

## Appendix 15.1 – Steps Involved in a CCR Assessment in EIA and Determining Significance of Impacts

Table 1: Steps Involved in a CCR Assessment in EIA

|                       |                               |                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
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| Pre-Application Stage | Pre-EIA                       | <b>Step 0:</b> Building climate resilience into the project         | <ul style="list-style-type: none"> <li>Consider the resilience of the project to climate change impacts during the design stage, including early phases of design. This can be done through delivery of a climate change risk assessment, or by following the principles set out in Steps 2 – 6 below;</li> <li>Identify appropriate mitigation measures (to reduce the effect of impacts) and incorporate these into design as necessary; and</li> <li>Reflect the outcome of design for resilience in the Environmental Statement under the description of the project/alternatives studied.</li> </ul> |
|                       | Scoping                       | <b>Step 1:</b> Scoping CC Requirements for the EIA                  | <ul style="list-style-type: none"> <li>Identify the scale and scope of the project, including design life;</li> <li>Identify the climate change projections for use in the assessment;</li> <li>Identify key climatic variables relevant to the project;</li> <li>Identify likely effects; and</li> <li>Engage with and discuss the above with stakeholders/regulators.</li> </ul>                                                                                                                                                                                                                        |
|                       | EIA / Environmental Statement | <b>Step 2:</b> Defining the future (climate) baseline               | <ul style="list-style-type: none"> <li>Define baseline conditions under historic/existing climate conditions;</li> <li>Define future baseline, using selected climate change projections. This will summarise projected changes in key climate variables (e.g. increase in rainfall, increase in mean summer temperature, wind strength); and</li> <li>Produce summary of projected future climate changes for non-climate expert audience.</li> </ul>                                                                                                                                                    |
|                       |                               | <b>Step 3:</b> Identifying and determining sensitivity of receptors | <ul style="list-style-type: none"> <li>Identify receptors within the elements of the project;</li> <li>Evaluate the selected receptors to identify their susceptibility and</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                    |

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|  |  |                                                                          | <p>vulnerability as well as their importance; and</p> <ul style="list-style-type: none"> <li>• Evaluate the selected receptors whether the susceptibility and vulnerability as well as their value/ importance changes with future climatic projections identified in Step 2.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|  |  | <b>Step 4:</b> Reviewing and determining magnitude of the effect         | <ul style="list-style-type: none"> <li>• Review effects likely to arise from the project identified at Step 2;</li> <li>• Consider probability and consequence to determine the magnitude of the effect; and</li> <li>• Consider the magnitude of the effects identified by other topics and evaluate whether the probability and/or consequence of the effect changes with future climatic projections.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                          |
|  |  | <b>Step 5:</b> Determination of significance                             | <ul style="list-style-type: none"> <li>• Use the sensitivity of receptors identified at Step 3 and the magnitude of the effect identified at Step 4 alongside professional judgement to determine whether the effect is significant/the degree of effect;</li> <li>• Assess the significance of the project effects under the existing climate baseline using standard methodologies for each relevant environmental topic;</li> <li>• Assess the in-combination climate impact applying the significance criteria developed by the relevant environmental topics and using the outcome of the evaluation of sensitivity of receptors/magnitude of effect identified at Step 3 and Step 4; and</li> <li>• Determine whether the significance/degree of the effect remains the same or changes with the future climate conditions.</li> </ul> |
|  |  | <b>Step 6:</b> Developing additional adaptation/ EIA mitigation measures | <ul style="list-style-type: none"> <li>• Identify additional (secondary) mitigation measures against timescale of future likely significant effects;</li> <li>• Fixed elements for full duration need mitigation built in based on predicted climate effects (less desirable);</li> <li>• Project elements subject to maintenance/future change can have mitigation set for future implementation</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                 |

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|--|--|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  |  |  | <p>based on actual climate effects being observed (more desirable); and</p> <ul style="list-style-type: none"> <li>• Prepare, if appropriate, a Climate Change Resilience and Adaptation Plan that covers the above and includes allocation of responsibilities and funding streams.</li> </ul> |
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**Table 2: Criteria for Determining a Receptor's Susceptibility to Climate Change**

| Susceptibility Category | Description (probability and frequency of occurrence)                                                                                                                                          |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| High Susceptibility     | Receptor has no ability to withstand/not be substantially altered by the projected changes to the existing/prevaling climatic factors (e.g. lose much of its original function and form).      |
| Moderate Susceptibility | Receptor has some limited ability to withstand/not be altered by the projected changes to the existing/prevaling climatic conditions (e.g. retain elements of its original function and form). |
| Low Susceptibility      | Receptor has the ability to withstand/not be altered much by the projected changes to the existing/prevaling climatic factors (e.g. retain much of its original function and form).            |

**Table 3: Criteria for Determining a Receptor's Vulnerability to Climate Change**

| Vulnerability Category | Description (probability and frequency of occurrence)                                                                                                                                                                                                                  |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| High Vulnerability     | Receptor is directly dependent on existing/prevaling climatic factors and reliant on these specific existing climate conditions continuing in future (e.g. river flows and groundwater level) or only able to tolerate a very limited variation in climate conditions. |
| Moderate Vulnerability | Receptor is dependent on some climatic factors but able to tolerate a range of conditions (e.g. a species which has a wide geographic range across the entire UK but is not found in southern Spain).                                                                  |
| Low Vulnerability      | Climatic factors have little influence on the receptors (consider whether it is justifiable to assess such receptors further within the context of EIA – i.e. it is likely that such issues should have been excluded through the EIA scoping process).                |

Table 4: Criteria for Likelihood Categories

| Likelihood Category | Description (probability and frequency of occurrence)                                                                                        |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| Very High           | The event occurs multiple times during the lifetime of the project (60 years), e.g. approximately annually, typically 60 events.             |
| High                | The event occurs several times during the lifetime of the project (60 years), e.g. approximately once every five years, typically 12 events. |
| Medium              | The event occurs limited times during the lifetime of the project (60 years), e.g. approximately once every 15 years, typically 4 events.    |
| Low                 | The event occurs during the lifetime of the project (60 years), e.g. once in 60 years.                                                       |
| Very Low            | The event may occur once during the lifetime of the project (60 years).                                                                      |

Table 5: Criteria for Magnitude and Change

| Consequence of Impact | Description (probability and frequency of occurrence)                                                                                                                                                                                                      |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Very Large Adverse    | National-level (or greater) disruption. For example, a disruption to strategic transport route(s) lasting more than 1 week.                                                                                                                                |
| Large Adverse         | National-level disruption. For example, a disruption to strategic transport route(s) lasting more than 1 day but less than 1 week.<br>OR<br>Regional level disruption. For example, a disruption to strategic transport route(s) lasting more than 1 week. |
| Moderate Adverse      | Regional level disruption. For example, a disruption to strategic transport route(s) lasting more than 1 day but less than 1 week.                                                                                                                         |
| Minor Adverse         | Regional level disruption. For example, a disruption to strategic transport route(s) lasting less than 1 day.                                                                                                                                              |
| Negligible            | Local level disruption. For example, a disruption to an isolated section of a strategic transport route lasting less than 1 day.                                                                                                                           |