact Assessment, are included in Annexe A.

Purpose

4. These Regulations prohibit the use of microbeads as an ingredient in the manufacture of rinse-off personal care products and the sale of any such products containing microbeads and come into force on 19th June 2018.
Delegated Powers and Law Reform Committee

5. At its meeting on 5 June 2018, the Committee considered the following instrument and determined that it did not need to draw the attention of the Parliament to the instrument on any grounds within its remit.

Procedure for Negative Instruments

6. Negative instruments are instruments that are “subject to annulment” by resolution of the Parliament for a period of 40 days after they are laid. All negative instruments are considered by the Delegated Powers and Law Reform Committee (on various technical grounds) and by the relevant lead committee (on policy grounds). Under Rule 10.4, any member (whether or not a member of the lead committee) may, within the 40-day period, lodge a motion for consideration by the lead committee recommending annulment of the instrument. If the motion is agreed to, the Parliamentary Bureau must then lodge a motion to annul the instrument for consideration by the Parliament.

7. If that is also agreed to, Scottish Ministers must revoke the instrument. Each negative instrument appears on a committee agenda at the first opportunity after the Delegated Powers and Law Reform Committee has reported on it. This means that, if questions are asked or concerns raised, consideration of the instrument can usually be continued to a later meeting to allow correspondence to be entered into or a Minister or officials invited to give evidence. In other cases, the Committee may be content simply to note the instrument and agree to make no recommendation on it.

Clerks
Environment, Climate Change and Land Reform Committee

Annexe A

Scottish Government Explanatory Note.................................................................................................................2
Scottish Government Policy Note ..........................................................................................................................3
Business and Regulatory Impact Assessment......................................................................................................6
UK Impact Assessment..............................................................................................................................................11

Scottish Government Explanatory Note

As per purpose above and including:

These Regulations prohibit the use of microbeads as an ingredient in the manufacture of rinse-off personal care products and the sale of any such products containing microbeads and come into force on 19th June 2018.

Regulation 3 provides that it is an offence for a person to manufacture or for a person to supply, offer to supply, or have in possession for supply any rinse off personal care product containing microbeads. A person found guilty of such an offence will be liable on summary conviction to a fine not exceeding £5,000 or on conviction on indictment to a term of imprisonment not exceeding 2 years or a fine not exceeding £5,000 or both.

Regulation 4 makes provision for offences by bodies corporate, Scottish partnerships or unincorporated associations.
Regulation 5 provides that the local authority may authorise any person to exercise any of the powers specified in regulation 6.

Regulation 6 gives enforcement officers powers of entry to carry out the necessary investigations in order to determine whether an offence under regulation 3 has been committed.

**Scottish Government Policy Note**

**Introduction**

The above instrument was made in exercise of the powers conferred by section 140(1)(b) and (c), (3)(c) and (d), and (9) of the Environmental Protection Act 1990 (“the Act”). The instrument is subject to negative procedure.

**Policy Objectives**

The instrument makes it an offence to manufacture any rinse-off personal care product which uses microbeads as an ingredient. It also makes it an offence to supply, offer to supply or have in possession for supply any rinse-off personal care product containing microbeads as an ingredient. The aim of the instrument is to protect our marine environment from plastic pollution. It is being introduced in conjunction with the other administrations of the United Kingdom to allow for a UK-wide ban.

**Consultation**

A public consultation entitled “Proposals to ban the use of plastic microbeads in cosmetics and personal care products in the UK and call for evidence on other sources of microplastics entering the marine environment” took place across the whole of the UK from 20th December 2016 to 28th February 2017. The consultation was made publicly available at [https://consult.defra.gov.uk/marine/microbead-ban-proposals/](https://consult.defra.gov.uk/marine/microbead-ban-proposals/) and publicised in the national media. The consultation asked for comments on proposals for the implementation of a UK-wide ban on the manufacture and sale of cosmetics and personal care products containing microbeads which may cause harm to the marine environment. The consultation also sought to gather evidence on the extent of the environmental impacts of further sources of potential marine plastic pollution, to inform future UK actions to protect the natural environment.

A total of 431 responses to the consultation were received, the majority of which supported the ban. Most responses, (289), were from individuals, and the rest from a wide range of organisations including cosmetics companies and associations, environmental charities and campaign groups, academic institutions, local authorities and fishing organisations.

As a result of that consultation the following issues were raised, resulting in the actions stated:

<table>
<thead>
<tr>
<th>Issue Raised</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scope of ban</td>
<td>• Overall the scope was supported and has remained.</td>
</tr>
<tr>
<td>• Restriction of legislation to match that of the US which limits banned</td>
<td>• There is insufficient evidence as to the potential harm caused by</td>
</tr>
<tr>
<td>products to those used for cleaning or exfoliating.</td>
<td>different types of plastics when they enter the marine environment. A</td>
</tr>
<tr>
<td>• Focus of legislation to target only plastics known to be harmful</td>
<td>ban of all plastic microbeads therefore demonstrates a precautionary</td>
</tr>
<tr>
<td>• Expanding scope to include ‘stay-on’ products including some</td>
<td>action was therefore supported using all available evidence.</td>
</tr>
<tr>
<td>Issue Raised</td>
<td>Result</td>
</tr>
<tr>
<td>-----------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>make-ups and sunscreen, and the addition of domestic cleaning products.</td>
<td>approach.</td>
</tr>
<tr>
<td>• Maintaining the proposed scope to not include ‘stay-on’ products as reformulation will be an extremely lengthy and expensive process for the industry</td>
<td></td>
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<tr>
<td>Timescale</td>
<td></td>
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<tr>
<td>• There were calls to introduce the bans sooner for environmental protection purposes and some to bring it in later to allow time to extend the bans to more products.</td>
<td>• As the scope was not to change, the agreed timescale of introducing bans in 2018 remained, allowing time for all the Devolved Administrations to draft their own regulations.</td>
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<tr>
<td>Alternative wording</td>
<td></td>
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<tr>
<td>• Clearer definitions of ‘plastic’ and ‘microbead’ were requested, and some provided alternative definitions.</td>
<td>• Definitions were reconsidered and amendments agreed with industry trade associations.</td>
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<tr>
<td>Exemptions</td>
<td></td>
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<tr>
<td>• There was a call for exemptions to be made for medical products and for biodegradable plastic products.</td>
<td>• No examples were given or found of effected medical products. However should a product ever be developed then an exemption will be considered.</td>
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<tr>
<td>• There are no agreed standards for biodegradable plastics and as such an addition of such an exemption would be inappropriate given that the intention of the legislation is for environmental protection.</td>
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<tr>
<td>Product labelling and/or campaign to ensure relevant products are wiped off with residue going into the bin rather than down the plug hole.</td>
<td>• This is something which could be considered for wider use products such as cosmetics, but many of the targeted products are designed for shower use.</td>
</tr>
</tbody>
</table>

<p>| Issue Raised                                                                 | Result                                                                                                                                 |
| Compliance and Enforcement                                                  |                                                                                                                                          |
| • Methods of compliance testing and means of monitoring were suggested, with many stating that the need for monitoring will be low given the industry’s move away from plastic microbeads in products already. | • It has been agreed across the administrations that the level of non-compliance is expected to be low. |
| • Industry self-regulation was suggested, as was Local Authority enforcement by Trading Standard or Environmental Health | • However, it was felt that enforcement was still needed and the Act allows for Local Authorities to do so. |
| • Scottish Government engaged with Trading Standards Chief Officers of Scotland when developing this legislation. |                                                                                       |</p>
<table>
<thead>
<tr>
<th>Issue Raised</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cost to industry</strong></td>
<td>- Industry respondents suggested that there may be an additional cost to developing alternative ingredients for their products.</td>
</tr>
<tr>
<td><strong>Consistency with other countries’ bans</strong></td>
<td>- Our approach has targeted products where there is clear, robust evidence that microbeads reach the marine environment.</td>
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<tr>
<td><strong>Impact on Imports</strong></td>
<td>- Few respondents provided suggestions of potential impacts on imports</td>
</tr>
<tr>
<td><strong>Costs/risks of alternatives</strong></td>
<td>- We agree that it is important for manufacturers to ensure that any alternatives to plastic microbeads should be sustainable.</td>
</tr>
<tr>
<td>- suggestions included shells, seeds and kernels, sugar, salt, fruit and seaweed, starches and minerals.</td>
<td>- Several respondents commented on the importance of ensuring that any environmental impacts of potential alternatives were carefully considered.</td>
</tr>
</tbody>
</table>


On 22nd December 2017, a public notice of the draft Environmental Protection (Microbeads) (Scotland) Regulations 2018 was placed in the Edinburgh and London Gazette.
provided a link to the Regulations and invited representations to be received by 11 January 2018. No representations were made by email or post.

