

Title: Compulsory purchase powers for the change of use of existing gas pipelines Lead department or agency: DECC Other departments or agencies:	Impact Assessment (IA)
	IA No: DECC0056
	Date: 01/06/2011
	Stage: Final
	Source of intervention: Domestic
	Type of measure: Primary legislation
Contact for enquiries: Selcan Kayihan 0300 068 6913	

Summary: Intervention and Options

What is the problem under consideration? Why is government intervention necessary?

The problem being considered here is the barrier to the reuse of existing high pressure gas pipelines to transport carbon dioxide, where it is economically, technically and environmentally preferable to do so, in comparison to the construction and use of a new pipeline.

Currently, a developer needs to get voluntary agreement from all landowners along the length of the pipeline in order to change the use of a pipeline, whereas the developer can use Compulsory Purchase Orders if they intend to construct a new pipeline.

Government intervention is necessary because there is a disparity between the powers that are available to a developer in circumstances when they are constructing a new pipeline and those available when they intend to change the use of an existing pipeline. As a result, Carbon Capture and Storage (CCS) developers won't always be able to use existing pipelines to transport carbon dioxide where it is preferable to do so. This is an inefficient outcome.

What are the policy objectives and the intended effects?

The policy objective is to ensure that CCS is delivered in a cost effective manner. The intended effect is the removal of the disparity in the ability of a developer to obtain rights to transport carbon dioxide between reusing existing pipelines and the construction of new pipelines, whilst protecting the rights of the landowners to ensure a fair return through the compulsory purchase process. This will allow developers to choose the best option for transporting carbon dioxide.

What policy options have been considered, including any alternatives to regulation? Please justify preferred option (further details in Evidence Base)

Option 1 (do nothing)
 Regulations remain as they are

Option 2 (preferred option)
 Extension of compulsory purchase powers for existing pipelines on change of use to carbon dioxide transportation only

Option 3
 Extension of compulsory purchase powers for existing pipelines on change of use to any gas, for example hydrogen.

Option 2 is the preferred option as it addresses the identified discrepancy directly, but does not extend the concession beyond the currently identified need.

Will the policy be reviewed? It will be reviewed. **If applicable, set review date:** 2018

What is the basis for this review? Duty to review. **If applicable, set sunset clause date:**

Are there arrangements in place that will allow a systematic collection of monitoring information for future policy review?	Yes
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SELECT SIGNATORY Sign-off For final proposal stage Impact Assessments:

I have read the Impact Assessment and I am satisfied that (a) it represents a fair and reasonable view of the expected costs, benefits and impact of the policy, and (b) the benefits justify the costs.

Signed by the responsible SELECT SIGNATORY: _____ Date: _____

Summary: Analysis and Evidence

Policy Option 1

Description:

Regulations remain as they are ('do nothing' option)

Price Base Year 2009 ¹	PV Base Year 2009	Time Period Years 10	Net Benefit (Present Value (PV)) (£m) 0		
			Low:	High:	Best Estimate: 0

COSTS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low			
High			
Best Estimate	0		0

Description and scale of key monetised costs by 'main affected groups'

N/A – please see assumptions box

Other key non-monetised costs by 'main affected groups'

BENEFITS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low			
High			
Best Estimate	0		0

Description and scale of key monetised benefits by 'main affected groups'

N/A – please see assumptions box

Other key non-monetised benefits by 'main affected groups'

Key assumptions/sensitivities/risks

Discount rate (%) 3.5

The additional costs and benefits are estimated in comparison to a baseline of status quo, including the envisaged future effects of regulation remaining as they are. The 'do nothing' option is the same as the baseline, hence this policy option has no additional costs or benefits.

Direct impact on business (Equivalent Annual) £m):			In scope of OIOO?	Measure qualifies as
Costs: 0	Benefits: 0	Net: 0	Yes/No	NA

¹ The base year is 2009 to maintain consistency with the analysis in the Impact Assessment for the other policies contained in the Energy Bill 2011

Enforcement, Implementation and Wider Impacts

What is the geographic coverage of the policy/option?		Great Britain			
From what date will the policy be implemented?		Q3 2011			
Which organisation(s) will enforce the policy?		N/A			
What is the annual change in enforcement cost (£m)?		N/A			
Does enforcement comply with Hampton principles?		Yes			
Does implementation go beyond minimum EU requirements?		N/A			
What is the CO ₂ equivalent change in greenhouse gas emissions? (Million tonnes CO ₂ equivalent)		Traded:		Non-traded:	
Does the proposal have an impact on competition?		No			
What proportion (%) of Total PV costs/benefits is directly attributable to primary legislation, if applicable?		Costs: N/A		Benefits: N/A	
Distribution of annual cost (%) by organisation size (excl. Transition) (Constant Price)	Micro	< 20	Small	Medium	Large
Are any of these organisations exempt?	No	No	No	No	No

Specific Impact Tests: Checklist

Set out in the table below where information on any SITs undertaken as part of the analysis of the policy options can be found in the evidence base. For guidance on how to complete each test, double-click on the link for the guidance provided by the relevant department.

