Environment and Sustainability Committee
E&S(4)-11-12 paper 2

CONSEQUENCES OF ENERGY POLICY AND TRANSPORTATION OF WINDFARM COMPONENTS

1. It is recognised that there are many who are concerned by the relatively short term impact of the development of these sites in terms of potential increases in traffic congestion; as well as the longer term impact in terms of the built environment and the visual impact that these developments may have.

2. The consequences of development means considerable numbers of additional Abnormal Indivisible Loads (AILs) on the transport network, this increased volume of AIL traffic will unavoidably have an impact on communities and businesses within those communities.

3. The Welsh Government is committed to increasing the capacity of sustainable and renewable green energy in Wales. The development of wind farms will become the largest infrastructure project ever seen in Wales.

4. The Welsh Government's Planning for Renewable Energy Technical Advice Note 8 (TAN 8), 2005, developed with partners and stakeholders, assists the development of wind power in Wales by identifying 7 Strategic Search Areas (SSAs) (Annex A) as being suitable for onshore wind farm development owing to their location, altitude and land availability.

5. Of the 7 SSAs, one is in North Wales (SSA A); three are in Mid Wales (SSA B, C, and D) and three are in South Wales (SSA E, F, and G). These SSAs provide the industry with sites where there would be no general planning objection to the principle of wind farm development.

6. Delivery of wind turbine components and construction materials will be key to wind farm developments and as such strategic potential delivery routes have been identified on the existing road networks in Wales and England, the majority of which are trunk roads.

7. The renewable energy industry's umbrella group, Renewable UK, is co-ordinating a unified approach with the developers of wind farm sites. Since 2005, the industry has come forward with proposals for 47 new wind farm sites in the 7 SSAs.

8. Getting Abnormal Indivisible Loads (AILs) to site is a significant undertaking. The transport routes used will involve a combination of motorways, trunk roads and the local authority road network. The highways authorities responsible for these are the Welsh Government, the UK Highways Agency, and Local Authorities in both England and Wales.

9. In order to support the Welsh Government's wider energy policy the Transport Department has been working to secure the transport objective of ensuring that abnormal loads for wind turbine construction can be brought to sites safely and to the appropriate timescales whilst reducing the impact on:

    - communities, towns and villages along the access routes;
    - businesses and the local economies;
    - traffic and other road users and pedestrians; and
    - the environment.

TRANSPORTATION APPROACH

10. The impact of wind turbines for many communities will be felt most during the construction phase when components and construction materials are being delivered to site. Wind farm sites are generally in fairly remote upland areas, which present transport access difficulties.

11. As these components are generally imported by sea, the distance they travel can be significant. It is very likely that the bulk of movements to North and Mid Wales will be from Ellesmere Port and those to South Wales from Newport or Swansea.

12. The specialist vehicles used for transporting wind turbines (AILs) can move slowly on roads, sometimes as low as speeds of 10 to 20 mph. The wind turbine parts that the AILs are transporting can be very long, wide, heavy or a combination of all and will therefore require police escorts.

13. The length of these loads can be a problem on junctions and corners and some components can be twice the width of a normal articulated lorry. This would present a significant problem on all roads except motorways and some dual carriageways due to overhanging on carriageways and footways, which could compromise safety of "following" or "oncoming" vehicles.

14. As such, in 2007 a series of individual studies and reports was commissioned to consider the impact of moving wind farm components, including trial runs. Earlier this year a technical report was also commissioned to:

    - prepare Strategic Route Option plans for four Strategic Search areas;
    - highlight highway constraints;
    - illustrate required mitigation works; develop general principles; and
    - develop a base model for wind turbine delivery.

15. Preparation of a base model to estimate the potential demand that each highway link will receive in order to satisfy planned deliveries is also underway. This model does not prioritise deliveries, as the industry will need to manage this aspect.

16. Potential access constraints will require upgrade and improvements in order to facilitate the anticipated transport movements. The Welsh Government will work with Local Authorities and Developers to ensure that these are appropriately funded to meet developers needs, it is envisaged that the majority, if not all funding, will be provided by developers.

PLANNING

17. As with any other development, it is for developers to demonstrate the adequacy of their transport proposals, and for authorities, such as Welsh Government to offer advice and direction.

18. The Welsh Government is working with key stakeholders, including windfarm developers, local highway authorities and the Police Forces to develop a strategic Traffic Management Plan (sTMP) to facilitate wind turbine movements process.

19. The industry appointed consultants, Gronmij in summer 2011 to develop a sTMP. This covers the transport route between Ellesmere Port docks and the nearest points on the trunk road network to access sites in SSA B and C in mid Wales.