Impact Assessments

A Business and Regulatory Impact Assessment has been completed on the effects of the instrument in Scotland. In addition there is an Impact Assessment of the introduction of the bans across the UK.

No equality issues were raised as part of the consultation process and it is considered that a full Equality Impact Assessment is not required as the products are used indiscriminately across the population.

Financial Effects

There is no financial impact of this policy on the Scottish Government, minimal impact on local government enforcement departments and minimal impact on Scottish industry as there are no known businesses manufacturing affected products in Scotland.

Scottish Government
Marine Scotland Directorate

16 May 2018

Business and Regulatory Impact Assessment

Purpose and intended effect

Background
The Scottish Government is committed to a clean, healthy, safe, productive and biologically diverse marine and coastal environment that meets the long-term needs of people and nature. In order to meet this commitment our seas must be managed in a sustainable manner by balancing the competing demands on marine resources with appropriate conservation measures. Our seas must be protected to ensure our future marine ecosystem is capable of providing the economic and social benefits it yields today. As part of the sustainable management of our seas, the Scottish Government published its Marine Litter Strategy in 2014 to develop current and future measures to ensure that the amount of litter entering the marine and coastal environment is minimised to bring ecological, economic and social benefits. The Strategy supports OSPAR’s action plan and also helps Scotland to meet our obligations under the Marine Strategy Framework Directive to achieve good environmental status in our marine waters by 2020 and the requirement that “the properties and quantities of marine litter do not cause harm to the coastal and marine environments.”

Proposal
The Environmental Protection (Microbeads) (Scotland) Regulations 2018 make it an offence to manufacture any rinse-off personal care product using microbead as an ingredient. The Regulations also make it an offence to supply, offer to supply or have in possession for supply any rinse-off personal care product containing plastic microbeads in Scotland. A person who commits an offence under the Regulations is liable on summary conviction of a fine not exceeding £5,000, or on conviction on indictment, to a term of imprisonment not exceeding 2 years or a fine not exceeding £5,000 or both.
These Regulations, in conjunction with those introduced by the UK Government, Welsh and Northern Irish Administrations ensure that there will be a UK-wide ban on these products.
Objectives
The intervention is designed to protect the environment and food supply from further pollution, foster consumer confidence that the products they buy will not harm the environment, and support the cosmetics industry by setting a level playing field. It will also set an example for other countries and encourage wider adoption of legislation.

Rationale for Government intervention
Plastic microbeads in cosmetic products can pass through sewage treatment works and reach the marine environment. Once there it is impossible to recover them. They do not biodegrade and instead accumulate in the marine environment. There is evidence they cause harm when ingested by marine animals. There are suitable non-plastic alternatives to microbeads in cosmetics so they are an avoidable source of pollution. Some businesses have already taken voluntary actions but others still continue to use microbeads. Therefore there is a market failure rationale for intervention based on externalities given that the environmental costs caused by microbeads to the environment are not taken fully into account by these businesses. A public consultation indicated widespread support for the approach.

Consultation
The results of the UK-wide public consultation on the proposal to ban the manufacture and sale of rinse-off personal care products containing plastic microbeads demonstrate overwhelming support for these Regulations.
In addition, a public notice of the draft Environmental Protection (Microbeads) (Scotland) Regulations 2018 was placed in the Edinburgh and London Gazette on 22nd December 2017. The notice provided a link to the Regulations and invited representations to be received by 11 January 2018. No representations were made by email or post.

Policy Options
Option 1 – Do Nothing
This is the baseline option without Regulations; Continue to support the current voluntary action from certain cosmetics manufacturers to remove microbeads from their products. Affected products will still be made elsewhere and bought and used in Scotland, with thousands of microbeads per shower flowing through drains, passing through sewerage systems and entering our waters, threatening the health of the marine environment. Accordingly, the impact of those measures introduced by the UK Government, Welsh and Northern Irish administrations will be limited.

Option 2 - Introduce a prohibition through secondary legislation
Under this option, the Scottish Government would introduce legislation to protect the marine environment. The Environmental Protection (Microbeads) (Scotland) Regulations 2018 make it an offence to manufacture, supply, offer to supply and have in possession with intent to supply rinse-off personal care products containing microbeads through the introduction of secondary legislation. The regulations would ensure a UK-wide approach to the prohibition of rinse-off personal care products containing microbeads.

Sectors and groups affected
The Scottish manufacturing industry will not be affected as no businesses in Scotland make the products covered by these Regulations. Based on industry feedback, those affected in other parts of the UK do not expect additional costs as a result of product reformulation or relabeling. Furthermore, the net impact on suppliers (importers) of microbeads in the UK is assumed to be zero. Customers are therefore not expected to be affected with a change in price. This is detailed in the attached UK-wide impact assessment.
There is one sector which will be affected; public bodies responsible for enforcement, i.e. local authorities’ trading standards bodies.
Benefits

- **Option One**
  There will be no additional burden on the enforcement bodies in Scotland. However our waters will not be protected from further pollution from plastics.

- **Option Two**
  Scottish legislation demonstrates the intention of the Government to protect the marine environment, work with other administrations and show international leadership on the issue of marine plastics.

Costs

- **Option One**
  There are no measurable financial costs, however further marine plastic pollution threatens the marine environment on which we rely for many ecosystem services such as fish for food, waters for recreation, gas and climate regulation etc.

- **Option Two**
  There is an estimated enforcement cost on public bodies of £660 (i.e. local authorities’ trading standards bodies). These costs will not fall on businesses. Trading standards are expected to enforce the ban, since they currently enforce Regulation (EC) No 1223/2009 on cosmetic products ingredients. There are 1379 substances that are currently banned from cosmetics, and a further 296 substances that are restricted\(^1\). Frequent changes to the list of banned cosmetics ingredients mean that familiarisation with an additional prohibited substance can be considered part of business as usual, with no specific enforcement plan required. Zero familiarisation cost for enforcement is considered the low estimate.

However, domestic implementation of the microbead ban and the relatively high public profile of microbeads may mean that explicit advice provision and/or enforcement is required. An indicative estimate of the additional familiarisation burden that this would place on 32 local authority trading standards bodies is 2 days of staff time at £100/day. Therefore the best estimate for familiarisation cost of enforcement is £6,400. A high estimate for the familiarisation cost is based on 5 days of staff time at £100/day per local trading standards body, which gives a total estimate of £16,000.

In addition to the familiarisation costs, **annual enforcement** costs are expected to be between £0-6,600 per year. The lower estimate is based on enforcement of the microbead ban as part of business as usual alongside other restrictions on cosmetics products. It is assumed that trading standards would be able to test for microbead content alongside checking for other banned substances at no additional cost.

An intermediate best estimate is based on the amount that trading standards are assumed to spend on enforcing restrictions on cosmetics ingredients per banned substance (since one banned substance will be added).

\(^1\)http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1473246448678&uri=CELEX:02009R1223-20160812
Total trading standards expenditure in England in 2015/2016 was £115m\(^2\). Assuming this is equally divided between 6\(^3\) activity areas (consumer safety, counterfeit goods, product labelling, weights and measures, under-age sales, and animal welfare), each activity area would have expenditure of £19m. If this product safety budget is equally divided between 20\(^4\) categories (for example cosmetics, toys, and fireworks) then the budget for enforcing restrictions on cosmetics products in England is estimated at around £0.96m. If we scale this figure up using national GVA figures\(^5\) we can estimate a total UK cosmetics enforcement budget of £1.1m.

There are currently 1675 restrictions on the contents of cosmetics ingredients. Dividing the total UK figure by the number of current restrictions results in an estimated additional burden of enforcing the microbead ban of £660 per year. Due to the relatively high public profile of microbeads, trading standards may introduce some specific enforcement activity for the microbead ban, although this is considered unlikely as compliance is anticipated to be high. Specific enforcement of this kind is indicatively assumed to be 10 times more burdensome than business as usual enforcement, with a cost of £6,600 in the first three years, before falling to £660 for the rest of the appraisal period.