Please note this checklist is not intended to list each and every statutory consideration that departments should take into account when deciding which policy option to follow. It is the responsibility of departments to make sure that their duties are complied with.

Does your policy option/proposal have an impact on...?	Impact	Page ref within IA
Statutory equality duties² Statutory Equality Duties Impact Test guidance	No	
Economic impacts		
Competition Competition Assessment Impact Test guidance	No	
Small firms Small Firms Impact Test guidance	No	
Environmental impacts		
Greenhouse gas assessment Greenhouse Gas Assessment Impact Test guidance	No	
Wider environmental issues Wider Environmental Issues Impact Test guidance	No	
Social impacts		
Health and well-being Health and Well-being Impact Test guidance	No	
Human rights Human Rights Impact Test guidance	Yes	
Justice system Justice Impact Test guidance	No	
Rural proofing Rural Proofing Impact Test guidance	No	
Sustainable development Sustainable Development Impact Test guidance	No	

² Public bodies including Whitehall departments are required to consider the impact of their policies and measures on race, disability and gender. It is intended to extend this consideration requirement under the Equality Act 2010 to cover age, sexual orientation, religion or belief and gender reassignment from April 2011 (to Great Britain only). The Toolkit provides advice on statutory equality duties for public authorities with a remit in Northern Ireland.

Description:

Extension of compulsory purchase powers for existing pipelines on change of use to carbon dioxide transportation only

Price Base Year 2009 ¹	PV Base Year 2009	Time Period Years 10	Net Benefit (Present Value (PV)) (£m) £37m	
		Low:	High:	Best Estimate: £37m

COSTS (£m)	Total Transition (Constant Price) Years		Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low				
High				
Best Estimate		0		0

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

N/A – please see assumptions box

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

Landowners who don’t voluntarily agree to a change in the use of pipeline due to opposing the transport of carbon dioxide will lose welfare, but under the status quo the CCS developer would build a new pipeline in the same location so there is no change in welfare as carbon dioxide will still be transported beneath their land. Landowners who oppose the transport of carbon dioxide in pipelines that have had their use changed, i.e. would prefer new pipelines to transport carbon dioxide, will lose welfare.

The payment received by the landowner for a compulsory purchase order for a change in use of pipeline (under this policy) is less than that received for a compulsory purchase order to construct a new pipeline (under the status quo), but this balanced out by the developer paying less for the compulsory purchase order, so there is no overall additional cost. It is not possible to estimate the payment for a compulsory purchase order for a change in use of pipeline at this stage as it has never happened before.

BENEFITS (£m)	Total Transition (Constant Price) Years		Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low				
High				
Best Estimate		£44m		£37m

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

The benefit is the reduced cost from the first UK CCS demonstration project² being able to change the use of existing pipelines, where it is economically, technically and environmentally preferable to do so, where not all landowners along the length of the pipeline voluntarily agree to the change of use. Under the status quo a new pipeline would have to be built to transport carbon dioxide. Changing the use of an existing pipeline is less costly than constructing a new pipeline per km. The benefit is to the government as it will fund the demos.

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

Reduced environmental cost as the use of pipelines will be changed instead of new pipelines being constructed where there was a failure to reach voluntary agreement with the landowner and it is economically, technically and environmentally preferable to change the use of an existing pipe.

Key assumptions/sensitivities/risks

Discount rate (%) 3.5

There are no overall additional costs to this policy. There is a transfer between the developer and the landowner when a payment is made for the Servitude. Also legal costs for Compulsory Purchase Orders will be incurred under the status quo (for the construction of new pipeline) and this policy option (for the change of use of existing pipeline), so again there is no additional cost.

Direct impact on business (Equivalent Annual) £m):			In scope of OIOO?	Measure qualifies as
Costs: 0	Benefits: 0	Net: 0	Yes	OUT

¹ The base year is 2009 to maintain consistency with the analysis in the Impact Assessment for the other policies contained in the Energy Bill 2011

² Although the UK CCS Demonstration Programme is made up of four demonstration projects, the estimates of the benefits are only based on the first UK CCS demonstration project as the competition for the first demonstration project is underway, whereas the competition for demos 2-4 has not been launched yet.