20. It will be necessary for developers to provide a site specific Traffic Management Plan (TMP) to cover the route from the trunk road to the site. The first draft of the sTMP was issued in October 2011. Welsh Government officials subsequently met with Gronmij and provided detailed comments. A revised sTMP is expected mid March 2012.

21. Renewable UK Cymru has commissioned the development of a spreadsheet based assessment tool, hereafter referred to as the Transport Tool, which will be used to control the timing of turbine component delivery into mid Wales. It will complement the sTMP by providing an estimate of the total number of abnormal load deliveries and the duration of the delivery period but will not be a material planning consideration. The sTMP will be reviewed on completion of the Transport Tool to ensure consistency between the two documents, if required.

22. The Welsh Government has commissioned a study to investigate options to manage the movement of abnormal loads associated with turbine component delivery to all SSAs in Wales. There are areas of overlap in scope between the sTMP and the Welsh Government's strategic study and consultation with the Welsh Government's consultant has been undertaken.

23. An Environmental Statement and site specific TMP written in the context of the sMTP will need to be submitted for each planning application for the relevant planning authority to consider.

24. Planning Division within Welsh Government wrote to all Local Planning Authorities in April 2009 clarifying the requirements for Environmental

Impact Assessments in relation to the transportation aspects of applications for wind farm developments.

THE APPROACH

25. The Welsh Government has established a working group with all key stakeholders, including windfarm developers to establish the best means of bringing turbines and materials to site. These multi-party consultations are held periodically. Developers continue to engage their own transport consultants and haulage specialists to investigate and 'trial' the routes with specialist vehicles.

26. An ongoing dialogue with key stakeholders and affected parties has led to the development of Draft General Principles attached at Annex B.

ALTERNATIVE TRANSPORTATION MODES

27. A wide range of alternative options for bringing turbine parts to sites without the use of the highway network, or by reducing demand on the highway network included:

    - Bringing in turbine parts by air (aircraft, helicopter, airship)
    - Using water (new port or berthing facilities in Cardigan Bay, rivers and canals)
    - By land (railways and 'haul routes')
    - The possibilities of manufacturing sections on site

28. A study of these options concluded that only rail transport is potentially practicable, making use of the Cambrian Railway. This option is being investigated by the rail industry and will be pursued if it proves feasible and cost effective.

OTHER ENERGY INITIATIVES

29. Welsh Government are currently involved in discussions associated with on shore energy improvements i.e. the transportation of wind turbine components using the road network.

30. The proposed new power station at Wylfa known as Wylfa B, may potentially impact on the trunk road network. Construction of Wylfa B would generate increased traffic on the A55 and across Britannia Bridge, which will ultimately put increased pressure on this structure.

31. The long-term effects of Wylfa B on Britannia Bridge once operational will be minimal. However, Welsh Government is seeking opportunities to build energy related initiatives around the construction of Wylfa B, which will generate increased traffic movements in this area. The scale of these movements at this time is undeterminable.

32. The National Transport Plan has identified Britannia Bridge as a constraint on the network in both capacity and resilience terms.

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OPERATIONAL WINDFARMS

NO.	NAME	TURBINES	MW	TOTAL MW	YEAR
1	RHYD-Y-GROES	24	0.3	7.2	1992
2	TRYSGLWYN	14	0.4	5.6	1996
3	LLYN ALAW	34	0.6	20.4	1997
4	MOEL MAELOGEN (X3)	12	1.3	15.6	2008
5	HAFOTY UCHA 1	1	0.6	0.6	1998
5	HAFOTY UCHA 2 EXTENSION	2	0.85	1.7	2002
6	BRAICH DDU	3	1.5	4.5	2008
7	MYNYDD GORDDU	19	0.5	9.5	1998
8	RHEIDOL	8	0.3	2.4	1997
9	CEFN CROES	39	1.5	58.5	2005
10	LLANDINAM P+L	103	0.3	30.9	1992
11	BRYN TITLI	22	0.45	9.9	1994
12	LLANGWYRYFON REPOWERING	11	0.85	9.35	2004
13	BLAEN BOWI	3	1.3	3.9	2002
14	DYFFRYN BRODYN	11	0.5	5.5	1994
15	PARC CYNOG	5	0.72	3.6	2001
16	CASTLE PILL FARM	4 (3+1)	0.9	3.2	2009
17	TAFF ELY	20	0.45	9	1993

KEY:

