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| <b>Location: Moneypoint Power Station, Co. Clare</b>              |  | <b>Unique ID: 275488</b><br>(from PFRA database) |  |
| <b>Initial OPW Designation</b>                                    | <b>APSR</b> <input type="checkbox"/>   | <b>AFRR</b> <input type="checkbox"/>             | <b>IRR</b> <input checked="" type="checkbox"/> |
| <b>Co-ordinates</b>   | <b>Easting: 103700</b>   | <b>Northing: 151500</b>                          |  |
| <b>River / Catchment / Sub-catchment</b>                          | <b>Shannon Estuary</b>   |  |  |
| <b>Type of Flooding / Flood Risk</b><br>(identify all that apply) | <b>Fluvial non-tidal</b> <input type="checkbox"/> <b>Fluvial tidal</b> <input type="checkbox"/> <b>Coastal</b> <input checked="" type="checkbox"/> |  |  |

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| <b>Stage 1: Desktop Review</b>  |  |
| <p><b>1.1 Flood History (include review of Floodmaps.ie)</b></p>                | <p><b>River Flow Path</b></p> <p>At this location the Shannon Estuary is several km wide, fully influenced by the tide rather than fluvial flows, and is therefore noted as being vulnerable to “coastal” flooding rather than “fluvial tidal” flooding.</p> <p>ESB Moneypoint has (1979) a coal burning station on the north side of the Shannon estuary with a deep water berthing facility.</p> <p><b>Flood event records</b></p> <p>There are no flood records listed for Moneypoint Power Station i.e. the townland of Carrowdotia South.</p> |
| <p><b>1.2 Relevant information on flooding issues from OPW and LA staff</b></p> | <p><b>PFRA database comments (<i>in italics</i>):</b></p> <p><b>OPW comments</b><br/><i>In Shannon docs as IRR.</i></p> <p><b>LA comments</b><br/><i>No comments</i></p> <p><b>Note:</b> Moneypoint Power Station is listed in the PFRA database, but there is no score included in the database, and no further comments on flood risk.</p> <p><b>Meeting / discussion summary comments:</b></p> <p><b>OPW comments</b><br/>No comments</p> <p><b>LA comments</b><br/>No comments</p>   |

| 1.4 PFRA Data   |   |                          |           |
|---|---|--------------------------|-----------|
| 1.4.1 PFRA hazard mapping   | PFRA mapping available in GIS layer:      Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |                          |           |
|   | PFRA mapping included on FRR map:      Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>    |                          |           |
| <b>Note:</b> Whilst the PFRA mapping is available for the area (for fluvial flooding), there are no watercourses within the vicinity of the power station, and hence, there is no indicative flooded area shown on the FRR map. |   |                          |           |
| 1.4.2 Summary of Principal Receptors  | Type  | FRI score (if available) |           |
|   | <b>Note:</b> Moneypoint power station has no score included in the PFRA database.                             |                          | N/A       |
| 1.7 Stage 1 Evaluation  | Aspect  | Clearly IRR              | Uncertain |
|   | Flood History (1.1)   |                          | x         |
|   | OPW / LA Information (1.2)  |                          | x         |
|   | PFRA Evaluation (1.4)   |                          | x         |
|   | Overall Desktop Evaluation<br>(if any above aspect is uncertain then overall designation is uncertain)        |                          | x         |
| 1.8 Proposed level of assessment for Stage 2 site visits  | Level A Site Visit  | X                        |           |
|   | Level B Site Visit  |                          |           |

| Stage 2: Site Inspection  |  | Level A Assessment                       |         |  |
|---|--|--|---------|--|
| Date and Time of Inspection   |  | Date: 07/09/11                           |         |  |
|   |  | Time: 12:30                              |         |  |
| Names of inspection team<br>(including OPW/LA staff if present)   |  | Iain Blackwell                           |         |  |
|   |  | Peter Smyth                              |         |  |
|   |  |  |         |  |
|   |  |  |         |  |
| 2.1 Ground-truthing of Hazard Mapping   | Fluvial non-tidal <input type="checkbox"/> Fluvial tidal <input type="checkbox"/> Coastal <input type="checkbox"/> Not available <input checked="" type="checkbox"/> |  |         |  |
|   | No hazard mapping for coastal flooding for ground truthing.  |  |         |  |
| 2.2 Spot check ground-truthing of selected receptor vulnerability<br><br>(also note any key receptors noted during visit that are not identified by PFRA) | Receptor Type  | Location description (if not obvious)    | Exists? | Overall Vulnerability / Risk (L / M / H) |
|   | Coal fired power station   | On northern shore of the Shannon Estuary | Y       | L  |
| 2.3 Local knowledge - on-site comments<br><br>(OPW, LA and any info volunteered by local residents during visit)  | No on site comments  |  |         |  |
| 2.4 Comments on hydraulic constrictions (bridges, etc.) and conveyance routes   | Any potential flood risk is from the Shannon Estuary, and therefore there are no hydraulic constrictions or conveyance routes.                                       |  |         |  |