<table>
<thead>
<tr>
<th>Table 1 - Summary of enforcement costs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Familiarisation cost (year 1) – One-off costs</strong></td>
</tr>
<tr>
<td>----------------------------------------</td>
</tr>
<tr>
<td>£0</td>
</tr>
<tr>
<td><strong>Annual cost (years 1-3)</strong></td>
</tr>
<tr>
<td><strong>Annual cost (years 4-10)</strong></td>
</tr>
</tbody>
</table>

**Scottish Firms Impact Test**
There are no businesses in Scotland manufacturing rinse-off personal care products containing microbead products, and those selling them will not be financially affected.

**Competition Assessment**
Any trade effects have been tested with notifications under both the WTO Technical Barriers to Trade Agreement and the EU Technical Standards Directive. No relevant comments of criticisms of the draft Regulations have been received. The European Commission has responded that European legislation on microbeads is expected in the future. In June 2017 the OSPAR Commission called on the EU to introduce appropriate measures to achieve a 100% phasing out of microplastics in personal care and cosmetic products in line with Action 47 of the OSPAR Regional Action Plan on Marine Litter.

Moreover, since most of the UK cosmetic industry (some operating at an international scale) is already taking voluntary action, the assumption is that only a minor percentage of trade will be affected (preliminary analysis suggests around 1% of cosmetics imports – see section 5). No


\(^3\)http://www.tradingstandards.uk/jobs/jandc-careerints.cfm


\(^5\)http://www.ons.gov.uk/economy/grossvalueaddedgva/bulletins/regionalgrossvalueaddedincomeapproach/december2015
additional evidence was provided during the consultation. We continue to engage with European partners in regard to a EU-wide ban, particularly through OSPAR.

**Competition filter questions**

- Will the proposal directly limit the number or range of suppliers?
  No, as alternatives to plastic microbeads are readily available.

- Will the proposal indirectly limit the number or range of suppliers?
  No, as alternatives to plastic microbeads are readily available.

- Will the proposal limit the ability of suppliers to compete?
  Limited – in the longer term there will be legislative action against microbeads internationally. However, there is already a voluntary move towards alternatives. Scotland also has no affected manufacturers.

- Will the proposal reduce suppliers’ incentives to compete vigorously?
  No, the introduction of these Regulations is not expected to reduce suppliers’ incentives to compete vigorously.

**Test run of business forms**

It is not envisaged that the introduction of these Regulations will result in the creation of new forms for businesses to deal with, or result in amendments of existing forms.

**Legal Aid Impact Test**

The expected level of non-compliance with these Regulations is very low, as a result we would not consider there to be any legal aid impacts.

**Enforcement, Sanctions and monitoring**

The regulations allow for enforcement by Local Authorities, with a presumption that they will use their Trading Standards departments. These bodies will be responsible for monitoring, investigating and bringing suspected cases to court. Courts will set penalties on summary conviction of a fine not exceeding £5,000, or on conviction on indictment, to a term of imprisonment not exceeding 2 years or a fine not exceeding £5,000 or both.

**Implementation and Delivery Plan**

Implementation of the bans is expected to be 19 June 2018, to meet the dates of the UK Government legislation.

**Post implementation review**

This policy will be reviewed when the EC introduce microbead legislation, or in June 2021, whichever is soonest.

**Summary**

It is proposed to make it an offence to manufacture, supply, offer to supply or have in possession with intent to supply any rinse-off personal care products containing microbeads as an ingredient through the introduction of the Environmental Protection (Microbeads) (Scotland) Regulations 2018. The Regulations mirror the prohibition introduced in England, Wales and
Northern Ireland ensuring a UK wide approach thereby ensuring our seas are protected from further pollution from plastic microbeads.

Declaration and publication
I have read the Business and Regulatory Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options. I am satisfied that business impact will be assessed with the support of businesses in Scotland
Signed:

Date:

Roseanna Cunningham, Cabinet Secretary for Environment, Climate Change and Land Reform

UK Impact Assessment

<table>
<thead>
<tr>
<th>Title:</th>
<th>Implementation of the Environmental Protection (Microbeads) (England) Regulations 2017</th>
</tr>
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<tbody>
<tr>
<td>IA No:</td>
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</tr>
<tr>
<td>Lead department or agency:</td>
<td>Department for Environment, Food and Rural Affairs</td>
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<td>Other departments or agencies:</td>
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<td>Impact Assessment (IA)</td>
<td></td>
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<tr>
<td>Date:</td>
<td>25/07/2017</td>
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<td>Final (Validation) IA</td>
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<td>Type of measure:</td>
<td>Secondary legislation</td>
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<tr>
<td>Contact for enquiries:</td>
<td><a href="mailto:marine.litter@defra.gsi.gov.uk">marine.litter@defra.gsi.gov.uk</a></td>
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Summary: Intervention and Options

RPC Opinion: Awaiting scrutiny

Cost of Preferred (or more likely) Option

<table>
<thead>
<tr>
<th>Total Net Present Value</th>
<th>Business Net Present Value</th>
<th>Net cost to business per year (EANDCB in 2014 prices)</th>
<th>One-in, Three-Out</th>
<th>Business Impact Target Status</th>
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</thead>
<tbody>
<tr>
<td>-£3.9M</td>
<td>-£3.9M</td>
<td>£0.4m</td>
<td></td>
<td>Regulatory provision</td>
</tr>
</tbody>
</table>

What is the problem under consideration? Why is government intervention necessary?
Plastic microbeads in cosmetic products can pass through sewage treatment works and reach the marine environment. Once there it is impossible to recover them. They do not biodegrade, do accumulate in the marine environment and there is evidence they cause harm when ingested by marine animals. There are suitable non-plastic alternatives to microbeads in cosmetics so they are an avoidable source of pollution. Some businesses have already taken voluntary actions but others still continue to use microbeads. Therefore there is a market failure rationale for intervention based on externalities given that the environmental costs caused by microbeads to the environment are not taken fully into account by these businesses. A public consultation indicated widespread support for the approach.
What are the policy objectives and the intended effects?
The intervention is designed to protect the environment and food supply from further pollution, foster consumer confidence that the products they buy will not harm the environment, and support the cosmetics industry by setting a level playing field while ensuring a suitable timescale for implementation to minimise impact on the industry. It will also set an example for other countries and encourage wider adoption of legislation.

What policy options have been considered, including any alternatives to regulation? Please justify preferred option (further details in Evidence Base).
Policy option 0: Do nothing option: Continue to support the current voluntary action from certain cosmetics manufacturers to remove microbeads from their products. Other manufacturers could still use microbeads, damaging the marine environment with unknown future food security, health, and environmental impacts. Also consumers would not have the incentive to reduce their use of cheaper cosmetics containing microbeads unless a regulatory mechanism is in place.
Policy option 1 (current preferred option): Ban microbeads in rinse-off cosmetic and personal care products only: This is seen as the least cost solution for industry since it would imply substitution of microbeads for benign alternatives, but only for the remaining businesses who have not already taken voluntary action. Insufficient evidence was provided during the consultation to justify extending the ban to other products. We are working with the Hazardous Substances Advisory Committee to consider the need for future action on other categories of products potentially containing microbeads. Options such as taxation or charges were excluded based on consideration of complexity, proportionality and achieving desired actions more directly.

Will the policy be reviewed? It will be reviewed. If applicable, set review date: 01/2021
- Does implementation go beyond minimum EU requirements? Yes
- Are any of these organisations in scope? If Micros not exempted set out reason in Evidence Base. Micro Small Med Large
  Yes Yes Yes Yes
- What is the CO₂ equivalent change in greenhouse gas emissions? Traded: NA Non-traded: NA

I have read the Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options.

Signed by the responsible Minister: ___________________________ Date: ___________________________
Summary: Analysis & Evidence

Policy Option 1

Description:

FULL ECONOMIC ASSESSMENT

<table>
<thead>
<tr>
<th>Price Base Year 2017</th>
<th>PV Base Year 2018</th>
<th>Time Period Years 10 (2018-2027)</th>
<th>Net Benefit (Present Value (PV)) (£m) for 10 years</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Low: £1.93m</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>High: -£10.09m</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Best Estimate: -£3.90m</td>
</tr>
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</table>

COSTS (£m) | Total Transition (Constant Price) | Average Annual (excl. Transition) | Total Cost (Present Value) |
<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>0</td>
<td>£0.23m</td>
<td>£1.93m</td>
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<tr>
<td>High</td>
<td>0.10</td>
<td>£1.20m</td>
<td>£10.09m</td>
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<tr>
<td>Best Estimate</td>
<td>0.04</td>
<td>£0.46m</td>
<td>£3.90m</td>
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</table>

Description and scale of key monetised costs by ‘main affected groups’

This legislation will add additional burden only to those few companies who are still using microbeads and have not committed to discontinuing their use. The cost of a microbead ban is estimated at £0.46m per year. The cosmetics manufacturers will use a more expensive benign substitute for plastic microbeads, and a small additional one off familiarisation cost of £38,000 for the first year and annual enforcement cost on public bodies of £660 (i.e. local authorities).

