

# Big Ask Scotland

## A limit on total emissions between now and 2050

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Friends of  
the Earth  
Scotland

### 1. Introduction

The Scottish Government has published a Climate Change Bill which sets mandatory targets to cut greenhouse gas emissions in Scotland by 80% by 2050. Following a significant campaign from Friends of the Earth and other environmental groups it has also proposed annual targets<sup>1</sup>. We welcome this as an opportunity for Scotland to lead the way in climate legislation. The Big Ask Scotland is Friends of the Earth Scotland's campaign for an effective Climate Change Bill. We are calling for a Bill which – to complement both annual targets and the 80% reduction target – places a scientifically based limit on the cumulative total of all emissions between now and 2050, to enable Scotland to play a fair role in ensuring that the climate does not warm by more than 2°C. This briefing sets out why such a limit is crucial to the effectiveness and credibility of the Scottish Climate Change Bill.

### 2. Avoiding Dangerous Climate Change

European nations have agreed that in order to avoid the most dangerous consequences of climate change, the climate must not be allowed to warm by more than 2°C.<sup>2</sup> This means stabilising the amount of greenhouse gases (GHGs), measured by parts per million CO<sub>2</sub> equivalent (ppm CO<sub>2</sub> eq), in our atmosphere. The Intergovernmental Panel on Climate Change (IPCC) have warned that to have even a 50% chance of achieving this it is necessary to stabilise global GHG emissions at below 450ppm CO<sub>2</sub>eq and probably nearer 400ppm.<sup>3</sup> If GHGs were stabilised at 350ppm CO<sub>2</sub>eq the risk of exceeding a rise in temperature of 2°C would be significantly reduced.<sup>4</sup> Worryingly though, current global greenhouse gas emissions are already at 430ppm CO<sub>2</sub>eq and continuing to increase at approximately 2% per year. The level at which concentrations finally stabilise depends on the cumulative total amount emitted globally between now and then. Research by the Tyndall centre has identified a safe UK carbon budget of 4.6 Gigatons of Carbon Equivalent (GtCeq) between 2000 and 2050.<sup>5</sup> Dividing this in terms of Scotland's share of UK population, suggests a fair Scottish budget for that period in the order of 0.4 Gt-Ceq<sup>6</sup>. **To be effective and credible, the Scottish Climate Change Bill must provide a framework to ensure that Scotland limits its emissions to a fair share of the global budget.**

### 3. Why the Government proposals don't go far enough

Though the target proposed by Scottish Ministers to reduce emissions by 80% by 2050 is very welcome, without a cumulative budget the Bill offers little to ensure that Scotland would keep within a fair share of global emissions. Despite acknowledging that we have a moral responsibility to take action on climate change,<sup>7</sup> and accepting the need for annual targets without banking and borrowing<sup>8</sup>, the Government has indicated that it will not set an overall cumulative target in the Bill on the grounds that Scotland's global impact is relatively minor.<sup>9</sup> **Depending on the time and the rate**

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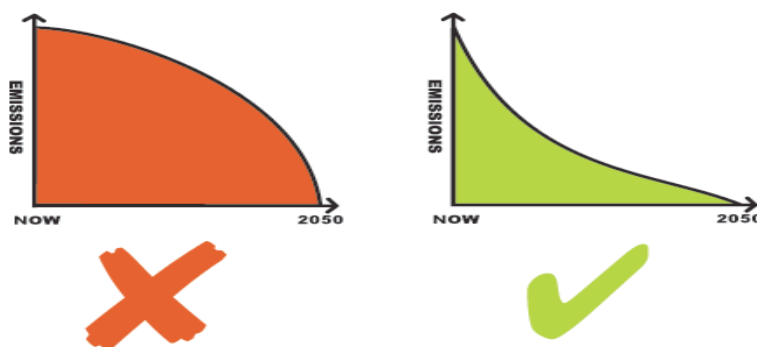
5 Rose Street, Edinburgh EH2 2PR

Tel 0131 243 2700 Fax 0131 243 2725 Email [info@foe-scotland.org.uk](mailto:info@foe-scotland.org.uk) Website [www.foe-scotland.org.uk](http://www.foe-scotland.org.uk)

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at which cuts were made, Scottish emissions could far exceed our fair share by 2050 while still achieving the target 80% reduction.

Within a cumulative budget it is important that significantly cuts are made early on. Looking at the illustrations below demonstrate this (the area below the curve is the total level of emissions).



As can be seen, while both meet the 2050 target, when action is delayed (as in illustration 1) far more emissions are generated. Studying another scenario in more detail, a straight-line reduction to the 80% target, e.g somewhere in between the two graphs, would lead to emissions in the order of 0.64Gt-Ceq – far above our fair cumulative budget. In other words the whole of the fair budget to 2050 would be exhausted by about 2030, requiring zero emissions thenceforth. Given that the current Bill does not require emissions reductions of at least 3% until 2020<sup>10</sup> raises the very real prospect of an even worse scenario, with Government delaying action in the short term, and thereby using up our cumulative budget before 2030. Indeed our own research suggests **staying within the safe Scottish budget will require the rate of emissions reduction to rise rapidly to between 6% and 9% a year, and then be sustained at that level until 2030, followed by a minimum of 3 % annual cuts until 2050.**<sup>11</sup> So, while the Government's commitment to annual targets is to be welcomed, this should be firmly within the framework of a cumulative budget thereby ensuring significant cuts early on.

#### 4. Conclusion

Much is made of keeping global warming below 2°C, yet the current Scottish Climate Change Bill contains neither an overall cumulative budget nor early and significant annual emissions reductions. Unless the Bill is altered appropriately, Scotland's legislation could prove largely symbolic.

For further information please contact:

Mary Church  
Campaigns Researcher  
mchurch (at) foe-scotland.org.uk

1 3% from 2020. No percentage reduction between now and 2020 other than specifying it should be less than the year before. See Climate Change (Scotland) Bill (as introduced) online at <http://www.scottish.parliament.uk/s3/bills/17-ClimateChange/index.htm>

2 IPCC 2007, Stern Review 2006

3 See the Stern Review and IPCC Summary for Policy Makers 2007

4 Meinshausen 2005 On the risk of overshooting 2oC

5 Tyndall Centre 'Living Within a Carbon Budget' 2006. Notably this would limit atmospheric concentrations to 450ppm. Depending on the best scientific evidence available however, this may need to be lower.

6 Scotland's share of UK population in 2000 was 8.6% - based on Census 2001 figures

7 Scottish Government Consultation on proposals for a Scottish Climate Change Bill Jan 2008, 2.5

8 Stewart Stevenson evidence to Transport, Infrastructure and Climate Change Committee, 11 November 2008, column 985-986 online at <http://www.scottish.parliament.uk/s3/committees/ticc/or-08/tr08-2102.htm#CoI977>

9 Scottish Government Consultation on proposals for a Scottish Climate Change Bill Jan 2008, 5.15

10 Climate Change (Scotland) Bill (as introduced) online at <http://www.scottish.parliament.uk/s3/bills/17-ClimateChange/index.htm>

11 Research available on request. Note that other scenarios, a 5% annual reduction throughout for example, could also meet Scotland's fair cumulative budget.