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Daylight Saving Bill 2010-11

Bill 7 of 2010-11

RESEARCH PAPER 10/78 1 December 2010

Over the past decade there have been several attempts to shift clocks forward for one hour throughout the year, so that more daylight would be experienced in the evenings rather than the mornings. There could be a range of benefits from such a change including: fewer people killed on the roads; improved health and wellbeing; an economic stimulus; and reduced greenhouse gas emissions.

A number of commentators are not convinced by the supporting evidence and claims, or believe that more information is required before a decision can be supported. There are particular concerns in Scotland about the implications of the darker mornings that a change would cause.

The *Daylight Saving Bill 2010-11* is a Private Member's Bill sponsored by Rebecca Harris MP. It would require the Government to conduct a cross-departmental analysis of the potential costs and benefits of advancing time by one hour for all, or part of, the year. If this analysis found that a clock change would benefit the UK, the Bill requires that the Government initiate a trial clock change to determine the full implications.

Oliver Bennett

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Research Paper 10/78

ISSN 1368-8456

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Summary

Since days are longer in the summer it is possible to shift the clocks so that daylight hours are more in line with waking hours, when society may find them most useful. This already happens when clocks are put forward onto British Summer Time (BST) at the end of March, putting the UK on Greenwich Mean Time plus 1 hour. Shifting to BST gives an extra hour of daylight in the evening so it can more easily be used for work or leisure, rather than in the mornings when many people are asleep.

Some have called for clock times to be shifted forward for one hour throughout the year so that more daylight would be experienced in the evenings rather than mornings. There could be a range of benefits to such a change:

- fewer people killed and seriously injured on the roads (at least 80 fewer people killed each year);
- energy savings (around 0.6% reduction in bills over winter months);
- a reduction in crime and the fear of crime;
- reduced greenhouse gas emissions (around 500,000 tonnes CO_2 per year);
- more daylight for recreation and sport activities (an average daily gain of 55 minutes of daylight in the evening);
- increased tourism revenue (over £2 billion per year);
- improved trade with Europe; and,
- general improvements to health and wellbeing, particularly for the elderly.

However, a number of commentators are not convinced by evidence supporting a change, or believe that more information is required before a decision can be supported. There are particular concerns in Scotland due to the shorter winter day length in more northern latitudes—a change would mean that the sun would not rise until 09:42 in midwinter in Edinburgh, although sunset would be delayed to 16:40 from 15:40. A trial period has been suggested by some as a way to determine the full implications of a change.

The *Daylight Saving Bill 2010-11* is a Private Member's Bill sponsored by Rebecca Harris MP. It would require the Government to conduct a cross-departmental analysis of the potential costs and benefits of advancing time by one hour for all, or part of, the year. If the analysis found that a clock change would benefit the UK, the Bill requires that the Government initiate a trial clock change. The Bill has cross-party support.

1 Introduction

Day length changes throughout the year because the earth spins on a tilted rather than a vertical axis. In winter the northern hemisphere and UK are tilted away from the sun so nights (the time in shadow) are longer and days are shorter. In summer it is tilted towards the sun, giving more time in the light and making days longer and nights shorter.

At the Poles the effect is at its most extreme, causing the summer nights of the midnight sun when the sun is so high in the sky that it never sets. Consequently changes in daylight hours throughout the year are more pronounced in northern Scotland than they are in southern England.

Since days are longer in the summer it is possible to shift the clocks so that daylight hours are more in line with waking hours, when society finds it most useful. This already happens in the UK when clocks are put forward onto British Summer Time (BST) at the end of March, putting the UK on Greenwich Mean Time plus 1 hour. Shifting to BST gives an extra hour of daylight in the evening so it can more easily be used for work or leisure, rather than in the mornings when many people are asleep. Exactly the same effect could be achieved by staying on existing time but getting up, going to work and finishing work an hour earlier, which is common practice in Norway and Sweden. Of course, altering our clocks or activity patterns does not change the fact that daytime is shorter in the winter.

Some have called for further changes to clock times so that more daylight would be experienced in the evenings rather than mornings throughout the year. There could be a range of benefits to such a change—from fewer people killed and seriously injured on the roads to reduced energy bills. See section 3 for the potential consequences of such a change.

However, some are opposed to such a change as they value lighter mornings over lighter evenings. Lighter mornings have traditionally been supported by postal workers, the construction industry and farmers. Those living in Scotland, where there is a shorter winter day, often voice particular concerns about children and adults having to travel to school and work in the dark. However some of these concerns are less relevant today due to changes in working practices and there is evidence to suggest that there would be fewer people killed and injured in Scotland with a change.

More background information on British Summer Time, clock changes and past attempts to change the law can be found in Library Standard Note SN/SC/3796 British Summer Time.

1.1 Definition of terms

A number of terms are used when referring to clock changes. Greenwich Mean Time (GMT) is when the sun passes over the Greenwich Meridian at noon. The Greenwich Meridian has a longitude of 0 degrees. Currently the UK is on GMT during winter months. In summer it adopts British Summer Time, which is GMT plus 1 hour. Most other European countries are on Central European Time (GMT+1 in winter and GMT+2 in summer). Many commentators support the adoption of Single/Double Summer Time (SDST) in the UK, putting the UK on the same time as Central European Time.