Other key non-monetised costs by ‘main affected groups’

Alternatives to plastic microbeads - It is likely that much of the cost for replacing plastic microbeads with benign substitutes will be passed onto consumers - This might affect the overall demand for these products but at this stage we cannot quantify the extent of the fall of this demand.

Trade effects – It is possible that there will be some unknown trade effects. We will test this under both the WTO and European regulations before laying the legislation in parliament.

BENEFITS (£m) | Total Transition (Constant Price) | Average Annual (excl. Transition) | Total Benefit (Present Value) |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
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<tr>
<td>High</td>
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<td>• N/A</td>
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</tr>
<tr>
<td>Best Estimate</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Description and scale of key monetised benefits by ‘main affected groups’

The benefits of the ban are not quantified but are assumed to fall into two categories: benefits to businesses and environmental benefits (described below). No further substantive evidence was provided during the consultation.

Other key non-monetised benefits by ‘main affected groups’

The microbead ban is expected to have a positive impact on the marine environment. There are other stresses experienced by marine organisms including other forms of historical pollution and ocean acidification. Adding stresses from microbeads increases the overall risk to marine ecosystems. It is not possible to monetise the benefits and no further evidence was provided during the consultation.

Key assumptions/sensitivities/risks

Discount rate (%) 3.5

The baseline assumes that under the voluntary approach, there would be no change in microbead use over the 10 year appraisal period. Cosmetics listed on the Beat the microbead website are a representative cross-section of the industry segments in question. A sensitivity test has been carried out around this key set of assumptions. Since silica is denser than water, there is a risk that over time there could be an increase in the build-up of silica in household drains, leading to blockages, although no such evidence was provided during the consultation.

BUSINESS ASSESSMENT (Option 1)

Direct impact on business (Equivalent Annual 2014 Costs: £0.4m Benefits: £0 Net: £-0.4m)

In scope of Measure
IN Regulatory
Appendix A: Evidence Base (for summary sheets)

Introduction

The proposal is a qualifying regulatory provision which imposes restrictions on UK businesses. It bans the manufacture and sale of rinse-off cosmetics and personal care products containing plastic microbeads in order to protect the marine environment.

The approach has been developed in conjunction with a wide range of stakeholders including those from the cosmetics industry, environmental campaigners and academic researchers. A public consultation on our proposals was carried out between 20th Dec 2016 and 28th Feb 2017. It indicated widespread support for the proposals. Suggestions supplied were used to refine our definitions and to draft the legislation.

The legislation in question applies to England only. All UK Administrations are supportive of the ban but are required to bring in legislation according to their own legislative processes and timescales. We are working together to ensure this is carried out in a timely and consistent manner.

The EANDCB calculator gives an equivalent annual direct cost to (UK) business of £0.5m (2014 prices, 2015 present value) and a Business Impact Target score of 2.0. This measure to ban microbeads from cosmetic and personal care products is in scope of One In, Two Out (OITO). It is a regulatory measure for which the monetised benefits to business are less than the monetised costs and therefore takes an IN status. We estimate that the policy generates an annual net cost to business of £0.5m.

1. The policy issue and rationale for Government intervention

Microbeads are small plastic particles commonly used as an exfoliating or scrubbing agent in products such as facial cleansers, shower gels and toothpastes. Up to 680 tonnes of plastic microbeads are used in cosmetic products sold in the UK every year. They can pass through sewage treatment works, resulting in billions of tiny beads entering our seas each year. They do not biodegrade and accumulate in the marine environment. Once released into the environment it is impossible to recover them.

Microbeads, like other microplastics, can transport chemical pollutants (already contained in the plastic, or absorbed from seawater). These small pieces of plastic can be eaten by a wide range of marine animals, including seafood. Harm may be caused by the plastics themselves and/or by the chemical contaminants they transport into the animal’s digestive system. Ingestion of these microplastics can reduce digestion of food and adversely affect reproduction. Microplastics can also be passed along marine food chains.

There is little evidence of the impact to human health of microbeads, although this may be addressed by a planned review by the Department of Health. Digestive
tracts, where microplastics are likely to get caught, are usually removed when preparing fish for human consumption.

In the cosmetics industry, there are suitable, economically feasible alternatives for plastic microbeads including silica, salt and ground seed kernels. Scientific evidence suggests that these alternatives do not have negative impacts to the environment. Our public consultation requested evidence on the environmental impacts of alternatives to plastic microbeads. A variety of alternatives were suggested, as well as potential impacts that should be considered by cosmetics manufacturers during reformulation.

Microbeads in cosmetics are therefore an avoidable source of marine pollution that should be minimised in keeping with scientific advice, in particular from Defra’s Chief Scientific Advisor, Ian Boyd, in April 2016.

Some businesses have already taken voluntary actions but others still continue to use microbeads (more than 72% of major cosmetics companies are expected to have ceased to sell cosmetic products containing microbeads by 2017). There exists a market failure rationale for intervention based on externalities given that the environmental costs caused by microbeads to the environment are not taken fully into account by these businesses.

A ban of this kind would help protect the marine environment from further pollution and address public concerns relating to marine environment impacts arising from such cosmetics products.

Increasing public concern relating to environmental and health issues surrounding deposit of plastic microbeads in the marine environment has led the Government to consider legislative options to address the issue. The recent report of the Environmental Audit Committee (EAC) inquiry recommended that the Government bring in legislation banning microbeads in cosmetics and personal care products. On the 3rd September 2016 Environment Secretary Andrea Leadsom announced plans to ban the sale and manufacture of plastic microbeads within cosmetics and personal care products. A public consultation on our proposals showed widespread support for the approach.

The Cosmetics Toiletry and Perfumery Association (CTPA) has already confirmed widespread voluntary replacement of plastic microbeads with more environmentally friendly alternatives. More than 72% of major cosmetics companies are expected to have ceased to sell cosmetic products containing microbeads by the end of 2017 as a result of such elective action.

2. Policy objectives and intended effects

The intended effect of the regulatory proposal is to reduce the quantity of plastics entering the marine environment through personal cosmetic use. Specifically,

microbead plastic introduction via ‘rinse-off’ cosmetics products is to be completely discontinued.

At a relatively low cost to industry, the ban is intended to:
1. Prevent further harm to marine animals and reduce growth in the overall marine litter load.
2. Protect the marine environment and reduce the risk and severity of possible irreversible effects on food security and human health.
3. Support the cosmetics industry by ensuring that the ban enables time for product adjustments which place as little additional burden on the industry as possible.
4. Continue to encourage both existing and planned voluntary industry efforts to remove microbeads.
5. Foster consumer confidence that products will not cause marine pollution.
6. Set an example for other countries and encourage wider adoption of legislation.

3. Policy options considered, including alternatives to regulation

Policy option 0: Do nothing option
This would continue to support the current voluntary action from certain cosmetics manufacturers in removing microbeads from their products. Choosing this option would result in some cosmetics manufacturers still using microbeads and therefore damaging the marine environment with unknown future food security, health, and environmental impacts.

Moreover, maintaining the status quo (industry-led voluntary approach to microbead removal) would not help to set an international example, and would not help to increase consumer confidence in the cosmetics industry. The ban of microbeads was therefore considered the best option since alternatives to regulation would not address these issues.

Policy option 1 (preferred option): Ban microbeads in rinse-off cosmetic and personal care products only.

Our current proposals are that:
   a. We ban the manufacture and sale of cosmetics and personal care products containing microbeads in the UK.
   b. The ban would apply to solid microplastic ingredients <5mm in size in any dimension that are used as an ingredient in rinse-off cosmetics and personal care products.
   c. The ban on manufacture would apply from 1st Jan 2018 and the ban on sale from 30th June 2018.