| 2.5 SVRS Assessment Matrix   |   |   |   |         |      |   |   |     |          |   |   |   |
|--|---|---|---|---------|------|---|---|-----|----------|---|---|---|
| <b>Weightings:</b><br><b>A - x1 - reasonable expectation of flooding</b><br><b>B - x2 - high expectation of flooding or flooding is tidal (any risk)</b><br><b>C - x5 - risk to life</b> |   |   |   |         |      |   |   |     |          |   |   |   |
| Approx. Number   | 1 to 4  |   |   | 5 to 20 |      |   |   | >20 |          |   |   |   |
| Weighting  |   | A | B | C       |      | A | B | C   |          | A | B | C |
| Property (domestic)  | 10  |   |   |         | 100  |   |   |     | 200      |   |   |   |
| Property (small retail or business)  | 20  |   |   |         | 200  |   |   |     | 400      |   |   |   |
| Property (large retail or business)  | 50  |   |   |         | 500  |   |   |     | 1000     |   |   |   |
| Road or Rail Infrastructure  | 30  |   |   |         | 300  |   |   |     | 600      |   |   |   |
| <b>Critical Infrastructure (local)</b><br>[hospital, school, police/fire/ambulance station, substation, WTW/WWTW, gov bldg, other (specify)]   | 50  |   |   |         | 500  |   |   |     | 1000     |   |   |   |
| <b>Critical Infrastructure (national importance)</b>   | 250   |   |   |         | 1000 |   |   |     | 2000     |   |   |   |
| <b>Cultural Heritage Site</b>  | 20  |   |   |         | 200  |   |   |     | 400      |   |   |   |
| <b>Environmental Designated Site</b>   | 20  |   |   |         | 200  |   |   |     | 400      |   |   |   |
| <b>Hazardous Substances Site</b>   | 50  |   |   |         | 500  |   |   |     | 1000     |   |   |   |
| <b>Total SVRS</b>  |   |   |   |         |      |   |   |     | <b>0</b> |   |   |   |
| 2.6 Defence Assets   |   |   |   |         |      |   |   |     |          |   |   |   |
| <b>Formal and Informal Flood Defence Assets</b><br><i>(include effective and ineffective assets to inform asset survey and potential mitigation measures)</i>                            | <b>Open Channel Watercourses</b><br>Man-made river channel <input type="checkbox"/> Flood relief channel <input type="checkbox"/> Canal <input type="checkbox"/><br>Mill leat <input type="checkbox"/> Drainage channels / back drains <input type="checkbox"/>   |   |   |         |      |   |   |     |          |   |   |   |
|  | <b>Bridges and Culvert crossings</b><br>Single Arch bridge <input type="checkbox"/> Multi-Arch bridge <input type="checkbox"/><br>Single Span bridge <input type="checkbox"/> Multi-Span bridge <input type="checkbox"/><br>Box culvert(s) <input type="checkbox"/> Pipe culvert(s) <input type="checkbox"/> Arch Culvert(s) <input type="checkbox"/> |   |   |         |      |   |   |     |          |   |   |   |
|  | <b>Culverted Watercourses</b> (culvert length is greater than just a crossing)<br>Box culvert(s) <input type="checkbox"/> Pipe culvert(s) <input type="checkbox"/> Arch Culvert(s) <input type="checkbox"/> Irregular Culvert(s) <input type="checkbox"/>   |   |   |         |      |   |   |     |          |   |   |   |
|  | <b>Walls and Embankments</b><br>Embankment(s) <input type="checkbox"/> Raised wall(s) <input type="checkbox"/> Retaining wall(s) <input type="checkbox"/>   |   |   |         |      |   |   |     |          |   |   |   |
|  | <b>Control Structures – weirs, gates, dams</b><br>Fixed crest weir <input type="checkbox"/> Adjustable weir <input type="checkbox"/> Dam / Barrage <input type="checkbox"/><br>Sluice gates <input type="checkbox"/> Lock gates <input type="checkbox"/> Radial gates <input type="checkbox"/>  |   |   |         |      |   |   |     |          |   |   |   |
|  | <b>Storage</b><br>On-line storage (natural) <input type="checkbox"/> On-line storage (artificial) <input type="checkbox"/> Off-line storage <input type="checkbox"/>  |   |   |         |      |   |   |     |          |   |   |   |