- PREFERRED ACCESS ROUTES
- CORE TRUNK ROAD NETWORK
- OTHER TRUNK ROADS
- MOTORWAYS M53 / M56 / M4 / M48
- STRATEGIC SEARCH AREA
- NWTRA / MWTRA / SWTRA BOUNDARY
- WALES / ENGLAND BORDER
- COUNTY BOUNDARIES
- DOCKS
- 2 OPERATIONAL WINDFARMS
- 20 PLANNED WINDFARMS

PLANNED WINDFARMS

NO.	NAME	TURBINES	MW	TOTAL MW
18	LLYS DYMPER	14	3.0	42.0
19	CWM PENNANER	8	1.3	10.4
20	MYNYDD MYNYLLOD	25	3.0	75.0
21	WAUN GARNO	11	1.5	16.5
22	MYNYDD Y GWYNT	27	3.0	81.0
23	WEAR POINT	4	2.5	10
24	SHIPPING HILL PLANTATION	2	0.8	1.6
25	MYNYDD Y BETWS	15	2.3	37.5
26	MYNYDD Y GWRHYD	2	2	4
27	MERTHYR COMMON	5	2.3	11.5
28	FERNDALE	8	1.3	10.4
29	TRANE REN. ENERGY PARK	14	0.85	11.9
30	PANTY-WAL	14	3	42
31	MYNYDD PORTREF	11	0.85	9.35

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NOTES

DRAFT

WINDFARM ACCESS ROUTES

WINDFARMS OUTSIDE THE SEVEN STRATEGIC SEARCH AREAS

DRAWN BY	CHECKED BY	PASSED BY	DATE	SCALES @ A1	ISSUING OFFICE
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DRAWING NUMBER CS48936/FIGURE 3 | REV P1

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Draft – For discussion with partners

General Principles for the use of Trunk Roads in England and Wales for the movement of Abnormal Indivisible Loads (AILs) for wind farm construction in Strategic Search Areas A, B, C and D between 2011 and 2020

Status of the General Principles

These principles provide **guidance** for developers and the appropriate authorities as to how and when AIL convoys should be moved, and **do not over-ride** any statutory responsibilities or requirements of any of the **appropriate authorities**.

The '**appropriate authorities'** include the Welsh Assembly Government; the Highways Agency; the relevant County Councils; and the Police. The General Principles could apply also to the use of County Roads if County Councils agreed.

Purpose of the General Principles

One of the main purposes of these General Principles is to provide some agreement and **certainty** for developers, the appropriate authorities, the communities and the public about the way in which the movement of loads will be managed so that disruption is kept to a minimum; the public and businesses in the affected areas are aware of the movements, and of the characteristics of the movements; such that they are able to plan their activities and journeys so as to avoid, or experience minimal disruption from the movement of abnormal loads.

Transport Objective

To ensure that abnormal indivisible loads for wind farm development can be

a) **brought to site safely in the timescales appropriate for the developments;**

b) whilst **reducing the impact** on:

- **communities**, towns and villages on the routes;
- **businesses** and the local economies;
- **traffic** and other road users and pedestrians; and the
- **environment**;

and that the transport of loads complies with: policing requirements and other legal requirements; the agreed Traffic Management Plans and planning permissions; traffic regulations; health and safety and environmental considerations.

13 April 2011

General Principles for the use of Trunk Roads in England and Wales by abnormal indivisible loads (and associated plant e.g. large cranes) for wind farm construction in SSA A, B, C and D

1.0 Preferred Routes

1.1. **Ports of entry** - The northern port of entry for abnormal indivisible loads (AILs) for wind farm construction in Wales should be Ellesmere Port (or appropriate substitute); and the south west port of entry should be Swansea (or appropriate substitute); and the south east port of entry should be Newport (or appropriate substitute).

1.2. **Preferred routes to sites** – Abnormal indivisible loads (AILs) for wind farm construction will use the following routes to sites unless otherwise agreed with the appropriate authorities, and amended on this list.

This statement (as amended over time) is to clarify which routes can be used for abnormal loads for wind farms. Routes not on this list ***will not be used*** *(except in an emergency).*