Enforcement, Implementation and Wider Impacts

What is the geographic coverage of the policy/option?	Great Britain				
From what date will the policy be implemented?	Q3 2011				
Which organisation(s) will enforce the policy?	Courts				
What is the annual change in enforcement cost (£m)?	0				
Does enforcement comply with Hampton principles?	Yes				
Does implementation go beyond minimum EU requirements?	N/A				
What is the CO ₂ equivalent change in greenhouse gas emissions? (Million tonnes CO ₂ equivalent)	Traded:		Non-traded:		
Does the proposal have an impact on competition?	No				
What proportion (%) of Total PV costs/benefits is directly attributable to primary legislation, if applicable?	Costs: 100		Benefits: 100		
Distribution of annual cost (%) by organisation size (excl. Transition) (Constant Price)	Micro	< 20	Small	Medium	Large
Are any of these organisations exempt?	No	No	No	No	No

Specific Impact Tests: Checklist

Set out in the table below where information on any SITs undertaken as part of the analysis of the policy options can be found in the evidence base. For guidance on how to complete each test, double-click on the link for the guidance provided by the relevant department.

Please note this checklist is not intended to list each and every statutory consideration that departments should take into account when deciding which policy option to follow. It is the responsibility of departments to make sure that their duties are complied with.

Does your policy option/proposal have an impact on...?	Impact	Page ref within IA
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Greenhouse gas assessment Greenhouse Gas Assessment Impact Test guidance	No	
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Health and well-being Health and Well-being Impact Test guidance	No	
Human rights Human Rights Impact Test guidance	No	
Justice system Justice Impact Test guidance	No	
Rural proofing Rural Proofing Impact Test guidance	No	
Sustainable development Sustainable Development Impact Test guidance	No	

³ Public bodies including Whitehall departments are required to consider the impact of their policies and measures on race, disability and gender. It is intended to extend this consideration requirement under the Equality Act 2010 to cover age, sexual orientation, religion or belief and gender reassignment from April 2011 (to Great Britain only). The Toolkit provides advice on statutory equality duties for public authorities with a remit in Northern Ireland.

Description:

Extension of compulsory purchase powers for existing pipelines on change of use to any gas, for example hydrogen.

Price Base Year 2009 ¹	PV Base Year 2009	Time Period Years 10	Net Benefit (Present Value (PV)) (£m) £37m		
		Low:	High:	Best Estimate: £37m	

COSTS (£m)	Total Transition (Constant Price) Years		Average Annual (excl. Transition) (Constant Price)		Total Cost (Present Value)
Low					
High					
Best Estimate		0			0

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

N/A – please see assumptions box

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

Landowners who don't voluntarily agree to a change in the use of pipeline due to opposing the transport of carbon dioxide will lose welfare, but under the status quo the CCS developer would build a new pipeline in the same location so there is no change in welfare as carbon dioxide will still be transported beneath their land. Landowners who oppose the transport of carbon dioxide in pipelines that have had their use changed, i.e. would prefer new pipelines to transport carbon dioxide, will lose welfare.

The payment received by the landowner for a compulsory purchase order for a change in use of pipeline (under this policy) is less than that received for a compulsory purchase order to construct a new pipeline (under the status quo), but this balanced out by the developer paying less for the compulsory purchase order, so there is no overall additional cost. It is not possible to estimate the payment for a compulsory purchase order for a change in use of pipeline at this stage as it has never happened before.

BENEFITS (£m)	Total Transition (Constant Price) Years		Average Annual (excl. Transition) (Constant Price)		Total Benefit (Present Value)
Low					
High					
Best Estimate		£44			£37

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

The benefit is the reduced cost from the first UK CCS demonstration project² being able to change the use of existing pipelines, where it is economically, technically and environmentally preferable to do so, where not all landowners along the length of the pipeline voluntarily agreed to the change of use. Under the status quo a new pipeline would have to be built to transport carbon dioxide. Changing the use of an existing pipeline is less costly than constructing a new pipeline per km. The benefit is to the government as it will fund the demos.

The additional benefit is the same as that in policy option 2. This because there is no identified need for the change of use of gases other than carbon dioxide within the timeframe the policy is analysed.

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

Reduced environmental cost as the use of pipelines will be changed instead of new pipelines being constructed where there was a failure to reach voluntary agreement with the landowner and it is economically, technically and environmentally preferable to change the use of an existing pipe.

Key assumptions/sensitivities/risks

Discount rate (%) 3.5

There are no overall additional costs to this policy. There is a transfer between the developer and the landowner when a payment is made for the Servitude. Also legal costs for Compulsory Purchase Orders will be incurred under the status quo (for the construction of new pipeline) and this policy option (for the change of use of existing pipeline), so again there is no additional cost.

Direct impact on business (Equivalent Annual) £m):			In scope of OIOO?	Measure qualifies as
Costs: 0	Benefits: 0	Net: 0	Yes	OUT

¹ The base year is 2009 to maintain consistency with the analysis in the Impact Assessment for the other policies contained in the Energy Bill 2011

² Although the UK CCS Demonstration Programme is made up of four demonstration projects, the estimates of the benefits are only based on the first UK CCS demonstration project as the competition for the first demonstration project is underway, whereas the competition for demos 2-4 has not been launched yet.