Existing and possible time zones

Country/area	Summer	Winter
UK	British Summer Time (BST)—GMT plus 1 hour	GMT
Possible UK: Single/Double Summer Time (SDST)	GMT plus 2 hours	GMT plus 1 hour
Western Europe (excluding Portugal and Ireland)	Central European Summer Time (CEST)—GMT plus 2 hours	GMT plus 1 hour

1.2 Adoption of summer time in the UK

To save energy and to help the war effort, the *Summer Time Act 1916* advanced the clocks in Great Britain for one hour from 21 May until 1 October. After a year a consultation indicated that the system was very popular. Since then summer time has always been adopted in the UK, although there have been periods, notably during the Second World War, when the start and end dates have been altered or more substantial clock shifts have been made.

1.3 Sunrise and sunset times at specific locations under current regime and SDST[1]

Place	Winter solstice (21 Dec 2010)			Summer Solstice (21 June 2010)		
	Time zone	Sunrise	Sunset	Time zone	Sunrise	Sunset
Penzance	GMT:	08:19	16:22	BST:	05:12	21:36
	GMT+1:	09:19	17:22	GMT+2	06:12	22:36
London	GMT:	08:04	15:54	BST:	04:43	21:22
	GMT+1:	09:04	16:54	GMT+2:	05:43	22:22
Leeds	GMT:	08:22	15:47	BST:	04:35	21:41
	GMT+1:	09:22	16:47	GMT+2:	05:35	22:41
Edinburgh	GMT:	08:42	15:40	BST:	04:26	22:03
	GMT+1:	09:42	16:40	GMT+2:	05:26	23:03
Thurso	GMT:	09:03	15:21	BST:	04:05	22:27
	GMT+1:	10:03	16:21	GMT+2:	05:05	23:27

[1] Data taken from HM Nautical Almanac Office

2 The *Daylight Saving Bill 2010-11*

There have been a large number of legislative attempts to change clock times in order to shift more of the working day into line with daylight hours. The last was a Private Member's Bill sponsored by Tim Yeo MP, the then chair of the Environmental Audit Committee. His *Energy Saving (Daylight) Bill 2008*, would have introduced Single/Double Summer Time (SDST). The Scottish Parliament and Welsh Assembly would have decided whether to follow the changes for their respective countries. It would also have established a "review panel" to determine the effects of the change. The Bill ran out of parliamentary time. Details of related Bills can be found in Library Standard Note SN/SC/3796, British Summer Time.

The current legislative proposal, the *Daylight Saving Bill 2010-11*, is a Private Member's Bill sponsored by Rebecca Harris MP. The Bill has cross-party support. It takes a slightly different approach to previous bills as firstly it would "require the Secretary of State to conduct a cross-departmental analysis of the potential costs and benefits of advancing time by one hour for all, or part of, the year". Only if the analysis indicated that a clock change would benefit the UK would the Bill require the Government to initiate a trial clock change.

The Bill is supported by a large number of individuals, businesses, charities and other organisations through a campaign group known as 10:10 Lighter Later. According to its website, 10:10 is "an ambitious project to unite every sector of British society behind one simple idea: that by working together we can achieve a 10% cut in the UK's carbon emissions in 2010".[2] A list of organisations supporting the 10:10 Lighter Later campaign and the aims of the Bill can be found in Section 5.

Rebecca Harris MP set out her reasons for sponsoring the Bill:

> I am sponsoring the Bill because I believe there is enough evidence in support of putting the clocks forward an extra hour throughout the UK to warrant a comprehensive study by the government, and that the possible benefits are too important and too numerous to ignore.
>
> The main potential benefits of putting the nation's clocks forward by an hour are:
>
> - Saving 80 lives and preventing hundreds of serious injuries each year;
> - Creating 60,000–80,000 new jobs in leisure and tourism, bringing an extra £3.5–4.5 billion into the domestic tourist economy each year;
> - Lowering electricity bills by maximising the available daylight and flattening the peak in evening demand;
> - Improving the quality of life for older people;
> - Helping to make people healthier and tackle obesity by giving people more time to exercise and play sport outside in the evening;
> - Cutting 447,000 tonnes of CO_2 helping meet out international commitments to cut the UKs carbon output at minimal cost;
> - Reducing insurance premiums by decreasing the number of road accidents and incidences of burglary;
> - Reducing opportunist crime and the fear of crime in the evenings; and,

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2 *Who we are*, 10:10 Lighter Later, viewed 25 November 2010

- Making the nation happier – including reducing the effects of Seasonal Affective Disorder

A wide range of organisations have offered their support to the Bill, including, The Royal Society for the Prevention of Accidents, The Tourism Alliance, The British Association of Leisure Parks Piers and Attractions, English Heritage, VisitBritain, Sport for England, The Central Council for Physical Recreation (who represent 316 UK Sporting organisations), Business Enterprise Scotland, Age UK, SAGA, The Parliamentary Advisory Council for Transport Safety, Road Safety GB, The Chartered Institute of Highways and Transportation, Brake, Living Streets, and the AA.

The Bill initially requires the government to undertake a full review of the potential benefits and to only undertake a further trial of the change if that review concluded that it would be likely to benefit England, Scotland, Wales and Northern Ireland.