Area	Routes – Only the following routes can be used by AILs for wind farms
A	***Clocaenog Forest*** *(from Ellesmere Port) via -* *1. M53, A55, A483 southwards, A5 westwards.* *2. (A route via the M53 and A55 westwards might be considered).*
B	***Carno North*** *(from Ellesmere Port) via -* *1. M53, A55, A483, A5, A483, Welshpool and A458 westwards.* *2. (A route via M53, A55, A483, A5, A483 to Newtown, A489 and A470 via Caersws might be considered also).*
C	***Newtown South*** *(from Ellesmere Port) via -* *1. M53, A55, A483, A5, A483 south to Newtown, A489 east, uc roads, A483.* *2. M53, A55, A483, A5, A483 to Newtown, proceed through Newtown on the A489 to A470 South (this is unlikely due to topography).* *3. (A route from Newport M4, A470, Brecon A479, A470, Builth Wells A483 is under consideration)* *4. A route from Newport M4, A470, A479, A438, Kington A4111, A44, A483 is under consideration).*
D	***Nant y Moch*** *(from Swansea)via -* *1. A483 east, M4 west, A40, A478, A487, A4120, A44 (from Ellesmere Port) via -* *2. M53, A483, A5, A483, A470, A44).*
E	***Pontardawe*** *(from Swansea) via -* *1. A483 east, M4 west, A465 north eastward or A4067*
F	***Coed Morgannwg*** *(from Swansea)via -* *1. A483 east, M4 west, A465 north eastward, A4061 south.*
G	***Brechfa Forest*** *(from Swansea) via -* *1. A483 east, M4 west, A48 westwards, A485 northwards.*

Note - ***The preferred routes were the subject of further trial runs in 2010 and may be revised depending on the outcome of this further work.*** *Routes may be revised over time depending on experience and changing road conditions (constraints and improvements).*

1.3 **Details of routes to sites** - Developers and their hauliers will need to identify their exact proposed route from Port to site entrance, and seek agreement to the principle of the route from the appropriate authorities, followed by the preparation and submission of a detailed Traffic Management Plan.

2.0 Enabling Works to Preferred Routes

2.1 **Approvals for proposed works** - Developers and hauliers will need to identify and seek approval from the appropriate authorities for proposed works to the highway and make arrangements for the passage of convoys from Port to site entrances. The assessment of route viability will need to include existing highway alignment and constraints as well as capacity assessments of existing structures and earthworks along those routes. Enabling works may be significant in terms of scale, cost, and approval timescales and will need to be proactively managed to minimise the impact on component delivery programmes. Developers should note that depending on the nature and location of the proposed works, an environmental impact assessment may be required to secure the necessary approvals. Cumulative impacts of a series of improvements may also be required.

2.2 **Road improvements and costs** - Improvements to the routes to facilitate the safe and speedy passage of abnormal indivisible loads will need to be **approved** by the appropriate authority and **paid for** by the developer.

2.3 **Completion of works** - All works must be completed, and arrangements for the passage of convoys agreed, **prior to** the commencement of convoy movements.

2.4 Agreements for the private-sector funding of works on the strategic road network are normally made under section 278 of the Highways Act 1980. Guidance on the section 278 process and the steps which will need to be taken by the developer can be found in the document found at: http://www.dft.gov.uk/adobepdf/165237/guidanceagreementss278pdf . In Wales, the contracting party would be the Welsh Assembly Government for trunk roads, and the relevant County Council for other highways.

2.5 The preferred contractual arrangement for undertaking works on the trunk road network within Wales will be for the Welsh Assembly Government to be employer for the s.278 works, and this may be managed on their behalf by WAG's Trunk Road Agents. Where third party land, outside the highway boundary, is required for improvements and s.278 procedures are utilised, then the developer will need to secure that land. If WAG are progressing the works as an improvement scheme, then there may be provision to acquire third party land by CPO.

2.6 Developers should make an early approach to the Assembly Government to open preliminary discussions about proposed improvements. Timescales for the design and approval processes can be lengthy. Works on the trunk road network will need to be programmed in advance and there are embargo periods when no roadworks are permitted.

2.7 In addition to works to the highway network and its assets, developers will need to liaise with Statutory Undertakers (BT etc) to ensure overhead cables and other equipment will not be adversely affected by AIL movements.

3.0 Arrangements for convoy movements

3.1 **Consents to move AILs** - Consent for actual convoy movements are required from the appropriate highway authority and the Highways Agency, and from the Police in addition to agreement to the Traffic Management Plan.

3.2 **Convoys** - There is a general presumption that abnormal indivisible loads (AILs) will be moved mostly in **convoys of 2 AILs** at a time, and with a Police escort or escort arrangements agreed with the Police.

3.3 **Delays** - Generally the movement of convoys of AILs along the access routes shall be such that delays to other traffic should be no longer than **10** minutes between 7am and 7pm.

3.4 Developers should give WAG or the relevant County Council a minimum notice of (TBA) weeks if temporary traffic orders are required to facilitate movement of AILs.

4.0 Time of day of convoy movements

4.1 **Appropriate times of day** - Convoys should be moved at times appropriate for the communities and local economies affected by the convoys, and avoid peak times (7.30am to 9.30am & 4.30pm to 6pm) and avoid school arrival and departure times, and weekends.

