

# SHADOW FLICKER EFFECT

## DECC CONSULTATION QUESTIONNAIRE

All information provided in this questionnaire will be treated as strictly confidential and will not be passed to any third parties. Analysis based on the information provided will be referred to in generic trends, and no site-specific or company-specific details will be published.

The closing date for questionnaire submissions is:  
WEDNESDAY 15<sup>th</sup> DECEMBER 2010

Please complete any sections of this questionnaire that are relevant to your area of expertise or experience.

**Q1: Has your company / organisation been involved in preparing any aspect of a shadow flicker assessment for a proposed onshore wind energy development in the UK?**

 Yes No

**Q2: Has your company / organisation presented evidence relating to shadow flicker effect at a Public Local Inquiry?**

 Yes No

**Q3: Is your company / organisation involved with 'Operation and Maintenance' of an operational onshore wind farm / wind turbine?**

 Yes No

**Q4: Is your company / organisation involved in any other way with investigation of shadow flicker effects relating to onshore wind energy developments?**

 Yes No

## CONTACT DETAILS

<b>Name</b>	<input type="text"/>
<b>Organisation Name</b>	<input type="text"/>
<b>Position / Job Title</b>	<input type="text"/>
<b>Email Address</b>	<input type="text"/>
<b>Telephone Number</b>	<input type="text"/>
<b>Postal Address</b>	<input type="text"/>

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## GENERAL ASSESSMENT CRITERIA

### '10 x Rotor Diameter' rule-of-thumb

Companion Guide to PPS22 states:

"Shadow flicker can be mitigated by siting wind turbines at sufficient distance from residences likely to be affected. Flicker effects have been proven to occur only within ten rotor diameters of a turbine. Therefore if the turbine has 80m diameter blades, the potential shadow flicker effect could be felt up to 800m from a turbine."

**Q5: When assessing shadow flicker impact, do you:**

Please select

<b>Other</b>	

**Q6: Do you assess shadow flicker effects:**

Please select

<b>Other</b>	

**Q7: Do you assess shadow flicker effects on:**

Please tick

- Road users?
- Footpath users?
- Bridleway users?
- Non-residential properties (eg. offices, warehouses, etc)?
- Other receptors? - *please specify in 'Other'*

<b>Other</b>	
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**Q8: When preparing a planning application, what mitigation strategies for predicted shadow flicker effects do you propose?**

Please tick

- Careful site design to minimise / eliminate impact
- Turbine shut-down strategy
- Installation of blinds
- Landscaping / vegetation screening
- Other - *please specify in 'Other' box*

<b>Other</b>	
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## COMPUTER MODELS

**Q9: What software package(s) do you use to assess shadow flicker?**

<b>Please specify</b>	
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**Q10: Do you find this software satisfactory for preparing a shadow flicker assessment that is of an appropriate standard to support a planning application?**

 Yes

 No

**Q11: If 'No', please elaborate below:**

<b>Please elaborate</b>	
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**Q12: When preparing shadow flicker assessments, do you input field data or site-specific environmental data into your model?**

 Yes

 No

**Q13: If 'Yes', please elaborate below:**

<b>Please elaborate</b>	
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### 'Worst Case Scenario'

The 'Worst Case Scenario' assumes:

- Continuous sunshine during daylight hours;
- Continually rotating turbine blades;
- No vegetation or other obstacles are screening the receptor;
- The wind turbine rotor plane is always perpendicular to the receptor and sun.

**Q14: Do your shadow flicker assessments adhere to the 'Worst Case Scenario' detailed above?**

 Yes

 No

**Q15: If 'No', please specify how they differ and your reason for adopting an alternative approach.**

<b>Please specify</b>	
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## OPERATIONAL EXPERIENCE

**Q16: Does your company own or manage any operational wind energy developments?**

 Yes

 No

**Q17: If 'Yes', please specify your company's role.**

Please select

<b>Other</b>	

**PLEASE NOTE**

As with all information provided in this questionnaire, data collected in the following section will be treated as strictly confidential. Analysis based on the information provided will be referred to in generic trends, and no site-specific or company-specific details will be published.