I understand that this matter has been raised a large number of times over the last 40 years, but this Bill is designed to provide a thorough and objective enough analysis to resolve the matter once and for all.[3]

3 Potential consequences of further changes to clock times

3.1 Energy and climate change

A study by researchers at the University of Cambridge attempted to quantify the energy-related implications of the annual move from BST (GMT+1) to GMT in winter. It found that energy consumption probably increased with the change. It indicated that keeping GMT+1 in the winter could have a range of energy benefits for Scotland, Wales and England and provided the following estimates:

- Climate change—"at least" 500,000 tonnes of carbon dioxide saved each year;
- Security of supply—a saving of 6GWh of electricity per winter day; and,
- Fuel poverty—energy cost savings of around 0.6% over the months concerned.

The study calculated that these energy savings "are approximately equivalent to that consumed by 210,000 households or 74% of the domestic electricity consumption of Glasgow in 2008".[4]

In evidence to the Energy and Climate Change Select Committee, the Government highlighted contradictory research from the Buildings Research Establishment (BRE). This indicated that energy demand might actually increase if BST was kept throughout the year due to people leaving lights on during the day after having switched them on in the morning. The Government concluded that "the evidence therefore suggests a mixed picture and [it] is not strong enough to conclude either way what the impact on [energy] demand would be".[5]

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3 Personal communication with Rebecca Harris MP's office, 24 November 2011

4 *The Impact on Energy Consumption of Daylight Saving Clock Changes*, University of Cambridge, 26 March 2010

5 Energy and Climate Change Committee, *The effect on energy usage of extending BST—written evidence*, 28 October 2010, HC 562

However, the authors of the Cambridge study had a number of concerns about the BRE study.[6] Dr Garnsey, one of the authors, said that the study had been based on 'simulated' rather than actual data, which did not actually reflect 'empirical evidence on energy use over the course of the day'. She went on that:

> …the findings are out of line with the findings in the literature. We looked at 23 studies and only three of them had findings similar to [the BRE study.]
>
> But the most useful research is from the US in 2007 because they extended their Daylight Saving period by four weeks—three weeks in the spring and one week in the fall. They then had real data to compare before and after the clocks were advanced by an hour. The finding was that there was a reduction in energy use after clocks were advanced by an hour of 0.5% of the average daily demand. Interestingly, this is very similar to what was found in 1970 in this country after the trial period, where it was also found that there had been a reduction in energy use of 0.5% of daily national demand. Those methodologies are both using national statistics rather than the building based statistics of the BRE report.[7]

The Government also cautioned the Energy and Climate Change Committee that moving the clocks to the same time as other European countries would mean that peak demand would increasingly overlap with other countries. It stated that this could increase peak energy prices if there was particularly high demand—a situation that could increase in importance with greater integration with European energy markets.[8] National Grid has also recognised that if the UK is on the same time as France, a loss of capacity or severe weather could lead to higher prices than if the two countries were on different times.[9] However, it is not clear whether the potential increase in prices on occasions when supply is constrained would outweigh the potential overall savings.

In a separate study, the Cambridge researchers found that moving to SDST (rather than just keeping BST year round) could lead to even more energy savings.[10]

3.2 Accidents

It has been argued that moving to SDST would reduce the number of people killed and injured on roads across Great Britain, including in Scotland, as the sun would set later in the evening. The Royal Society for the Prevention of Accidents (RoSPA) explained:

> During the working week, casualty rates peak at 8am and 5pm for adults and 8am and 3.30pm for children, with the afternoon peak being higher for both. Road casualty rates increase with the arrival of darker evenings and worsening weather conditions. Every autumn when the clocks go back and sunset occurs earlier in the day, road casualties rise. The effects are worse for the most vulnerable road users like children, the elderly, cyclists and motorcyclists.
>
> The relative peaks are explained by several factors:

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6 Energy and Climate Change Committee, *Effect on energy usage of extending British Summer Time*, 19 November 2010, HC 562-i

7 Energy and Climate Change Committee, Effect on energy usage of extending British Summer Time, 19 November 2010, HC 562-i

8 Energy and Climate Change Committee, The effect on energy usage of extending BST—written evidence, 28 October 2010, HC 562

9 Energy and Climate Change Committee, The effect on energy usage of extending BST—written evidence, 28 October 2010, HC 562

10 Energy and Climate Change Committee, Effect on energy usage of extending British Summer Time, 19 November 2010, HC 562-i

> Motorists are more tired after a day's work and concentration levels are lower
>
> Children tend to go straight to school in the morning but often digress on their way home, increasing their exposure to road dangers
>
> Adults tend to go shopping or visit friends after work, increasing their journey times and exposure to road dangers
>
> Social and leisure trips are generally made in the late afternoons and evenings.[11]

In 1998 the Transport Research Laboratory and University College London calculated that over 100 lives could be saved each year by a move to SDST.[12] Research based on the British Standard Time Experiment 1968-71, calculated that the "groups which had benefited most from the [retention of BST] were those aged 5-15, pedestrians and those living in Central England and Southern Scotland".[13] More information about the British Standard Time experiment and accident research can be found in section 4.