This is considered a proportionate approach to a ban in that the option will cover solid plastic particles in products designed to go down the drain. This option is seen as the least cost solution for industry since it would imply substitution of microbeads for benign alternatives, but only for the remaining businesses who have not already taken voluntary action.
This approach also supports voluntary industry efforts to remove microbeads from cosmetic products. Given the proposed timing of the regulations enforcement, the cost to businesses of the ban arising from any changes to products is minimised.

The responses to the consultation showed broad support for the scope and timescale of the ban and therefore no further evidence on these aspects was collated. Extension of the ban to other products beyond rinse-off requires more evidence so is not currently considered feasible. Insufficient evidence was provided during the consultation. We are working with the Hazardous Substances Advisory Committee to consider the need for future action on other categories of products potentially containing microbeads. Options such as taxation or charges were excluded based on consideration of complexity, proportionality and achieving desired actions more directly.

4. Updates from consultation
A formal consultation on our proposals was held between 20th December 2016 and 28th February 2017. The consultation requested views on the proposed scope of the ban and how compliance should be monitored and enforced. It also sought evidence on costs to industry, particularly SMEs, as well as impacts on imports and environmental risks of alternatives to microbeads. The full list of questions related to the proposed ban on microbeads is below.

The responses confirmed that the cosmetics industry have been working to voluntarily remove microbeads from their rinse-off products and that suitable alternatives are available, although some reformulation work is still required. The responses further confirmed that work to address microbeads in leave-on cosmetics and personal care products was considerably less well advanced and would therefore take longer and have considerably higher cost to industry. Furthermore the responses confirmed doubts as to which products contained such microbeads and how they were disposed of, and raised suggestions that the potential for marine impacts from these products could be addressed by means other than a legislative ban. Therefore we have retained the scope of our proposed ban and our original assessment of costs still stands. However we have engaged with the independent Hazardous Substances Advisory Committee (HSAC) to consider the case for taking future action to address other categories of products potentially containing microbeads.

The responses suggested several potential regulators to take responsibility of enforcement of the ban, of which we have determined Trading Standards to be most suitable (more details below). We have engaged with relevant officials to confirm this and to test our cost assumptions. In light of these discussions, we can confirm that our initial pre-consultation assessment of costs of enforcement remain them same.

The responses gave details of the steps required by industry to implement the proposed ban; however they did not provide substantive evidence on costs to industry, particularly SMEs, nor on impacts on imports. Some confirmed that the phased implementation minimised cost to industry by permitting time to use up
stocks. Others noted that non-plastic alternatives may be more expensive; this is covered in our analysis below.

Several respondents provided suggestions of potential alternatives to microbeads and commented on the importance of ensuring that the environmental impacts of these potential alternatives were carefully considered before being used. We agree that it is important for manufacturers to ensure that any alternatives to plastic microbeads should be sustainable and that their impact on the environment should be carefully assessed.

**Consultation questions on the proposals for a ban**

a. Are our proposals for a ban fit for purpose? If not, please explain why. What alternative wording in a ban would most effectively reduce the risk of microplastic particles from personal care and cosmetic products reaching the marine environment?

b. This proposed ban applies to rinse-off cosmetics and personal care products including but not limited to exfoliating scrubs, shower gels and toothpastes. Is this category appropriate? If not, what range of products should the ban apply to, bearing in mind that the purpose of the ban is to protect the marine environment? Please supply evidence to support your suggestions.

c. Should any products be exempt from the ban? If so, please supply evidence to support your suggestions.

d. If products are not designed to go down the drain, but may still be disposed of in this way, what interventions or warnings are appropriate to protect the marine environment?

e. How should compliance with the ban be monitored?

f. Our proposals for enforcement are set out at point (f) on page 9. We would welcome comments on our proposed approach, suggestions for alternative approaches and views on how enforcement of the ban can most effectively and proportionately be carried out? Details of the types of civil sanctions available are set out in the Regulatory Enforcement and Sanctions Act 2008 Part 3 Civil Sanctions sections in particular sections 39, 42 and 4612.

g. What costs and/or constraints would industry, including in particular small and medium-sized enterprises (SMEs), incur in meeting a ban on microplastics in cosmetics and personal care products?

h. To what extent will imports be affected by the ban? Please supply evidence to support your suggestions.

i. What are the risks that alternatives to microbeads will themselves have significant environmental impacts? If so, how could these risks be avoided, minimised or mitigated? Please supply evidence to support your suggestions.
5. Expected level of business impact

There are estimated to be around 300 cosmetics manufacturers in the UK. Of these, the vast majority are small and are unlikely to be using plastic microbeads. The size of the UK cosmetics industry is £9.1bn in sales per year.

Of the larger companies, the majority are already acting voluntarily to discontinue microbead use (see below). More than 25 major companies have already committed to being microbead free by 2017. ProTec Ingredia, an importer of microbeads in the UK, estimate that sales of their own microbeads have fallen around 85% (35 tonnes to 5 tonnes) between 2012 and 2016, and that their partners and competitors are in a similar position.

The UK Cosmetics, Toiletry and Perfumery Association (CTPA) has estimated that the vast majority of UK cosmetics production will be microbead free by the end of 2017. CTPA and Defra elaboration of data from the “Beat the microbead” campaign website shows 72% of all major cosmetics companies (by number of companies, not share of output) will have ceased to produce and sell cosmetic products containing microbeads by the end of 2017. Reckitt Benckiser has committed to achieving this a year later (by 2018). Avon, Steiner Leisure, Christian Dior, Elisabeth Arden and ARK Skincare lack specific commitments to microbead removal by this date and could be directly impacted by the ban. All high street retailers will have ceased to sell ‘own-brand’ cosmetic products containing microbeads by the end of 2017. Among these, 1/3rd (Boots, Wilko Ltd, Waitrose) will remove all cosmetics (including third party products) products from sale by this date.

This legislation will add additional burden only to those few companies who are still using microbeads and have not committed to discontinuing their use.

Due to lack of other evidence and based on best available information on the product lists provided by the “Beat the microbead” campaign website, we have estimated the proportion of products that will continue to contain microbeads in the absence of a ban. 1 Toothpaste of 117 listed (1%), and 72 of 886 face care products listed (8%) contain microbeads with no plans to phase out. The face care products listed are primarily facial scrubs.

According to the CTPA annual report, the UK is a net importer of cosmetics products, running a trade deficit of £137m in 2015 (1.5% of industry size by sales). In 2015, imports were 36% of total industry size by sales. For the beauty products category (which includes face care) this figure is 39%.

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7 https://www.beatthemicrobead.org/en/industry. The 72% figure was obtained by contacting from the ‘ban the microbead website’, individual company statements/press releases and direct phone calls to their customer service operators.


In terms of origin, 78% of beauty product imports come from other EU countries or from North America. The US are currently introducing a microbead ban\textsuperscript{10}, and certain European countries are exploring the possibility of banning microbeads. Moreover, industry statements\textsuperscript{11} on phasing out microbeads generally refer to global removal. This suggests that a very small percentage of imports are likely to be affected by the ban.

Using the estimates above for the percentage of different products sold that contain microbeads, and the volume of imports in those product categories from the CTPA report, we can estimate that around £30m worth of products that contain microbeads will continue to be imported into the UK each year in the absence of a formal ban (around 1% of total cosmetics imports). This assumes that imports and domestically produced products are equally likely to contain microbeads. Since the UK is a (small) net importer of cosmetics products it seems reasonable to think that the UK is also a net importer of cosmetics products that contain microbeads, although no evidence is currently available to support this suggestion and none was provided during consultation.

No company currently manufactures plastic microbeads within the UK. Cosmetics ingredient suppliers typically supply both plastic microbeads and their substitutes. Therefore the net effect on microbead suppliers is assumed to be zero. This also assumes that suppliers’ profit margins associated with microbeads are equal for benign alternatives.

The effects of the ban will be limited to cosmetics producers.

6 Costs

The cost of a microbead ban is estimated at £0.5m per year. This is made up of a higher cost to UK cosmetics manufacturers of using a more expensive benign substitute for plastic microbeads (around £0.46m per year), and a small additional annual enforcement cost on public bodies of £660 (i.e. local authorities’ trading standards bodies).

Over a 10 year appraisal period the total discounted cost of the ban is estimated at £3.9m. The calculations are provided below.

Costs can be split into two categories – transitional (familiarisation) costs, and on-going (operational) costs.

Costs to businesses arising directly from the proposed regulation will not apply to those firms who already have plans to remove microbeads from their products before the introduction of the ban (the vast majority).