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Which organisation(s) will enforce the policy?	Courts				
What is the annual change in enforcement cost (£m)?	0				
Does enforcement comply with Hampton principles?	Yes				
Does implementation go beyond minimum EU requirements?	N/A				
What is the CO ₂ equivalent change in greenhouse gas emissions? (Million tonnes CO ₂ equivalent)	Traded:		Non-traded:		
Does the proposal have an impact on competition?	No				
What proportion (%) of Total PV costs/benefits is directly attributable to primary legislation, if applicable?	Costs: 100		Benefits: 100		
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Human rights Human Rights Impact Test guidance	No	
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Sustainable development Sustainable Development Impact Test guidance	No	

³ Public bodies including Whitehall departments are required to consider the impact of their policies and measures on race, disability and gender. It is intended to extend this consideration requirement under the Equality Act 2010 to cover age, sexual orientation, religion or belief and gender reassignment from April 2011 (to Great Britain only). The Toolkit provides advice on statutory equality duties for public authorities with a remit in Northern Ireland.

Evidence Base (for summary sheets) – Notes

Use this space to set out the relevant references, evidence, analysis and detailed narrative from which you have generated your policy options or proposal. Please fill in **References** section.

References

Include the links to relevant legislation and publications, such as public impact assessments of earlier stages (e.g. Consultation, Final, Enactment) and those of the matching IN or OUTs measures.

No.	Legislation or publication
1	Pipelines Act 1962
2	
3	
4	

+ Add another row

Evidence Base

Ensure that the information in this section provides clear evidence of the information provided in the summary pages of this form (recommended maximum of 30 pages). Complete the **Annual profile of monetised costs and benefits** (transition and recurring) below over the life of the preferred policy (use the spreadsheet attached if the period is longer than 10 years).

The spreadsheet also contains an emission changes table that you will need to fill in if your measure has an impact on greenhouse gas emissions.

Annual profile of monetised costs and benefits* - (£m) constant prices

	Y ₀	Y ₁	Y ₂	Y ₃	Y ₄	Y ₅	Y ₆	Y ₇	Y ₈	Y ₉
Transition costs	0	0	0	0	0	0	0	0	0	0
Annual recurring cost	0	0	0	0	0	0	0	0	0	0
Total annual costs	0	0	0	0	0	0	0	0	0	0
Transition benefits	0	0	0	0	0	44	0	0	0	0
Annual recurring benefits	0	0	0	0	0	0	0	0	0	0
Total annual benefits	0	0	0	0	0	44	0	0	0	0

* For non-monetised benefits please see summary pages and main evidence base section



Microsoft Office
Excel Worksheet

Evidence Base (for summary sheets)

Problem under consideration

The problem being considered here is the barrier to the reuse of existing high pressure gas pipelines to transport carbon dioxide, where it is economically, technically and environmentally preferable to do so, in comparison to the construction and use of a new pipeline.

The Government is committed to reducing emissions by 80% compared to 1990 levels by 2050. Carbon Capture and Storage (CCS) has a key part to play in the low-carbon generation of electricity as it will allow the continued use of fossil fuels for the generation of electricity while reducing carbon dioxide emissions. Therefore it is important that government enable the CCS industry to develop in a timely and cost effective way.

CCS is a technology that will enter into commercial demonstration phase within the next few years. The Government has committed to commercial-scale support the construction and operation of four CCS demonstration projects as part of its contribution to the global effort to develop CCS as a deployable technology.

CCS involves three main steps:

- 1 Capturing carbon dioxide;
- 1 Transporting the captured carbon dioxide to storage sites;
- 2 Permanent storage in deep geological formations.

CCS will require the transportation of carbon dioxide through pipelines. Pipelines constructed for the purpose of transporting gases at high pressure could, subject to availability, safety, technical and economic considerations, also be used to transport carbon dioxide. The majority of such pipelines in the UK are currently used to transport natural gas. However, due to current regulations pipelines can't always be easily used to transport gases that they were not originally intended to.

In common with all other developments such as roads and railways, bodies undertaking the construction of pipelines are able to obtain land and property through Compulsory Purchase Rights. These rights enable developers to acquire land, or in the case of pipelines to acquire the use of land¹, where the land owner may not be willing to sell or grant access on an entirely voluntary basis. These rights are available for those constructing new pipelines, including those used for carbon dioxide transport.

Once rights are obtained (on either a compulsory or voluntary basis) they are expressed in private agreements between the owner of the pipeline and the landowner. These private agreements (Servitudes) will typically be expressed in terms of permission to convey the gas for which the pipeline was originally constructed.

However, if a developer wanted to use an existing pipeline to transport a different gas to that specified in the original agreement, they would have no such powers to facilitate a change of use to an existing pipeline. A developer would therefore have to rely entirely on voluntary agreements with the landowners.

This creates a disparity between the powers that are available to a developer in circumstances when they are constructing a new pipeline and those available when they intend to change the use of an existing pipeline.