The Department for Transport calculated that if SDST was introduced and led to the predicted reduction in accidents, it would save £138 million per year. It concluded that "the cost–benefit case [for a move to SDST] in road safety terms is clear", but cautioned that the potential wider costs of the move for other sectors would have to be taken into consideration.[14]

In 2009 the Public Accounts Committee published *Improving road safety for pedestrians and cyclists in Great Britain* on 20 October 2009. It noted "substantial evidence that fewer people would be killed and seriously injured on Great Britain's roads if this country were to put the clocks forward by one hour throughout the year". It recommended that the Government re-examine "the practice of changing clocks at the end of British Summer Time".[15]

Given the possibility that a move to SDST could reduce the number of people killed and injured on the roads, RoSPA supported an SDST experiment:

> RoSPA recommends that a change to lighter evenings should be introduced on a trial basis for 2 – 3 years (similar to experiment conducted during 1968/71). The decision about continuing permanently would then be based on the consequent effects on road casualties. This would provide objective, up-to-date evidence about the effects of SDST and also enable the public and the various industry and business sectors that would be affected to experience the change for themselves.[16]

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11 *British Summer Time Factsheet*, RoSPA, viewed 25 November 2010
12 TRL, *A New Assessment of the Likely Effects on Road Accidents of Adopting SDST*, 1998
13 *The potential effects on road casualties of Double British Summer Time*, TRRL Research Report 228, DoT 1989
14 *A Safer Way: Consultation on Making Britain's Roads the Safest in the World*, Department for Transport, April 2009
15 ibid
16 *British Summer Time Factsheet*, RoSPA, viewed 25 November 2010

However, some are not convinced that a change in clocks would have an impact on accidents. Peter Hitchens writing in the Mail on Sunday said that "these claims are pretty much guesswork" and he thought that lighter evenings would have little impact on accident rates:

> Evenings are more dangerous than mornings on the roads, especially in these days of cheap alcohol and all-day opening, and of sparse police patrols, because drivers have had more time to drink too much. Light and dark make little difference to that.[17]

The NHS national health information service cautioned that "much of the predicted benefits [in terms of casualty reductions] are estimates" and warned about the use of road death figures. It said that "it is difficult to know in advance what effect the darker mornings would have when people are heading to work and school". It pointed out that the TRL report acknowledged a "fair degree of uncertainty in their estimates" and that there "are strong grounds for suggesting that they are conservative".[18] A principle concern of those who are against a change is that the darker mornings will increase the risks for children going to school—even though fewer children may be injured in the lighter evenings.[19]

3.3 Crime

Some argue that lighter evenings may help to reduce crime, and may reduce the fear of crime. RoSPA said:

> British Crime Surveys between 1988 and 1992 show that over half of criminal offences take place during the hours of darkness in the late afternoon or evening, and of the small proportion of offences occurring in conditions of semi-darkness, far more occur at dusk rather than dawn. The British Crime Survey 2001 found that 13% of respondents felt 'very unsafe' walking alone in their area after dark and a further 19% felt 'a bit unsafe'.
>
> The Home Office commented in the mid nineties that 'although many crimes are committed when it is dark, definite conclusions are difficult to draw as regards the effect of darkness on overall levels of crime. Increasing daylight may for example have different effects for different crimes.' However with the rise in street crime and personal attacks, many people, particularly the elderly are fearful about going out after dark. Many parents do not allow their children to go out after sunset. The adoption of SDST would postpone this curfew by an hour.[20]

3.4 Leisure and sports

Outdoor activity can be limited by the onset of dusk. A switch to SDST would give an average daily gain of 55 minutes of accessible daylight in the evenings.[21] Lighter evenings would give more time for gardening (the most common outdoor leisure activity) and for outdoor sports. The Bill is supported by a large number of sporting organisations including the FA and the England and Wales Cricket Board. The Central Council for Physical Recreation (CCPR), representing a large number of sporting organisations, said:

> Our experience as sporting organisations tells us that moving the clocks will allow more people the chance to be more active. By aligning our waking hours to the UK's sunlit hours, people will have a greater opportunity to play sport and to be more physically active all year round. The 'extra hour' would mean that sports facilities

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17 Don't let them force you to live your life on Berlin time, *The Mail on Sunday*, 14 November 2010
18 *Time to change the clocks?*, NHS Inform, 26 November 2010
19 *Is the practice of turning the clocks back facing its final hour?*, The Scotsman, 31 October 2010
20 RoSPA, *Single/Double Summer Time Policy Paper*, October 2005
21 Policy Studies Institute, *Time for Change*, Mayer Hillman, 1993

> without floodlighting would be more heavily used and activities which cannot be undertaken in the dark elsewhere - on our coast, in lakes or on mountains and hillsides for example – become more viable in the evening. We, as sports organisations, are convinced beyond doubt of the benefits this move would bring to both the grassroots of sports and the nation's health as a whole…[22]

CCPR stated that the wider benefits could include:

> • Improved levels of physical and mental health. For example, people involved in sport or physical activity are up to 50% less likely to develop major chronic medical conditions
>
> • Improved social cohesion within communities
>
> • Improved skills. Sport increases educational attainment
>
> • Reductions in crime and anti-social behaviour. Sport and physical activity schemes involving 20,000 13-17 year olds have returned a 36% reduction in burglary and an 18% reduction in youth crime
>
> • Increased levels of 'social capital' which helps to build strong communities. Sport and exercise are the single greatest contributors to social participation.
>
> • A significant contribution to the nation's economy.[23]

3.5 Tourism

The British Association of Leisure Parks, Piers and Attractions (BALPPA) supported the *Daylight Savings Bill 2010*.[24] It claimed that a change could have to following economic benefits:

- Tourism earnings growth of between £2.5bn and £3.5bn;
- 60,000 to 80,000 more tourism jobs;
- Government would benefit from additional taxation; and
- Contribution to UK balance of payments from taxes drawn from overseas visitors.[25]

In 2008 the Select Committee on Culture, Media and Sport considered the possible benefits of moving to lighter evenings and recommended that the Government should identify whether a consensus could be reached on the issue:

> 169. The Tourism Alliance, the British Association of Leisure Parks, Piers and Attractions, and the Association of Leading Visitor Attractions all argued that Double British Summer Time would lead to environmental benefits[.]
>
> 171. However, we are aware that there is some opposition to the proposal. For instance, VisitScotland told the Committee that it would be unlikely to give the proposal its support. Putting the clocks forward in England and Wales would create a one hour time difference with Scotland, which VisitScotland claimed would cause problems for other industries. It argued that the finance sector in Scotland would not want to be in a

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22 Letter to MPs, CCPR, 27 September 2010
23 Letter to MPs, CCPR, 27 September 2010
24 *Double summer time lobbying intensifies*, BALPPA, 17 September 2010
25 *A Tourism Manifesto*, The British Association Of Leisure Parks, Piers & Attractions, viewed 25 November 2010

> different time zone to London. Nevertheless, the Confederation of British Industry (CBI) is supportive of the proposal.
>
> **172. The Committee recognises that the introduction of Double British Summer Time does not have universal support. However, there is a growing body of convincing evidence demonstrating the benefits of the proposal, not least in terms of energy savings, road safety and increased tourism revenue. On the other hand, there are objections that different time zones within the UK would not be feasible nor desirable. We call on the Government therefore to consult widely on this matter to see if a consensus could be reached.**[26]

3.6 Communications, trade, transport

Bringing the UK into line with CET could aid communication with most of the EU since more of the working day would coincide. Europe is the UK's main trading partner.[27] Harmonisation with CET may make life easier for travel industries that currently have to consider local time differences in their scheduling.

However, the Government said that the change could cause difficulties in Northern Ireland as it shares a border with the Republic of Ireland:

> …being on a different time zone to the Republic of Ireland would cause particular problems because of the land boundary and such a move would cause difficulties with cross-border transportation and communication links.[28]

Further afield the time overlap with the Middle and Far East would be increased but the overlap of the working day with North America would decrease by an hour; the New York opening of the market would move to 3pm London time. This was a point made by Greater London Authority Economics:

> At present a 9-5 working day in the UK and Paris/Frankfurt only overlaps by 5 hours (assuming a one hour lunch break from 13:00-14:00 in both the UK and Paris/Frankfurt). Aligning the time would raise this to 7 hours or by 40 per cent. For items of services trade that rely on 'real time' two-way voice or video communication, that would be a major benefit. An example would be a London-based fund manager who is advising a Swiss client, or a London-based lawyer who is advising a French company on an acquisition, or a London-based actuary who is advising a Dutch pension fund…
>
> The overlap with Asia in London's morning time would also increase by an hour: at present someone who works for the branch of an Australian bank in London who calls his/her head office in Sydney at 8am on a Monday morning would most likely not get an answer (it would be 7pm on Monday evening there). If SDST was adopted, it would be 6pm instead, giving more chance of the phone being answered.
>
> The London afternoon overlap with New York would be reduced by an hour. Currently the overlap is from around 2pm London time to 6pm; this would move to 3pm to 6pm. However this loss would be small, set against the gains to the Europe and Asia overlaps.[29]

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26 *Single/Double Summer Time: The time is right for London*, Greater London Authority, October 2010
27 *Single/Double Summer Time: The time is right for London*, Greater London Authority, October 2010
28 Energy and Climate Change Committee, *The effect on energy usage of extending BST—written evidence*, 28 October 2010, HC 562
29 *Single/Double Summer Time: The time is right for London*, Greater London Authority, October 2010

3.7 Agriculture

Concerns are often raised that adoption of SDST may impact on farmers who have to get up early in the morning to work. Under SDST a number of early morning tasks may have to be performed in darkness, although the impact of a clock change would very much depend on the type of farm, and some farms may benefit from a change.[30]

The NFU said in March 2010 that it now "has no strong views on whether we should or should not put the clocks forward". A narrow majority of NFU members recently supported a change.[31] A spokesperson from the NFU said that:

> The benefit of an extra hour of morning daylight for farmers is no longer really an issue—before modern-day machinery and lighting, daylight was crucial, but now farmers have the technology to deal with it.[32]

NFU Scotland has confirmed that it supports the Bill as it would provide an analysis of the likely impact of a clock change.[33] Scott Walker from NFU Scotland said

> If people can put a good argument forward to us as to why there should be change, we're not going to be the ones who stand in the way of that change, if it's for everyone else's benefit[.] We still don't see any benefit to agriculture from such a proposed change, [b]ut we do recognise that there's been a lot of comment saying that there's a lot of wider society benefits to be gained.[34]

A 2010 report by the Policy Studies Institute set out how farming practices have changed over recent decades, so that changing the clocks may not be the burden to farmers that it once was:

> Livestock farmers, particularly in the north of Scotland claimed in the past that they were unable to get their animals to early markets before daylight and that the dairy farmers had to spend longer rounding up grazing cows in the dark in time to get their milk on the first morning train to town.
>
> However, many of these problems have had declining relevance in recent decades as the character of farming has changed. Nearly two thirds of agricultural land is now used for rough grazing where the relationship with daylight and the hour of day is of little significance The more widespread application of mechanisation and affordability of new farming equipment, use of artificial lighting, better farming practices, and the development of new technologies enabling, for instance, developments in the use of refrigerated vehicles and plant, and in extending shelf life through new food processing techniques, have reduced the need for early collection and speedy delivery of produce. Nearly all cattle, including dairy cows, are now kept indoors for at least six months from October to April, and most cows are milked in artificially-lit automated parlours. These changes have clearly altered attitudes to the proposal to put clocks forward. For arable farmers an extra hour of daylight in the latter part of the day is considered desirable, particularly at harvest time and for ploughing and sowing in spring.[35]

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30 Policy Studies Institute, *Time for Change*, Mayer Hillman, 1993
31 NFU, Should we change the clocks? 18 March 2010
32 'Get England in sync with Europe, says MP, but Scots can lag behind', *Scotsman*, 13 December 2006
33 *Clock change one step closer*, The Scottish Farmer, 24 November 2010
34 *We're not against moving clocks forward an hour, say Scottish farmers*, The Guardian, 29 October 2010
35 *Making the most of daylight hours: The implications for Scotland*, Policy Studies Institute, October 2010

3.8 General well being and health

It is difficult to say whether a clock change would lead to health benefits, although some commentators have claimed that it may:

- increase opportunities for outdoor activity, leading to an improvement in health;
- increase vitamin D synthesis in the body; and,[36]
- reduce the incidence of Seasonal Affective Disorder (SAD), a form of depression. It has been estimated that around 7% of the population suffer from SAD.[37] SAD may be related to exposure to light.[38]

3.9 Implications for older people

Age UK supported SDST as it could encourage older people to be more active in the evenings. It said:

> There seems to be clear benefits of this for people in later life. We know that many older people will not go out once it is dark, so having lighter evenings would mean that more of them could spend longer hours out of their homes and be more involved in the civic life of their communities – if they want to. With millions of older households struggling to pay their energy bills, the potential reduction of heating costs is a further consideration.[39]

Saga stated that the status quo had a number of negative impacts on older people:

> The effect of the clocks changing causes many problems for older citizens, for example:
>
> - Two-thirds go out less in the evenings
> - 1 in 5 (20%) have to rely more on friends and family to take them places
> - 13% need to spend out on taxis instead.
>
> These findings are compounded by longer term reactions to the prolonged winter and dark nights as two thirds of people over 50 find their feelings change in winter with almost half (41%) feeling more depressed and a quarter (24%) feel grumpier. Interestingly it is the younger over 50s who feel the effects of winter more, two thirds of people aged 50-54 saying their feelings change, compared to under half of those aged 75 and over.[40]

4 Previous experimental changes to clock times

4.1 The British Standard Time experiment 1968-71

In the 1960s, the Government decided to test support for continuous summer time. A three year experiment was introduced from 1968-1971 when summer time (GMT+1) applied throughout the year. This was given the name British Standard Time (BST). The Government gave an undertaking that a review would be carried out before any decision was taken at the end of the experiment.

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36 *Making the most of daylight hours: The implications for Scotland*, Policy Studies Institute, October 2010
37 NHS webpage, Seasonal affective disorder [on 24 November 2010]
38 Mind webpage, Understanding seasonal affective disorder [on 24 November 2010]
39 This is Gloucestershire website, Should we keep our summer time? [on 24 November 2010]
40 *Think twice before changing the clocks Saga tells Government*, SAGA, 25 November 2010

The experiment was debated in the Commons on 2 December 1970 and by a vote of 366 to 81 the British Standard Time experiment was discontinued.[41] This overwhelming rejection was perhaps surprising since at the beginning of the debate, the then Home Secretary, Reginald Maudling quoted polls carried out "over the whole country" which showed that in mid-winter 50% of the population had favoured staying on BST and 41% wanted to return to GMT; in the spring these figures were 51% and 39% respectively. However, the Commons vote probably reflected in part fears about the safety of children on their way to school. Little faith was placed in the accident figures that showed a net decrease in road accidents. In addition, the poll figures for Scotland alone were 61% of people favouring a return to GMT and only 34% wanting to stay on BST.

Hamish Gray, Member for Ross and Cromarty, making his maiden speech, summed up many of the objections to the BST experiment:

> I have had a vast amount of correspondence on the subject and, with the exception of one solitary letter, it has been entirely against B.S.T. My correspondents represent a wide cross-section of my constituents. Unions and employers' associations alike have protested, and their views are fairly represented by the General Secretary of the National Union of Agricultural and Allied Workers, who wrote to me: Our union is overwhelmingly opposed to the continuation of B.S.T. The difficulties which have been created are immense. They include the care of animals; farm vehicles using unlit country roads, frequently in bad weather conditions; getting stock to market, with the impossibility of loading before daylight and the subsequent disorganisation of transport; the intense cold before sunrise; the hopeless situation on building sites even where the site is lit—and many are not. Men face dangers because of shadows and icy conditions, and many building operations which are relatively easy in daylight become impossible in artificial light. Postmen, Post Office engineers, municipal workers and delivery men all suffer a marked decline in their working conditions. B.S.T. causes hazards for children on their way to school, and for the elderly. Housewives who go early to shop or to work suffer difficulties.[42]