**Q18: Have you received (or are you aware of) any complaints raised in relation to shadow flicker effect at any of your operational wind energy developments?**

 Yes

 No

**Q19: If 'Yes', please provide: details of the project(s) including the wind farm in question; details of the complaint(s) including document references; the circumstances triggering the complaint; and details of how the complaint was resolved.**

<b>Please comment</b>	
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**Q20: What mitigation strategies for shadow flicker effects have been implemented on your operational wind energy developments?**

Please tick

- Careful site design to minimise / eliminate impact
- Turbine shut-down strategy
- Installation of blinds
- Landscaping / vegetation screening
- Other - *please specify in 'Other' box*

<b>Other</b>	
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**Q21: How successful have these mitigation strategies been in practice? Please provide as much detail as possible in the text box below.**

<b>Please comment</b>	
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**Q22: Have you observed shadow flicker effect occurring outside buildings, or in other circumstances different from those set out in current guidance (which states "shadow flicker only occurs inside buildings where the flicker appears through a narrow window opening)?**

 Yes

 No

**Q23: If 'Yes', please elaborate below.**

<b>Please elaborate</b>	
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## CURRENT GUIDANCE

Link to: 'Companion Guide to Planning Policy Statement 22 (PPS22)' shadow flicker text

### '10 x Rotor Diameter' rule-of-thumb

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 "Shadow flicker can be mitigated by siting wind turbines at sufficient distance from residences likely to be affected. Flicker effects have been proven to occur only within ten rotor diameters of a turbine. Therefore if the turbine has 80m diameter blades, the potential shadow flicker effect could be felt up to 800m from a turbine."

**Q24: Do you consider the '10 x Rotor Diameter' rule an appropriate assessment area for shadow flicker reports?**

 Yes

 No

**Q25: Would an alternative calculation method for the assessment area be preferable to the '10 x Rotor Diameter' rule?**

Please select

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<b>Other</b>	
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### Shadow Flicker Effect outside properties

Companion Guide to PPS22 states:  
 "[Shadow Flicker Effect] only occurs inside buildings where the flicker appears through a narrow window opening."

**Q26: Should shadow flicker assessments be limited to the interior of residential buildings?**

 Yes

 No

**Q27: If 'No', should the following receptors be included in shadow flicker assessments?**

Please tick

- Road users
- Footpath users
- Bridleway users
- Non-residential properties (eg. offices, warehouses, etc)
- Other receptors - *please specify in 'Other' box*

<b>Other</b>	
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**Q28: Please elaborate on your reason(s) for including additional receptors in shadow flicker assessments.**

<b>Please elaborate</b>	
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### Quantitative Guidance

In recent years, regulations have emerged in other countries proposing a quantitative approach to assessing shadow flicker. This approach sets a limit on the duration that a receptor can be exposed to shadow flicker effect.

**Q29: What is your opinion on the value of adopting quantitative guidance on shadow flicker effect?**

<b>Please comment</b>	
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**Q30: Please include any other comments you have relating to amendments / omissions / additions to current UK guidance.**

<b>Please comment</b>	
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## THANK YOU

Thank you for completing this form. Your assistance is greatly appreciated.

If you have any additional comments, please include them in the text box below.

<p>Please comment</p>	
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**Q31: Would you be happy for a representative to contact you to discuss elements of this questionnaire further?**

Yes

No

**Q32: What is your preferred method of contact?**

Telephone

Email

Post

Please continue to next page...

## SUBMIT FORM

**Option 1 - Please submit form by pressing the following button:**

**SUBMIT**

*(A blank Outlook message will open automatically)*

**Option 2 - If 'Submit' button above does not work, please click 'Save As', attach the saved PDF document to an email, and send to [DECC@pbworld.com](mailto:DECC@pbworld.com)**

**Option 3 - If 'Save As' method fails, please click 'Print to PDF', attach the saved PDF document to an email, and send to [DECC@pbworld.com](mailto:DECC@pbworld.com)**

**Option 4 -If the above options fail, please email us at [DECC@pbworld.com](mailto:DECC@pbworld.com), explain the problem and we will resolve the issue as soon as possible.**

End of form.