¹ With regards to the construction of pipelines, in general the landowner does not lose permanent access to the land

As CCS develops there is likely to be the need for considerable investment in pipelines on a national and regional scale. As part of this investment it is likely that developers will look for opportunities to reuse suitable existing pipelines no longer needed for their original purpose. Indeed, the UK's first potential CCS demonstration project is proposing to reuse approximately 300km of pipeline previously used to transport natural gas as part of the National Transmission System.

The number of separate agreements that will need to be executed in order to secure the change of use of a pipeline will depend on the location and scale of the pipeline. A project that is part of the UK CCS Demonstration programme that intends to do this could potentially need hundreds of separate changes to servitudes, each of which will require separate agreement. In the absence of a compulsory purchase instrument, every one of those landowners would need to voluntarily execute a new servitude.

There are a number of reasons for which owners or occupiers may refuse to agree to a change of use on an entirely voluntary basis, including: inertia, illness, family disputes over an Estate, difficulties in persuading a mortgagee to sign; dissatisfaction with the financial package on offer; moral or political objection; difficulties in tracing those needing to execute; long term holiday absence or a desire (in the case of the last to sign up) to extract a ransom payment.

There is an additional complication. Any CCS pipeline development is likely to involve the use of established and new pipelines. In such circumstances it would be impossible for the developer to commit to the major capital investment needed for the new build (for which compulsory purchase powers exist), which are likely to involve a major capital outlay, unless they can be certain that it will also be possible to obtain rights to convert the established pipeline to alternative use.

Rationale for Intervention

The rationale for intervention is the presence of the disparity in the ability of a developer to obtain rights to transport carbon dioxide between reusing existing pipelines and the construction of new pipelines. This disparity can lead to inefficiencies.

In the absence of intervention, when a change of use of an existing pipeline is economically, technically and environmentally preferable to the construction and use of a new pipeline, voluntary agreements with all landowners along the length of the pipeline may not be reached. This could result in the developer constructing and building a new pipe for at least part of the pipeline, which is inefficient.

Alternatively, the developer may decide not to go ahead with the project, if they fail to reach voluntary agreements with all landowners, since the only alternative to allow the project to proceed – building a new pipe for at least part of the pipeline – could make the overall cost of the project prohibitive.

Policy Objective

The policy objective is to ensure that CCS is delivered in a cost effective manner. The intended effect is the removal of the disparity in the ability of a developer to obtain rights to transport carbon dioxide between reusing existing pipelines and the construction of new pipelines, whilst protecting the rights of the landowner to ensure a fair return through the compulsory purchase process. This will allow developers to choose the best option for transporting carbon dioxide.

Description of Options

The main options considered include:

Option 1 ('do nothing' option)

Developers looking to reuse pipelines for the purpose of carbon dioxide transport would be required to secure a modification to servitudes on a voluntary basis without the possibility of compulsory rights to do so.

Option 2 (preferred option)

Extension of compulsory purchase powers for existing pipelines on a change of use for carbon dioxide transportation only.

This is the preferred option. It addresses the identified discrepancy directly, but does not extend the concession beyond the currently identified need.

Option 3

Extension of compulsory purchase powers for existing pipelines on a change of use for the transportation of any gas, for example hydrogen.

Whilst there may be opportunities to reuse redundant pipelines for reasons other than carbon dioxide transportation, it is not clear that there is demand for such reuse at the present time.

Costs and Benefits of the options

The costs and benefits presented here are measured against a baseline of the status quo, including the envisaged future effects of regulations remaining as they are, i.e. the disparity in the ability of a developer to obtain rights to transport carbon dioxide between reusing existing pipelines and the construction of new pipelines continues.

In order to calculate the additional costs and benefits of each of the options, the assumption is that under the status quo, when developers wish to change the use of an existing pipeline, a proportion of landowners will reach a voluntary agreement with the developer while the remaining landowners will not². In those instances, the developer will construct and use a new pipeline³ in place of the length of existing pipeline that it has not been possible to change the use of. As it has been assumed that the pipeline will be in the same place, and hence the Servitude will be with the same landowner, it is assumed that the new pipeline will be constructed using a Compulsory Purchase order.

While, as previously mentioned, any CCS pipeline development is likely to involve the use of established and new pipelines, this analysis will concentrate on the use of established pipelines (either the whole length of the proposed pipeline or part of the pipeline). This is where the problem lies and where the policy is focused. Hence, it is assumed that the proportion of landowners who reach voluntary agreement with the developer is the same under the status quo and other policy options.

² National Grid estimate that less than 10% of landowners will not voluntarily agree

³ While it is possible that the developer will not go ahead with the project if it is unable to reach voluntary agreements with all landowners, this scenario is not used to measure additional costs and benefits of policy options against.

Option 1 ('do nothing' option)

This option does not address the problem that has been identified. This option would be likely to be perceived as Government failure to create equality in the powers that are available to developers wishing to construct and use new pipelines and to developers wishing to change the use of existing pipelines.