A Policy Studies Institute document published in the mid-1990s indicated that the small increase in children being injured in the morning was important in the decision to abandon the experiment, even though overall numbers of children being injured were thought to have declined:

> The small increase in the road accidents on the darker winter mornings, especially among children on their way to school, which occurred during the experimental period of 1968 to 1971 of maintaining BST throughout the year seems to have been so imprinted on the public memory that the far more substantial decrease stemming from the lighter late afternoons in the winter and evenings in the summer has been overlooked.[43]

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41 HC Deb 2 December 1970 cc1331-422
42 HC Deb 2 December 1970 cc1342-3
43 Policy Studies Institute, *Time for Change*, Mayer Hillman, 1993

Impact of the experiment—evidence of reduced road casualties

The Department for Transport's Transport and Road Research Laboratory (TRRL) found that during the experiment more people were injured in the darker mornings, but fewer were injured in the lighter afternoons, leading to a net reduction in injuries. The initial 1970 estimates used data from earlier winters for comparison and indicated that there was a net reduction of 2,700 people killed or seriously injured over the two winters.[44]

At the time it was pointed out that such calculations did not take into account the passing of drink/drive legislation in 1967. The TRRL itself acknowledged that the basis of the initial 1970 calculations was not precisely known, and it carried out a more sophisticated analysis of the data in 1989, allowing for the new legislation.[45] The study calculated what might have occurred in 1987 if SDST had been in force. The results agreed broadly with the earlier study. It also found that while the number of injured cyclists rose, the 5-15 year old age group, pedestrians and those living in central England and southern Scotland particularly benefited from the experiment. The only region in which the number of people killed or seriously injured rose was northern Scotland, although net casualties in that region were still reduced. Unfortunately the area of the regions used was large, because smaller areas would have provided insufficiently large numbers for analysis, so northern Scotland included much of the country.

Changes to accident numbers in 1987 had SDST been observed

Area	Fatalities	Killed/seriously injured	All casualties
SE England	-54	-339	-1006
SW England	0	-77	-225
Midlands	-26	-342	-450
Wales	0	-51	-30
N England	-78	-222	-251
S Scotland	0	-136	-333
N Scotland	0	+29	-57
Total	**-158**	**-1167**	**-2352**

A zero is shown where the casualty data were insufficient to complete the calculations.

The TRRL report concluded that:

> In summary, the retention of BST during the winter of 1969-70 led to a reduction of about 230 in the number of fatalities, 1100 in the number killed or seriously injured, and

[44] *The potential effects on road casualties of Double British Summer Time*, TRRL Research Report 228, DoT 1989 p.2

[45] *The potential effects on road casualties of Double British Summer Time*, TRRL Research Report 228, DoT 1989 p.2

> 2350 in the number injured ... BST was especially effective in reducing the number of fatalities. The groups which benefited most from the change were those aged 5-15, pedestrians and those living in Central England and Southern Scotland.
>
> The decision to terminate the experiment led to increased fatalities and casualties, especially among those groups which had benefited most from the retention of BST during the winter...[46]

Casualties in Scotland—1998 assessment of the data

In 1998 the Department for Transport commissioned a new study to look again at the implications of SDST for road casualties, based on modelling and data collected during the 1968-71 experiment. Again this found that SDST would lead to a reduction in accidents. The study concluded that SDST could lead to a reduction of over 100 deaths per year across Great Britain, and provided estimates for the impact on casualty numbers in Scotland:

> The adoption of SDST in Great Britain would transfer an hour of daylight from the morning, when there are relatively few casualties, to the afternoon and evening when there are more. It is predicted that this would reduce the number of people killed and injured in road accidents. The estimates of the reduction in the number of deaths per year range between 104 and 138, depending upon the assumptions made.[47]

Predicted reduction in the number of casualties in Scotland with SDST (1998):

	Morning increase	***Evening reduction***	***Net reduction***
Killed/seriously injured	30	71	41
All casualties	44	101	57

Dr Mayer Hillman of the Policy Studies Institute said that Scotland had benefited more than England and Wales from the reduction in road accidents during the BST experiment:

> …there were 11% fewer fatalities and serious injuries in England and Wales than would have been expected under the status quo. The overall reduction in Scotland was significantly greater at 17%, in spite of a small increase in casualties in the morning in northern Scotland.[48]

However, the NHS national health information service cautioned about the use of road death figures. It said that "it is difficult to know in advance what effect the darker mornings would have when people are heading to work and school":

> It is important to note that much of the predicted benefits are estimates, and it is difficult to know whether all possible factors have been taken into account. With regard to the reduction in road deaths in Scotland in particular, these figures are based on estimates from a 1998 study by the Transport Research Laboratory (TRL). As the author of the current report says, the TRL report acknowledged a fair degree of uncertainty in their estimates and "there are strong grounds for suggesting that they

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46 *The potential effects on road casualties of Double British Summer Time*, TRRL Research Report 228, DoT 1989 p.2

47 A *new assessment of the likely effects on road accidents of adopting SDST*, TRL Report 368, 1998

48 *Making the most of daylight hours: The implications for Scotland*, Policy Studies Institute, October 2010

