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1. Good news for East Lindsey (Lincolnshire) people concerned about the RWE Triton Knoll substation (news305, 306). The proposal has been put on hold. See Breaking News (Update 16) at <http://notritonknollsubstation.webs.com/>
2. The RWE Triton Knoll substation is to receive power from buried cables from the Triton Knoll Offshore Wind development. There is also to be a new associated NG 400kV station nearby to link it to the grid. The one prejudices the other. The RWE substation is now on hold pending NG's review of the 400kV location. Had the RWE substation gained approval before residents understood the implications, they would have faced extensive further development, and still might.
3. Europacable and ENTSO-E (the association of European TSOs) has recently released a report on the ***"Feasibility and technical aspects of partial undergrounding of extra high voltage power transmission lines"***. The official document has now been released on the European Commission's website at [http://ec.europa.eu/energy/infrastructure/studies/doc/2010\\_high\\_voltage\\_power\\_transmission\\_lines.pdf](http://ec.europa.eu/energy/infrastructure/studies/doc/2010_high_voltage_power_transmission_lines.pdf)  
The report itself is dated December 2010 and the submission to the EC 11-01-2011. The revolt list of sources on underground cable costs has been updated and **attached**.
4. The ENTSO-E report should go some way to resolving discrepancies in cost ratios. The Executive Summary includes:  
*The Underground Cable (UGC) investment cost is typically 5 to 10 times higher than Overhead Line (OHL) costs. These cost ratios are directly related to the capacity of the link. Factor down to 3 can be reached for links with limited rating and under special favorable conditions for cable laying or in case of expensive OHL. Factors above 10 can be reached for high capacity double circuit links and if specific structures are needed.*
5. The Executive Summary also includes:  
*"It shows that four cable systems would be generally needed leading to a corridor of 20-25 meters on which no deeply rooted trees may be planted and appropriate access must be managed."*  
It will be important that this description does not give way to the former seriously misleading phrase *"swathe of sterilised land through the countryside"*. It should also be stated that in many cases farming continues as normal and the presence of the cables is practically visually undetectable.

6. An earlier draft of the ENTSO-E report was sent to David Kirkland for the KEMA review which has taken it into account.

7. Andrew Hope from the mid-Wales group STOP draws attention to the 65km HVDC double-circuit (2 x 1000MW) interconnector between France and Spain. It is an example relevant to Ireland for length and capacity. Google INELFE for details and Google SWE ERI 7th IG for clear graphics.

8. Andrew Hope also draws our attention to the European Wind Integration Study (EWIS) which lists grid projects in European countries including the EU. The details are not always covered in other sources. See APPENDIX A for link and comments. This is an important additional source for strategic information and the Revolt list of sources and links has been updated as **attached**.

9. Other Groups have reported that NG has cancelled its consultation meetings in Cardiff and Manchester for lack of support. I have not received an invitation though I registered online. The Revolt Secretary received a phone call in the last few days and was told that I would receive one too, but it never came. Powerwatch received an invitation letter dated 12 Jan.

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#### APPENDIX A EWIS report 2010

The European Wind Integration Study (EWIS) lists grid reinforcement projects across Europe to integrate wind generation.

<http://www.wind-integration.eu/downloads/library/EWIS-Grid-Reinforcement-Projects.pdf>

Project 111 is the Norway – UK connection presently commercially stalled, but EWIS says it installation is expected 2017-2020.

Project 135 is the new Rowdown (Surrey) substation (news312, 315) which is strategically to increase cross-border capacity “to support additional interconnectors” and is here related to integrating wind power across Europe.

Project 136 lists Deeside-Hunterston 360km sub-sea HVDC as “planned” and expected 2015.

Project137 lists Peterhead-Hawthorn Pit 365km sub-sea HVDC as “planned” and expected 2018, together with Project138 to upgrade a 275kV Hawthorn Pit – Norton line to 400kV. The NG SYS does not mention any new development at Hawthorn Pit but does mention a new substation at Brine Field to be connected into the Lackenby-Norton line for a new CCGT (gas-fired) power station. EWIS and SYS seem to be at odds here.

Project141 is a new Harker-Quernmore double-circuit 400kV line for 2020 as well as upgrading the existing line. That is roughly from Carlisle to Lancaster, some 100km

or 70 miles. This new double-circuit line appears not to be mentioned in SYS future developments (Appx B7-c). Then project142 takes the new double-circuit line on to Padiham (roughly near Skipton) across some of the most beautiful parts of the Pennines. SYS does mention this new line with extra new “substations as required” for 2020.

Project144 for a second Pentir-Trawsfynydd circuit gives commissioning date 2015, some 5 years ahead of SYS.

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