Only those businesses with no plans to remove microbeads will be affected.

\textsuperscript{10} https://www.congress.gov/114/plaws/publ114/PLAW-114publ114.pdf
\textsuperscript{11} https://www.beatthemicrobead.org/en/industry
Based on industry feedback, we do not expect additional costs as a result of product reformulation or relabelling, and the net impact on suppliers (importers) of microbeads in the UK is assumed to be zero.

Costs are categorised under the following headings:

7 Reformulation and Re-labelling

As the ban comes into force, affected cosmetics manufacturers will reformulate their products to remove microbeads as an ingredient. They will also have to relabel their products to take the different ingredients into account.

However, Unilever\(^\text{12}\) have stated that they were able to phase out microbeads at no additional cost. This is assumed to be because reformulation and relabelling of cosmetics is a routine process that takes place periodically. The timescale of the ban will give manufacturers time to reformulate their products as normal. Small manufacturers without these processes in place are assumed to be unlikely to use microbeads as an ingredient, since these manufacturers tend to focus on boutique or artisanal products.

Consequently, reformulation and relabelling are assumed to have zero additional cost.

8 Cost of substituting microbeads for a benign alternative

In order to maintain product quality and functionality (microbeads are generally used as an abrasive) businesses are assumed to substitute microbeads for a benign alternative.

Key facts

According to ProTecIngridia, the cheapest (and most popular) substitute for plastic microbeads is silica. The base price for silica is between £7-10 per kilo (£2-5 more expensive per kilo than polyethylene microbeads, which comprise more than 90% of microbeads used in cosmetics).

According to ProTecIngridia, natural alternatives range in price up to £60 per kilo. However, high price alternatives are assumed not to be a direct substitute for microbeads. Firms that reformulate using more expensive alternatives are assumed to do so for reasons besides the microbead ban (for example, in order to have a unique selling point for the product). Therefore, only the additional cost of replacing microbeads with the next cheapest alternative (silica) has been assumed to represent the viable and sustainable option for substituting plastic microbeads. Silica is an inert, non-toxic substance naturally occurring in the earth’s crust, which does

not pose a risk to marine animals. From the Eunomia report\textsuperscript{13}, “it will almost certainly behave in a similar way to other sand and grit particles”. Cosmetics ingredient suppliers typically supply both plastic microbeads and their substitutes. Therefore the net effect on microbead suppliers is assumed to be zero. This also assumes that suppliers’ profit margins associated with microbeads are equal for benign alternatives.

Assumptions to derive costs:

Weight of total products sold in each category is calculated using UK CTPA sales data for each product segment\textsuperscript{14} and a typical weight and price for each product category.

Total sales are divided by a typical price and weight for each product type (£2 for 100g of toothpaste, and £4 for 150g of face scrub). These product characteristics are based on light-touch market research\textsuperscript{15}, and the assumption that products containing microbeads are more likely to be aimed at the mass market, and will therefore tend to be in a lower price bracket. The suitability of the estimates will be influenced by how these assumptions relate to actual product compositions and sales. The figures are presented in Table 1 below.

**Table 2 - Cosmetics product characteristics used for microbead appraisal**

<table>
<thead>
<tr>
<th>Product type</th>
<th>Average product price</th>
<th>Average weight</th>
<th>Industry category size (annual)</th>
<th>Estimated total weight of all products sold by industry category (annual)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toothpaste</td>
<td>£2</td>
<td>100g</td>
<td>£461m</td>
<td>197 tonnes</td>
</tr>
<tr>
<td>Face scrub</td>
<td>£4</td>
<td>150g</td>
<td>£974m</td>
<td>2971 tonnes</td>
</tr>
</tbody>
</table>

Having calculated the total weight of products sold, we can estimate the weight of microbeads that will need to be substituted for a benign alternative using scientific data on product microbead content (from the Eunomia report on microplastics prepared for the European Commission\textsuperscript{16}), and the size of the cosmetics market that has no plans to phase out microbead use. We can then apply the price differential between the microbeads and microbead alternative to the weight of microbeads affected.

The Eunomia report prepared for the European Commission suggests that microbead content by weight was found to be between 2-4% for toothpaste and 0.4-

\textsuperscript{14} http://www.ctpa.org.uk/annualreport/2015/files/assets/common/downloads/CTPA%20Annual%20Report%202015.pdf
\textsuperscript{15} Using product searches on http://www.boots.com/
10.5% for facial scrubs. For this appraisal we have used 3% for toothpaste and 5% for face care products. This information is presented in the table below:

### Table 3 - Microbead content by product type

<table>
<thead>
<tr>
<th>Product type</th>
<th>Product microbead content (by weight)</th>
<th>Share of volume of products that use microbeads with no plans to phase out (from Beat the microbead product lists)</th>
<th>Weight of microbeads used by product category (annual)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toothpaste</td>
<td>3%</td>
<td>1%</td>
<td>6 tonnes</td>
</tr>
<tr>
<td>Face scrub(^{17})</td>
<td>5%</td>
<td>8%</td>
<td>149 tonnes</td>
</tr>
</tbody>
</table>

For this appraisal, it is assumed that all manufacturers who would use microbead ingredients in the absence of a ban will use silica at a price of £8/kilo (an additional £3 per kilo). We have assumed that large cosmetics manufacturers have significant purchasing power and are therefore considered likely to pay nearer the bottom of the silica price range than the top.

This method suggests that there are 155 tonnes of microbeads in cosmetics products that will not be phased out in the absence of a ban. If we multiply the 155 tonnes of microbeads by the additional £3 per kilo (£3000 per tonne) that it costs to replace microbeads with silica, this process results in a best estimate for the **additional cost of UK manufacturers replacing microbeads with a benign substitute of £0.46m per year**.

UK imports of cosmetics products are roughly equal to exports (trade deficit in cosmetics products of less than 2% of industry sales). We therefore assume that the cost to manufacturers who sell in the UK is equal to the cost to UK manufacturers (who would have to remove microbeads from products that are sold abroad).

The method used above assumes that the products listed by Beat the microbead\(^{18}\) are a suitably representative snapshot of the cosmetics industry. This source is frequently updated and may therefore be thought to be a relatively accurate picture of emerging manufacturer positions on microbead phase outs.

However, there are also issues with this source. The list is unlikely to represent a complete picture of the cosmetics industry, or to list every product sold in each category. For this appraisal, the effect of motivated consumers wishing to list products that contain microbead ingredients is assumed to balance against that of manufacturers wishing to promote that their products are microbead free.

It is also assumed that products that contain microbeads sell on average as well as products that are microbead-free. In fact, consumers may wish to avoid products that

\(^{17}\) Total size of face scrub segment calculated as the sum of “face care non-medicated” and “face care male” subsections on the CTPA annual report

contain microbeads if they consider them unethical. On the other hand, microbead products are more likely to be produced by large manufacturers and therefore be aimed at the mass market. For the purpose of this appraisal these effects are assumed to balance.

On account of the issues with this key piece of evidence, we have also conducted sensitivity tests to look at what the impact would be if our best estimate approach (above) is overly optimistic about the cost of replacing microbeads with a benign substitute, or overly pessimistic.

Our high estimate uses an extremely conservative approach to estimate the size of the microbead input to the cosmetics industry.

The 2014 ONS supply and use tables\(^1\) list the input structure of each industry in terms of combined domestic and imported goods and services. Using this information we are able to estimate the input of microbeads to the UK cosmetics industry.

The intermediate input of manufacture of petrochemicals (which contains plastic microbeads\(^2\)) to the “Soap and detergents, cleaning and polishing preparations, perfumes and toilet preparations” category (which contains the cosmetics industry) is listed as £2m.

If we assume that all of this £2m is spent on microbeads then we can estimate the increase in cost of replacing this input with silica. Silica is 60% more expensive per kilo, which would lead to an additional cost to UK cosmetics manufacturers of £1.2m.

This estimate is extremely conservative. It is based on 2014 ONS data that will not take account of voluntary reductions in microbead use by the cosmetics industry. Unilever have taken a leading role in removing microbeads from products, but did not complete their global phase-out until 2015. While this estimate assumes that cosmetics manufacturers will continue to use plastic microbeads at the same rate that they did in 2014, many manufacturers have plans to phase out microbeads by the end of 2017, and so will not be affected by the ban.