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|  | <p><b>Outfalls</b><br/>         Flapped outfall(s) into watercourse <input type="checkbox"/>      Unflapped outfall(s) into watercourse <input type="checkbox"/><br/> <i>i.e. from smaller watercourses, drains etc. into river / estuary / sea</i><br/>         Tidal flap(s) <input type="checkbox"/>      Tidal sluice(s) <input type="checkbox"/><br/> <i>i.e. from main watercourse into estuary / sea</i></p> <p><b>Other</b><br/>         Pumping Station <input type="checkbox"/>      Erosion Protection <input checked="" type="checkbox"/>      Sand Dunes <input type="checkbox"/></p> <p><b>Additional notes (if required):</b><br/>         The site is very exposed to wave action, particularly from the west and southwest. There is erosion protection (rather than flood defences) on the shoreline along the frontage of the site comprising a rock revetment. However, the ground level at the site itself is well above the estuary high tide level.</p> |
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| <b>2.8 Initial Potential Mitigation Measures</b> |  |
| <b>Non-structural measures</b>                   | Planning and Development control <input type="checkbox"/><br>Sustainable Urban Drainage Systems <input type="checkbox"/><br>Flood forecasting / warning <input type="checkbox"/><br>Change in Operating Procedures for water level control: <input type="checkbox"/><br>Public awareness campaign <input type="checkbox"/><br>Individual property protection <input type="checkbox"/><br>Land use management <input type="checkbox"/>  |
| <b>Structural measures</b>                       | <p><b>Strategic development management for floodplain development:</b> <input type="checkbox"/><br/> <i>(integration of measures into strategic development proposals)</i></p> <p><b>Storage:</b>                      On-line <input type="checkbox"/>                      Off-line <input type="checkbox"/></p> <p><b>Flow diversion:</b> Flood relief channel <input type="checkbox"/>                      Flood relief culvert <input type="checkbox"/></p> <p><b>Increase conveyance:</b> Bridge works <input type="checkbox"/>                      Channel works <input type="checkbox"/>                      Floodplain <input type="checkbox"/></p> <p><b>Flood defences:</b>                      Walls <input type="checkbox"/>                      Embankments <input type="checkbox"/></p> <p><b>Localised works:</b>                      Defence raising <input type="checkbox"/>                      In-fill gaps <input type="checkbox"/>                      Trash screen <input type="checkbox"/></p> <p><b>Maintenance works:</b> Culvert / channel clearance <input type="checkbox"/>                      Asset maintenance <input type="checkbox"/></p> <p><b>Relocation of properties:</b> <input type="checkbox"/></p> <p><b>Improve existing defences:</b> <input type="checkbox"/> (describe)</p> <p><b>Other (describe):</b></p> |

|   |  |                  |                              |                      |
|---|--|------------------|------------------------------|----------------------|
| <b>Outcomes</b>   |  |                  |                              |                      |
| <b>PFRA Designation</b>   | APSR <input type="checkbox"/> not an APSR <input type="checkbox"/> IRR <input checked="" type="checkbox"/>   |                  | FRI Score: N/A               |                      |
| <b>Site Ground-truthing of PFRA Assessment (hazard mapping and receptors)</b> | <b>High Confidence (good)</b>  | <b>Uncertain</b> | <b>Low Confidence (poor)</b> | <b>Not available</b> |
|   |  |                  |                              | <b>X</b>             |
| <b>Site Visit Review Score</b>  | 0  |                  |                              |                      |
| <b>Recommended Designation</b>  | APSR <input type="checkbox"/> not an APSR <input checked="" type="checkbox"/> IRR <input type="checkbox"/>   |                  |                              |                      |
| <b>Summary Comments (if required)</b>   | There is no known historical evidence of flooding at Moneypoint Power Station. The site visit confirmed that the ground level at the lowest point on the site (the eastern end) is approximately 3.5m above high spring tide levels. Assets are located at even higher levels, and therefore there is not a significant flood risk at the site. The site is recommended NOT to be designated as an IRR (or an APSR). |                  |                              |                      |



**Photo 1:** The eastern end of the site, with ground levels around 3.5m above high spring tide levels.



**Photo 2:** General view of Money point Power Station from the estuary frontage.



**Photo 3:** Rock armour along the frontage at the site. The high spring tide level (shown by the red line on the rock armour) is seen to be a few metres below the ground level at the site.



**Photo 4:** Aerial view of Moneypoint Power Station looking towards the east and northeast. The foreground shows the majority of the site is set well back from the estuary frontage, with the land rising inland.