In some instances where it is economically, technically and environmentally preferable for a change of use of existing pipes to be used in comparison to the construction and use of a new pipe, developers may not be able to do so if voluntary agreements can't be reached. This will lead to an inefficient outcome.

The 'do nothing' option is the same as the baseline, hence this option does not lead to any additional costs or benefits.

Option 2 (preferred option)

This option removes the disparity between the ability of a CCS developer to obtain rights to transport carbon dioxide by changing the use of existing pipelines and to transport carbon dioxide by constructing a new pipeline.

This will be achieved whilst protecting the rights of the landowner to ensure a fair return through the compulsory purchase process⁴.

The scope of this policy is limited to instances where the intended change of use is to transport carbon dioxide. This will mean that CCS developers will have the same powers available to them whether they intend to transport carbon dioxide using a new pipeline or by change of use of an existing pipeline.

It is assumed that this policy will only have additional costs and benefits for developers intending to change the use of existing pipelines, for at least part of the pipeline, where it is economically, technically and environmentally preferable to do so, compared with the construction and use of a new pipeline.

This is because developers will primarily consider the technical specifications of the pipeline needed to accommodate their anticipated demand for carbon dioxide transport. Only if an existing pipeline meets the specifications would it be an option for the CCS developer to pursue. Hence existing pipelines that are not suitable to such a change of use will not be affected by this policy. The existence of Compulsory Purchase powers does not provide an incentive for CCS developers to change the use of existing pipelines, instead of constructing and using new pipelines where it is preferable to do so.

The predicted outcome of the policy is that those projects that intend to change the use of existing pipelines will now be able to do so with the use of Compulsory Purchase orders for the parts of the pipeline where they wouldn't have been able to proceed, under the status quo, due to failure to reach voluntary agreements with the landowners.

Benefits

There is an overall additional benefit to this policy.

The benefit is the saving resulting from the difference between the cost of constructing part of a new pipeline where a landowner does not voluntarily agree to a change of use and the cost of changing the use of the existing pipeline in question. The estimated cost of constructing a new

⁴ Please see Risks and Assumptions

pipe is £3.2 million per kilometre⁵, whereas it is £0.29 million per kilometre⁶ change the use of an existing pipe.

It is not possible to know how many CCS projects will want to change the use of existing pipelines in the future. However, as stated previously it is known that the UK's first potential CCS demonstration project is proposing to reuse approximately 300km of pipeline previously used to transport natural gas. This real life example is used to estimate the costs and benefits of this option.

If it assumed that 5%⁷ of landowners along the length of the pipeline will not voluntarily agree to the change of use of the pipeline. If it is then assumed that each landowner owns equal parts of land along the length of the pipeline, the policy will allow the CCS developer to change the use of 15km of pipeline instead of having to construct 15km of new pipeline using Compulsory Purchase orders. Therefore the benefit is estimated to be £44 million⁸. It is the government that will benefit from this avoided cost as it is funding the demonstration programme.

It is assumed that change of use of pipelines will be secured in the year before operation of the CCS plants so to calculate the additional benefits of this policy we assume that the benefits will be realised in 2014 as the first demonstration project is expected to begin operation in 2015. The total discounted additional benefit is estimated to be £37 million (2009 base year⁹).

If the other three demonstration projects that form part of the UK CSS demonstration programme intend to use existing pipelines and not all landowners voluntarily agree to the change in use of the pipeline, they will be able to use compulsory purchase powers under this option. This will increase the benefits of this option. At this stage in the development of the other three demonstration projects it is not possible to quantify what the benefits might be, or even if there would be benefits.

The development of CCS at a commercial scale could also possibly increase the benefits from this policy. Again, it is not possible to quantify what the benefits might be, or even if there would be benefits at this stage and as commercial deployment of CCS is not expected until the 2020s it falls outside the timeframe for the analysis in this IA.

There will be environmental benefits from the change of use of existing 15km pipeline compared to constructing 15km of new pipeline for each project. The change of use of an existing pipeline that comes within the terms of this reform will not require any access to the land above and beyond the usual level of maintenance associated with the pipeline being used to transport the gas it was originally intended to carry. However, it has not been possible to estimate this environmental benefit.

Costs

Legal costs will also be incurred by the developer and the landowner in the case of a compulsory purchase order. Yet since these costs are assumed to be incurred under the status quo (where it is assumed there is a Compulsory Purchase order for the construction of a new pipeline) and under this policy option (where it is assumed there is a Compulsory Purchase order for the change of use of an existing pipeline), there is no additional cost.