There will also be other non-microbead petrochemical inputs included in the £2m figure, such as the manufacture of other organic chemicals. The proposed ban will also only apply to rinse-off products, which is likely to be only part of the total cosmetics industry.

So while the additional cost to the cosmetics industry of replacing microbeads with a benign alternative is likely to be far lower, we have used £1.2m as a high estimate as it represents a worst-case scenario for additional input costs. It is quite unlikely that such extra costs will materialise.

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We have also assessed the possibility that our best estimate of the additional cost of replacing microbeads with a benign substitute is overly pessimistic. If products containing microbeads sell less well than average cosmetic products then our best estimate of the cost to manufacturers will be too high. Likewise, we will have overestimated the cost to industry if there are additional industry plans to phase out microbeads that we have not included in our baseline. For example a firm may not wish to publicise a phase out of microbeads if it is planned to take place over a relatively long time scale, as this may lead to negative publicity.

Therefore we have also included an indicative low estimate for the cost to UK manufacturers of replacing microbeads with a benign substitute. Our low estimate is half of our best estimate, at £0.23m per year. These three estimates are summarised in the table below.

| Table 4 - Sensitivity test for the cost of replacing microbeads with a benign substitute |
|--------------------------------------|--------|--------|--------|
| Cost of replacing plastic microbeads with a benign substitute (annual) | Low estimate | Best estimate | High estimate |
| £0.23m | £0.46m | £1.2m |

It is likely that much of the above cost will be passed onto consumers. This might affect the overall demand for these products but at this stage we cannot quantify the extent of the fall of this demand. No evidence was provided during the consultation. If appropriate this could be considered as part of the review in 2021.

9 Capital costs

Businesses are not expected to make any investments in new machinery in order to be able to substitute microbeads for an alternative ingredient. No costs of this kind have been included.

10 Shelf life, stability of supply, and demand effects

According to ProTec Ingredia, replacing microbeads with a natural alternative could reduce product shelf life (the length of time products remain fit for sale on shelves) from 10 years to between 1-2 years. However, this effect is assumed to have no additional cost since products are not expected to remain on shelves for that length of time anyway. There may also be other ingredients that could limit the shelf life of products to below 10 years.

Certain natural alternatives to microbeads (for example, beeswax) can be susceptible to unstable supply, increasing costs for businesses if there is a shortage (for example, due to a bad harvest). The increased risk of supply chain instability has not been quantified at this stage. As described above, high cost natural alternatives
are not a direct substitute for microbeads and it is assumed that manufacturers will substitute microbeads for the next lowest cost alternative (silica). No further information was supplied during consultation.

Replacing microbeads with a benign substitute is assumed to have no impact on product quality, and therefore no impact on product demand. No additional cost to businesses as a result of reduced demand is included.

11 Enforcement costs

Enforcement costs will not fall on businesses. Trading standards are expected to enforce the ban, since they currently enforce Regulation (EC) No 1223/2009 on cosmetic products ingredients. There are 1379 substances that are currently banned from cosmetics, and a further 296 substances that are restricted\(^\text{22}\).

Adding a ban on microbeads is estimated to have a transition cost of between 0 and £95,000.

Frequent changes to the list of banned cosmetics ingredients mean that familiarisation with an additional prohibited substance can be considered part of business as usual, with no specific enforcement plan required. Zero familiarisation cost for enforcement is considered the low estimate.

However, domestic implementation of the microbead ban and the relatively high public profile of microbeads may mean that explicit advice provision and/or enforcement is required. An indicative estimate of the additional familiarisation burden that this would place on 190 local authority trading standards bodies is 2 days of staff time at £100/day. Therefore the best estimate for familiarisation cost of enforcement is £38,000.

A high estimate for the familiarisation cost is based on 5 days of staff time at £100/day per local trading standards body, which gives a total estimate of £95,000.

In addition to the familiarisation costs, annual enforcement costs are expected to be between £0-6,600 per year. The lower estimate is based on enforcement of the microbead ban as part of business as usual alongside other restrictions on cosmetics products. It is assumed that trading standards would be able to test for microbead content alongside checking for other banned substances at no additional cost.

An intermediate best estimate is based on the amount that trading standards are assumed to spend on enforcing restrictions on cosmetics ingredients per banned substance (since one banned substance will be added).

Total trading standards expenditure in England in 2015/2016 was £115m\(^{23}\). Assuming this is equally divided between 6\(^{24}\) activity areas (consumer safety, counterfeit goods, product labelling, weights and measures, under-age sales, and animal welfare), each activity area would have expenditure of £19m. If this product safety budget is equally divided between 20\(^{25}\) categories (for example cosmetics, toys, and fireworks) then the budget for enforcing restrictions on cosmetics products in England is estimated at around £0.96m. If we scale this figure up using national GVA figures\(^{26}\) we can estimate a total UK cosmetics enforcement budget of £1.1m.

There are currently 1675 restrictions on the contents of cosmetics ingredients. Dividing the total UK figure by the number of current restrictions results in an estimated additional burden of enforcing the microbead ban of £660 per year.

Due to the relatively high public profile of microbeads, trading standards may introduce some specific enforcement activity for the microbead ban, although this is considered unlikely as compliance is anticipated to be high. Specific enforcement of this kind is indicatively assumed to be 10 times more burdensome than business as usual enforcement, with a cost of £6,600 in the first three years, before falling to £660 for the rest of the appraisal period.

**Table 5 - Summary of enforcement costs**

<table>
<thead>
<tr>
<th></th>
<th>Low estimate</th>
<th>Best estimate</th>
<th>High estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Familiarisation cost</td>
<td>£0</td>
<td>£38,000</td>
<td>£95,000</td>
</tr>
<tr>
<td>(year 1) – One-off costs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual cost</td>
<td>£0</td>
<td>£660</td>
<td>£6,600</td>
</tr>
<tr>
<td>(years 1-3)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual cost</td>
<td>£0</td>
<td>£660</td>
<td>£660</td>
</tr>
<tr>
<td>(years 4-10)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

It is likely that an appeals' regime would be needed (e.g. compliance notice and possible impact on the tribunals system).

An appeals regime has been developed in collaboration with Ministry of Justice and Her Majesty’s Courts and Tribunals Service. The exact costs of such a regime have not been calculated, however it is estimated that there will be <10 appeals generated per year and that this will decrease in subsequent years as compliance increases because the prohibition becomes "normalised". No additional specialist expertise would be required above that already present on the tribunal panel. The most appropriate chamber for appeals is the General Regulatory Chamber of the First-tier Tribunal (this covers the environment jurisdiction). These appeals will take place in England only. As environmental subject matter is devolved, Scotland, Northern Ireland and Wales will be introducing their own secondary legislation.

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\(^{24}\) [http://www.tradingstandards.uk/jobs/jandc-careerints.cfm](http://www.tradingstandards.uk/jobs/jandc-careerints.cfm)


12 Trade effects

Since the assumption is to ban both production of microbeads and sale of products containing them, it is possible that there will be some unknown trade effects to be tested under both the WTO and European regulations. However, the trade effects associated with this specific proposal are probably low given that certain European countries are already exploring the possibility of banning microbeads, and a US ban is currently being introduced. We are notifying the WTO and EU of our proposals to allow representations under the Technical Barriers to Trade Agreement and Technical Standards Directive respectively, prior to laying the Statutory Instrument in parliament.

France has already notified the EU and WTO of their proposals for a similar ban and has not received significant objections so we do not anticipate problems. In addition, in June 2016 EU Member States called on the European Commission to develop proposals for an EU ban of microbeads as part of the 2017 Plastics Strategy. In June 2017 the OSPAR Commission called on the EU to introduce appropriate measures to achieve a 100% phasing out of microplastics in personal care and cosmetic products in line with Action 47 of the OSPAR Regional Action Plan on Marine Litter.

Moreover, since most of the UK cosmetic industry (some operating at an international scale) is already taking voluntary action, the assumption is that only a minor percentage of trade will be affected (preliminary analysis suggests around 1% of cosmetics imports – see section 5). No additional evidence was provided during the consultation. We continue to engage with European partners in regard to a EU-wide ban, particularly through OSPAR.

13 Cost summary

A summary of monetised costs for the first year of the ban is found below.