4.2 **Night- time movements** - Night time movement of convoys on motorways, dual carriageways and including the A5, and A483 as far south as Oswestry, could be permitted. Night time movement south of Oswestry could be permitted if this was felt to be appropriate for all authorities involved, and the affected communities.

4.3 **Early morning movements** (4am - 7am) could be considered in certain circumstances where the alternative of day time movements would be too disruptive, and affected communities have agreed.

5.0 Duration of convoy movements in North and Mid Wales

5.1 **Newtown** –. Until such time as a bypass is constructed around Newtown, convoy movements will not be permitted through Newtown between the hours of 7am and 7pm.

5.2 **Welshpool and other settlements north of Newtown** - Convoys should take, generally, no more than **20** minutes to pass through Welshpool from the A483 at Welshpool Station to the Raven Roundabout on the A458 including no more than **10** minutes in Welshpool High Street. Further restrictions may be required.

5.3 **Other places** - The passage of a convoy through any other settlement should take, generally, no longer than **10** minutes and durations should be kept to an absolute minimum, Where feasible approved modifications to the existing highway should be undertaken to minimise areas where manual intervention (e.g. manual rear wheel steering) is required.

6.0 Frequency of convoy movements in North and Mid Wales (2011 to 2020)

6.1 **Peak years** - The peak years for turbine deliveries are likely to be from 2015 to 2018. Prior to 2015, and after 2018, there are unlikely to be more than **2 convoys per week** on the specified routes in North and Mid Wales.

6.2 **North of Welshpool** - At times of peak delivery there should be no more than **2 convoys per day** between 7am and 7pm on the M53, A55, A483, A5 and the A483 north of Welshpool.

6.3 **South of Welshpool** - At times of peak delivery there should be no more than **1 convoy per day** between 7am and 7pm on the specified routes south of Welshpool.

6.4 **Welshpool Town Centre** - At times of peak delivery there should be no more than **1 convoy per day** between 7am and 7pm through Welshpool Town Centre (this may be further restricted in line with paragraph 5.2).

7.0 Allocation of convoy spaces in North and Mid Wales

7.1 **Industry scheme** – The wind farm industry will need to agree a scheme for the allocation of delivery slots over the next 10 years between developers which is acceptable to the appropriate authorities. The scheme should be flexible and fair to all participating developers who are contributing to the cost of road improvements.

7.2 **Alternative scheme** - In the absence of an acceptable scheme between developers, the Welsh Assembly Government as Trunk Road Highway Authority, in conjunction with the appropriate County Council, the Highways Agency, and the Police, will identify appropriate

delivery slots for each developer. The Traffic Management Act (TMA 2004) places a duty on Highway Authorities to ensure the expeditious movement of traffic on their road network and those networks of surrounding authorities. The Act gives authorities additional tools to better manage parking policies, moving traffic enforcement and the coordination of street works. The delivery of wind farm components will place significant pressures on Highways Authorities to comply with the Act's duties. Highway Authorities will use the powers conferred to them under the TMA to best manage AIL movement to ensure the expeditious movement of traffic.

7.3 **Encouragement of other methods of delivery** – The use of alternative methods of delivery, or construction, enabling a significant reduction of AILs by road (eg 25% by rail) is encouraged and where possible will be taken into consideration if priority for road usage is to be determined.

8.0 Variation of arrangements

8.1 **Variations, if all agree** - The general conditions of moving convoys may be varied if all the relevant authorities and affected parties, including the communities affected, feel that it is appropriate and more convenient for them to be varied (for example to increase the weekly frequency of convoys in order to reduce the number of months affected by convoys, or to facilitate reasonable requests from developers to vary their operations when there is no additional adverse impact on communities or traffic).

8.2 **No consensus on variations** - In the event that there is no consensus on a proposed variation of these general operational conditions, and the Welsh Assembly Government, the Police, and the Highway Agency have no objection to the proposed variation, then the relevant County Council should decide whether to vary these general conditions.

9.0 Publicity

9.1 Developers shall be responsible for agreeing arrangements with WAG and Highways Agency for publicising AIL movements in advance.

(methodology to be agreed - web sites, local press, radio etc?)

10.0 Contact Information

Contact information for 'appropriate authorities' to be provided.

Note 1: These notes are for guidance as to how and when convoys should be moved and **do not over-ride** any statutory responsibilities or requirements of any of the appropriate authorities.

Note 2: The '**appropriate authorities'** varies depending on the action required. For the general purposes of these Conditions the 'appropriate authorities' are: the Welsh Assembly Government; the Highways Agency; the relevant County Council(s); and the Police.