Any landowners that do not voluntarily agree to the change in use of pipeline, on the basis of objecting to the transport of carbon dioxide under their land, will lose welfare (non-monetary) by

⁵ Estimate from National Grid

⁶ Estimate from National Grid

⁷ Based on estimates from National Grid; less than 10% of landowners will not voluntarily agree

⁸ £3.2m-£0.29m = £2.91m x 15

⁹ 2009 base year used to remain consistency with the analysis in the other Impact Assessments that form part of the Energy Bill 2011

the change in use of pipeline under the compulsory purchase order. However the counterfactual is that the CCS developer would have built a new pipeline to transport carbon dioxide at the same location. Carbon dioxide would still be transported in pipelines below their land so again they would experience the same loss in welfare. There is no additional cost in relation to the loss of welfare in instances such as these.

However there may be instances where a landowner does not oppose the transport of carbon dioxide under their land, but opposes the transport of carbon dioxide in a pipeline that has had its use changed, i.e. they would prefer a new pipeline to transport the carbon dioxide. In such instances there would be a loss in welfare (non-monetary) for those particular landowners, under this policy option compared to the counterfactual.

As for risks arising from changing the use of existing pipelines to transporting carbon dioxide, existing legislation already controls the impact of health and safety and land-use planning. This policy option will have no impact on these arrangements. So, for example a change of use, may require planning permission under the Town and Country Planning Act 1990 (or the Town and Country Planning (Scotland) Acts 1972 and 1997). Health and safety aspects of pipelines are regulated by the Health and Safety Executive under the Pipeline Safety Regulations 1996 and these arrangements will continue unchanged.

Transfers

Under this policy option, the CCS developer will make a payment for the Servitude with the landowner for the change of use of existing pipeline under a Compulsory Purchase order. This is a transfer. However, under the status quo, the developer would have had to make a payment for the Servitude with the same landowner for the construction of a new pipeline. This would also be a transfer.

National Grid estimate that a landowner would receive £38/metre for a Servitude for the construction of a new pipeline acquired by the use of a Compulsory Purchase order. Only a percentage of this (i.e. less) would be paid for a change of use of an existing pipe.

This suggests that under this policy option, the developer will gain, while the landowner will lose in monetary terms compared to the status quo and the assumptions under the status quo. However, these payments are transfers¹⁰ and so overall there are no additional costs or benefits from the payment for Servitudes.

It also should be noted that the difference in the money paid for a Servitude for the construction of a new pipeline acquired by the use of a Compulsory Purchase order and the money paid for a Servitude for the change of use of an existing pipeline acquired by the use of a Compulsory Purchase order reflects the difference in the inconvenience (i.e. having their land dug up) for the landowner.

Option 3

Whilst this option, like option 2, removes the disparity in the ability of a developer to obtain rights to transport carbon dioxide between reusing existing pipelines and the construction of new pipelines, the scope has been widened to include change of use to gases other than carbon dioxide, for example hydrogen.

Hydrogen may have a big part to play in the transport sector as the UK moves towards its target to reduce emissions by 80% below 1990 levels. However the current need for the change of

¹⁰ Under the status quo, the developer incur a cost of £38/m for a Compulsory Purchase order to construct a pipeline, while the landowner will gain £38/m, hence the net effect is zero. Under policy option 2, the developer incurs a cost of less than £38/m for a Compulsory Purchase order to change the use of an existing pipeline, while the landowner will gain the same amount, hence the net effect is zero.

use of existing pipes to transport other gases has not been identified and so this policy option goes further than the current need. There is uncertain demand for the use of existing pipes to transport gases other than carbon dioxide. Nor have we established whether the existing stock of pipeline capacity would be technically suitable for other alternative uses.

More work would need to be done to assess the demand and understand the implications of allowing the change of use of existing pipes to transport hydrogen.

The additional costs and benefits of this policy option is analysed over ten years, as was policy option 2. The hydrogen industry is not expected to develop very much over the next 10 years and so the demand for the change of use of existing pipelines is expected to be the same as presented in option 2. Hence the additional costs and benefits will be the same as those in option 2.

Summary of the quantitative estimates of the costs and benefits of the options

	Costs	Benefits (central estimate)	Net Benefit (central estimate)
<u>Option 1</u> (undiscounted)	0	0	0
<u>Option 1</u> (discounted)	0	0	0
<u>Option 2</u> (undiscounted)	0	£44m	£44m
<u>Option 2</u> (discounted)	0	£37m	£37m
<u>Option 3</u> (undiscounted)	0	£44m	£44m
<u>Option 3</u> (discounted)	0	£37m	£37m

Risks and Assumptions

Dominant Market Position for Existing Pipeline Owners

The main risk we have identified is that by creating a legislative framework that removes the discrepancy against reuse we are potentially creating a dominant market position for the owner of existing high pressure pipelines. The majority of those pipelines are part of the high pressure National Gas Transmission System, owned and operated by National Grid and regulated by OFGEM. There are over 6000km of such pipelines. There are also other onshore UK pipelines which transport substances at high pressures, and could potentially be used to transport carbon dioxide, including in Scotland and northern England a 1,200km ethylene pipeline network.