**Table 6 - Cost summary (year 1)**

<table>
<thead>
<tr>
<th>Cost Type</th>
<th>Low estimate</th>
<th>Best estimate</th>
<th>High estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Substitution with a benign alternative</td>
<td>£0.23m</td>
<td>£0.46m</td>
<td>£1.20m</td>
</tr>
<tr>
<td>Enforcement cost</td>
<td>£0</td>
<td>£0.04m</td>
<td>£0.10m</td>
</tr>
<tr>
<td>Total cost (year 1)</td>
<td>£0.23m</td>
<td>£0.50m</td>
<td>£1.30m</td>
</tr>
</tbody>
</table>

The total costs over the appraisal period (2018-2027) are presented in Table 6 below.

**Table 6 – Total discounted costs** (over 10 years, discount rate 3.5%)

<table>
<thead>
<tr>
<th>Cost Type</th>
<th>Low estimate</th>
<th>Best estimate</th>
<th>High estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Substitution with a benign alternative</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enforcement cost</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total discounted cost</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Total discounted costs over the appraisal period (2018-2027, base year 2017)

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total discounted costs</td>
<td>£1.93m</td>
<td>£3.90m</td>
<td>£10.09m</td>
</tr>
<tr>
<td>Equivalent annual cost</td>
<td>£0.19m</td>
<td>£0.39m</td>
<td>£1.0m</td>
</tr>
</tbody>
</table>

14 Benefits

Benefits are difficult to monetise but are assumed to fall into two categories. A review will be carried out in 2021; this may support the identification of such benefits.

15 Benefits to businesses

There has been little assessment of the potential economic consequences of increased microplastics in the ocean. However there are some benefits that can be regarded as likely.

Removing plastic microbeads may lead to increased consumer perceptions that cosmetics products will not cause damage to the marine environment. This may lead to an increase in demand for some products not containing microbeads, particularly face scrubs.

The European Chemical Agency (ECHA) has produced a socio-economic dossier on the UK proposed restrictions of certain substances (namely octamethylcyclotetrasiloxane (D4) and decamethylcyclopentasiloxane (D5)). For this purpose a stated preference study was conducted suggesting that consumers valued a reduction in microplastic accumulation from cosmetics seven times more highly than superior personal care product quality. This implies that a ban on plastic microbeads could have a positive effect on consumer preferences and hence lead to increase profit margins to businesses when removing microbeads from their products.

Due to limited evidence available, the benefit to businesses of increased consumer confidence has not been quantified at this stage. It would have been disproportionate to analyse this matter during consultation.

However an economic analysis demonstrated that there are potential costs associated with microplastics to the aquaculture sector in the UK (Van der Meulen, M.D., DeVriese, L., Lee, J., Maes, T., Van Dalfsen, J.A., Huvet, A., Soudant, P., Robbens, J., Vethaak, A.D. (2014). Socio-economic impact of microplastics in the 2 Seas, Channel and France Manche Region: an initial risk assessment. MICRO Interreg project Iva). A microbead ban may reduce the level of plastic getting into the

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27 The stated preference study and corresponding analysis was carried out by a masters student at LSE, with guidance from a supervisor from LSE as well as a representative from the Dossier Submitter team
marine food chain, and lead to relatively healthier fish populations[^28]. This could have a positive impact on businesses that rely on healthy fish stocks, for example, the fishing and fish processing industries. However, the relationship between animal ingestions of microplastics in commercially-significant species and effects to their health are unknown and the consultation provided no further substantive evidence on the economic impact of a ban on microbeads.

There may be some positive effect of setting an example for our neighbours, making it more likely that neighbouring countries will implement similar bans. Oceans are a common resource and marine litter is a transboundary problem. The more countries that ban microbeads the greater the reduction in marine litter inputs into the world’s seas. This benefit cannot be quantified at this stage.

### 16 Environmental benefits

The evidence base on the effects of microplastics, including microbeads, in the marine environment is limited. However there is evidence of numerous potential effects caused by the plastic polymer itself, by the additives it contains, or by other chemicals which are known to associate with microplastics once they are in the ocean. The United Nations advisory body, the Joint Group of Experts on the Scientific Aspects of Marine Environmental Pollution (GESAMP) reviewed the evidence on microplastics, such as microbeads, in 2015 and concluded that the ingestion of microplastics may have an effect on the feeding, movement, growth and breeding success of the host organism in a range of species.

A Defra funded project undertaken by the University of Plymouth showed microplastics can accumulate pollutants from seawater and transfer them to the guts of marine organisms. Microplastics can cause physical harm to marine organisms and can transfer along a simple food chain.

There are also potential environmental effects of microplastics that are not related to the ingestion of these particles by animals or algae. For example the colonisation of microplastics could be a means for invasive non-indigenous species to spread to new areas. The presence of high concentrations of microplastics in beach sediments can change their permeability and heat absorbance, potentially affecting species where gender is determined by temperature (e.g. sea turtles) and sediment dwelling species that might be at a higher risk of desiccation (e.g. worms, crustaceans, and molluscs).

There are also other stresses experienced by marine organisms including other forms of historical pollution and ocean acidification. Adding stresses from microbeads increases the overall risk to marine ecosystems. The microbead ban is therefore expected to have a positive impact on the marine environment as it will reduce the overall microplastic load and the potential for these effects. Alternatives to microbeads should be assessed by producers to ensure they do not have significant environmental impacts.

A valuation study conducted by EFTEC in 2002\textsuperscript{29} on benefits of revised Bathing Water Quality Directive, reported that respondents were willing to pay between about £6 and £11 per household per year for avoiding the presence of some litter / dog mess on the beach. This equates to a minimum of £144 million per year for England and Wales. Whilst the objective and the context of the above study are quite different from the microbeads issue, it can be indirectly inferred that society have a high willingness to pay for removing litter in the marine environment.

However, since both the scientific and the economic evidence on this particular area is very limited the environmental benefit of banning microbeads has not been quantified at this stage. No significant evidence was provided during the consultation.

While the net impact of the microbead ban is expected to be positive, no benefits have been quantified at this stage. A summary of monetised costs is to be found in section 13.

17 Key Assumptions and Risks
Assumptions made have been included throughout this assessment where relevant. Key assumptions have been highlighted below. No significant responses were received during the consultation to challenge these assumptions so they remain unchanged.

The baseline assumes that under the voluntary approach, there would be no change in microbead use over the 10 year appraisal period. Since manufacturers would be unlikely to continue to use microbeads in the same quantity throughout the period (it seems likely that consumer pressure would lead to further reductions) this can be seen as a conservative estimate.

Based on industry feedback, we have assumed no additional cost to the cosmetics industry from product reformulation or relabelling. More information on this assumption is found in section 8.

We have made various assumptions in order to calculate our best estimate of the cost of replacing microbeads with a benign alternative:

- Products containing microbeads are likely to be aimed at the mass market, and are therefore assumed to be below average cost.
- An equal weight of silica and microbeads serve the same function.
- Products containing microbeads sell on average as well as products that do not contain microbeads.
- All microbeads used in cosmetics can be replaced with silica.
- Cosmetics manufacturers are able to source a stable supply of silica at a price of £8 per kilo.
- Cosmetics listed on the Beat the microbead website are a representative cross-section of the industry segments in question.

\textsuperscript{29} EFTEC report, Valuation of Benefits to England and Wales of a Revised Bathing Water Quality Directive and Other Beach Characteristics Using the Choice Experiment Methodology, 2002
A sensitivity test has been carried out around this key set of assumptions. More information is found in section 8.

Since silica is denser than water, there is a risk that over time there could be an increase in the build-up of silica in household drains, leading to blockages. However no evidence of this was supplied during the consultation.

Cosmetics manufacturers are assumed not to invest in additional capital in order to replace microbeads.

There are assumed to be no shelf life, stability of supply, or demand effects. More information is found in section 10.

More information on the assumptions made to calculate enforcement costs is found in section 11. A sensitivity test has been carried out around our best estimate of the enforcement costs involved.

18 Wider impacts

Small firms impact test
The UK Cosmetics Toiletry and Perfumery Association confirmed that microbeads are almost exclusively used by larger companies. The impact on small companies is therefore expected to be minimal.

One In, Two Out (OITO)
This measure to ban microbeads from cosmetic and personal care products is in scope of OITO. It is a regulatory measure for which the monetised benefits to business are less than the monetised costs and therefore takes an IN status. We estimate that the policy generates an annual net cost to business of £0.5m.

19 Business Impact Target score

The EANDCB calculator gives an equivalent annual direct cost to (UK) business of £0.4m (2014 prices, 2015 present value) and a Business Impact Target score of 2.0.