> are conservative". Therefore the reduction in deaths and casualties should be considered with due caution.
>
> [T]here may be other evidence that has not been considered, which could support the opposing view. If the change were to be made, it is difficult to know in advance what effect the darker mornings would have when people are heading to work and school. Currently the vast majority of British school children go to school and leave school during daylight hours all year round. Single Double Summertime would mean most children would be travelling to school in darkness during the winter months.[49]

4.2 Portuguese experiment

Portugal, which is in the same time zone as the UK and Ireland, converted to CET in 1966–76 and 1992–96. It was hoped that during the 1992-96 experiment there would be increased tourism from Spain, that traffic accidents would be reduced and that there would be energy savings. However, Portugal reverted to Western European Time after the experiment. While the Portuguese example has been used to oppose clock change in the UK, there are questions about its relevance to the debate. As Portugal is further south it has longer days than the UK so the impact of any clock changes is different.

Lord Sainsbury, the then Parliamentary Under-Secretary of State for the Department of Trade and Industry, stated that Portugal abandoned the move as the energy savings were too small in comparison to the inconvenience it caused:

> The noble Lord, Lord Tanlaw, tried to explain away the situation in Portugal, but the point is that it did in fact move to Central European Time in 1992, but reverted to Greenwich Mean Time in 1996. It was concluded that the small energy savings could not justify the inconvenience the change created. It caused particular inconvenience through its impact on school children, which became a big issue in Portugal. The change had a very disturbing effect on children's sleeping habits as it would not get dark until 10 or 10.30 in the evening. It was difficult for children to go to bed early enough to have sufficient sleep. This had inevitable repercussions on standards of learning and school performance. Difficulties were also encountered with children leaving for school in complete darkness. Moreover, insurance companies in Portugal reported a rise in the number of accidents.[50]

However, Lord Tanlaw (sponsor of the *Lighter Evenings Bill*), stated that:

> … Portugal did not do that to save daylight. Lisbon is at latitude 37 degrees north and its citizens enjoy at least 10.5 hours of brilliant daylight during the Christmas period, so they do not need daylight saving. I believe the reason Portugal stays in Western European Time has something to do with working hours but nothing to do with daylight saving.[51]

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49 *Time to change the clocks?*, NHS Inform, 26 November 2010
50 HL Deb 24 Mar 2006 c479
51 HL Deb 24 Mar 2006 c462

Dr Elizabeth Garnsey, in evidence to the Energy and Climate Change Committee, indicated that the Portuguese example was not relevant to the debate in the UK as the country is "so much further south that they already have the advantage of that extra hour of daylight at peak time… even without putting the clocks forward". Dr Garnsey thought that it was "a good illustration of how there is always more vocal objection to change than there is support for it, because when the change was made in Portugal everyone who didn't like it protested, whereas those who did like it didn't lobby".[52]

5 Organisations supporting the 10:10 Lighter Later campaign, a clock change experiment, or a debate on the issue

Supporting debate on the issue:

NFUs

VISIT SCOTLAND

Expressly supporting the bill but not part of the Lighter Later campaign:

The Kennel Club

AGE UK

Saga

The Caravan Club

The Road Traffic Committee of the Magistrates' Association

Organisations supporting Lighter Later:

National Galleries of Scotland

EBICO

Business Enterprise Scotland

10:10

The AA

Brake

The Chartered Institution of Highways & Transportation

GEM Motoring Assist

The Parliamentary Advisory Council for Transport Safety

The Royal Society for the Prevention of Accidents

Parentline Plus

Greenpeace

38 degrees

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[52] Energy and Climate Change Committee, *Effect on energy usage of extending British Summer Time*, 19 November 2010, HC 562-i

People Developments

New Economics Foundation

100 Months

Tourism Alliance

Balppa

CIHT (Chartered Institute of Highways and Transportation)

Sustrans

British Beer & Pub Association

Living Streets

BRADA

PIRC (Public Interest Research Centre)

Road Safety GB

National Association for Environmental Education (UK)

Travelodge

Brighter Future

Northumberland Wildlife Trust

Cumbria Tourism

Institute of Advanced Motoring

CCPR

Sporting organisations that co-signed a CCPR letter supporting the aims of the Bill:

England and Wales Cricket Board

Cobra Martial Arts Association

Special Olympics Great Britain

Federation of Yorkshire Sport

Army Cadet Force Association

Institute of Groundsmanship

British Equestrian Federation

London Volleyball Association

British Kite Surfing Association

Business in Sport and Leisure

Amateur Swimming Association

Energize Shropshire, Telford & Wrekin

Lawn Tennis Association

Clay Pigeon Shooting Association

Exercise Movement and Dance Partnership

Professional Footballers' Association

English Schools Cricket Association

BATD- British Association of Teachers of Dancing

Northern Counties Dance Teachers Association

Volunteers In Sport West Midlands

The Model Power Boat Association

English Indoor Bowling Association

Royal Life Saving Society UK

Central Council of Physical Recreation

Football Association

The British Horse Society

Parkour UK

Angling Trust

Rounders England

British Gymnastics

Auto-Cycle Union

Stoolball England

Police Sport UK

Baseball Softball UK[53]

[53] Personal communication with Rebecca Harris MP's office, 30 November 2011