The ability of National Grid to capitalise on its existing asset base will only materialise if the divestment is approved by OFGEM including the return the gas consumer is paid for divestment from the regulated asset base.

The impact of this benefit to National Grid is also reduced by the fact that it is not only pipelines that are part of the National Transmission System which will come within this modification.

Favour Reuse for Carbon Dioxide compared with other uses

By removing this discrepancy for reuse of high pressure pipelines for carbon dioxide only, we are removing a barrier to one possible reuse of these pipelines but not others. We are therefore creating a preference for reuse for carbon dioxide transport, rather than for any other gas. In reality the suitability of a pipeline for particular gases will depend on a number of factors including demand, the capacity and technical specification of the pipeline, its route and safety considerations. The discrepancy to be rectified by this policy measure will only be important if these other factors line-up. We know of no other instance where there is active consideration of the reuse of high pressure gas pipelines for any purpose other than carbon dioxide. We are therefore limiting this intervention to directly address the identified discrepancy.

Favour the use of pipelines for carbon dioxide transport, rather than the primary purpose.

Addressing this discrepancy removes a barrier to possible change of use of a high pressure gas pipeline to use for carbon dioxide transport. It does not impact on the decisions of the owner of an existing suitable pipeline to convert that pipeline to alternative use. In cases where the redundant pipeline forms part of the regulated gas transportation network, then that decision also needs to be agreed by the independent regulator who will take a decision based on the needs of the transmission system and securing a proper return for gas consumers.

Unreasonable Treatment of Landowners

The intended reform enables the compulsory agreement to a change of use of a high pressure gas pipeline. Compulsory purchase powers are provided to enable project developers to acquire land rights to carry out a function which Parliament has decided is in the public interest. Under the Pipelines Act 1962 a person is entitled to apply to the Minister for powers to grant a compulsory right order, but only in circumstances where they are proposing to execute works. The Act also requires that where compulsory rights are conferred then if a person suffers loss by reason of damage to, or disturbance in the enjoyment of, any land, he shall be entitled to compensation as set out in the Land Compensation Act. The same procedures would be adopted in extending these provisions to cover the compulsory acquisition of rights to transport gases other than those covered in existing servitudes.

One-in, One-out

The preferred policy option can be seen as a simplifying measure as it allows the use of the best available resources. Hence the benefits to business identified can be classed as an OUT. However as the estimates of the costs and benefits for the preferred policy are based on the first UK CCS demonstration project, which the government will fund, the OUT is valued at zero.

Summary of preferred option

The preferred option is policy option 2: extension of compulsory purchase powers for existing pipelines on a change of use for carbon dioxide transportation only.

This is the preferred option as it addresses the identified discrepancy directly and has a positive net present value, but does not extend the concession beyond the currently identified need.

While option 3 has the same net present value as option 2 it goes beyond the current identified need.

Annexes

Annex 1: Post Implementation Review (PIR) Plan

<p>Basis of the review: [The basis of the review could be statutory (forming part of the legislation), i.e. a sunset clause or a duty to review, or there could be a political commitment to review (PIR)];</p> <p>Policy comment</p>
<p>Review objective: [Is it intended as a proportionate check that regulation is operating as expected to tackle the problem of concern?; or as a wider exploration of the policy approach taken?; or as a link from policy objective to outcome?]</p> <p>1) Ensure the legislation reflects a proper balance between the interests of the different parties (developers and landowners/occupiers)</p> <p>2) Ensure the legislation is succeeding in its purpose of not favouring new build over the appropriate re-use of pipelines for the purpose of CO2 transport.</p>
<p>Review approach and rationale: [e.g. describe here the review approach (in-depth evaluation, scope review of monitoring data, scan of stakeholder views, etc.) and the rationale that made choosing such an approach]</p> <p>Informal review of stakeholders' views which would allow us to assess the impact on those affected by the legislation</p>
<p>Baseline: [The current (baseline) position against which the change introduced by the legislation can be measured]</p> <p>Measured against an assumed baseline of no pipeline re-use for CO2 transport as it may not be possible to secure voluntary agreement along the whole length of the pipeline.</p>
<p>Success criteria: [Criteria showing achievement of the policy objectives as set out in the final impact assessment; criteria for modifying or replacing the policy if it does not achieve its objectives]</p> <p>All suitable opportunities for the re-use of pipelines to transport CO2 are successful (unless they failed for a reason unrelated to this legislation and the problem it's addressing e.g. failure in another part of the CCS project chain)</p>
<p>Monitoring information arrangements: [Provide further details of the planned/existing arrangements in place that will allow a systematic collection of monitoring information for future policy review]</p> <p>Discussion and information gathering with CCS developers in the context of the CCS demonstration programme</p>
<p>Reasons for not planning a review: [If there is no plan to do a PIR please provide reasons here]</p> <p>N/A</p>

Add annexes here.