



Submission on  
the EirGrid  
Grid Link  
Stage 1 Report

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## Introduction

ICSA welcomes the opportunity to make this submission on the EirGrid Grid Link Stage 1 Report. ICSA represents the interests of drystock and sheep farmers throughout every county in Ireland, and provides a strong voice for its members in relation to numerous rural issues.

The Grid Link Stage 1 Report states the project objectives as:

- *Help secure a future electricity supply for homes, businesses, farms, factories and communities in Leinster and Munster;*
- *Help Ireland to meet its 40% renewable electricity target, and;*
- *Provide a platform for economic growth and job creation in the south and east of Ireland.*

In principle, ICSA acknowledges the importance of reinforcing the national grid and of facilitating a more sustainable domestic energy supply through the development of renewable energy generation schemes. The agri-food industry is a key energy consumer and the development of the sector is increasingly dependent on the reliable delivery of electricity. In the medium term, agriculture will also be a major contributor economic growth and job creation in the south and east of the country. However, ICSA is deeply concerned about the decision by EirGrid to so quickly discount undergrounding as an option and instead focus on an overhead line technical solution. ICSA is strongly advocating that all parties involved in the Grid Link planning and design process take this opportunity to revisit the proposed engineering options, taking into account recent advances in technology which may more readily facilitate a more widely acceptable undergrounding solution.

While a more extensive and inclusive education and consultation approach appears to have been applied to the initial stages of the Grid Link project by EirGrid and its appointed consultants (when compared to, for example, the initial stages of the North – South Interconnection Development), ICSA notes that there remain significant concerns amongst rural communities in relation to the extent and proposed technologies of the project.

ICSA has many members located in the overall study area, a notable number of whom farm on land inside one of the proposed route corridors, or have a residential property in, or close to, these corridors. ICSA has undertaken an internal consultation with affected or interested members to inform this submission. This document relates the key issues noted by ICSA in relation to the Grid Link Stage 1 Report.

### **General attitude of Stage 1 Report towards agriculture and family farms**

The Grid Link Stage 1 Report appears upon first review to be a very comprehensive description of the main constraints and the proposed routes. However, upon further scrutiny, it has been noted that the document is somewhat lacking in relating the Grid Link project to the day-to-day lives of people living and working within the study area and route corridors. With specific reference to farming, the report almost exclusively refers to agriculture in terms of a landscape description, and never makes the critical connection between *agricultural land* and *working family farms*, which form a significant part of the south-eastern economy. Indeed, the 175-page report only uses the term '*farm*' four times, three of which are in relation to *wind farms*.

Such an exclusively high-level and disconnected observed view of the diverse value of agricultural land is problematic in terms of garnering public confidence in the project. ICSA wishes to make the point that although farming is the most common commercial activity and land use in the study area, this should not dilute the importance of the individual farm in the overall route selection, impact assessment and planning application process.

### **Engineering solutions appraisal**

ICSA has received a number of correspondences from its members in relation to the apparent rapid discounting of underground cable (UGC) as a viable option for the Grid Link project. The EirGrid report describes the 'solution option development' process as primarily making a decision on the method of power transmission, before moving on to assess Overhead Line and Underground Cable options. In the Detailed Technical Analysis described

in Section 2.4 of the Grid Link Stage 1 Report, only one of the six described scenarios features an HVDC solution. This has been noted by a number of ICSA correspondents as being imbalanced at the outset, with very little effort made to identify any benefits of implementing an HVDC approach. Table 2.1 of the Stage 1 Report rates the economic performance of the six solution options, but there are no equivalent performance analyses for impacts on, for example, social, agricultural, archaeological or ecological receptors.

While converter stations are covered in the EirGrid report in relation to handling HVDC at either end of the proposed routes, there is no reference to the scale or design of such infrastructure. These have subsequently been discussed at Oireachtas Committee hearings, where they have been described as large installations (up to 9 stories and with a footprint of a sports pitch). However, the report notes that “[VSC DC] technology continues to develop with converter stations becoming more efficient, reliable and compact.” It is also worth noting that Technical Analysis Option 5 in Section 2.4 of the EirGrid Report does not describe additional nodal connection points for the HVDC option; these have since been described by EirGrid representatives as being a significant cost implication for making an HVDC Grid Link accessible to large-scale industry in the south-east despite the listed objective of the project to “secure a future electricity supply for homes, businesses, farms, factories and communities in Leinster and Munster”.

HVDC is summarily dismissed as being an option owing to technical issues with incorporating such a system in an exclusively AC grid, with the report also concluding that “While an HVDC underground or subsea cable is technically feasible, the use of HVDC is not considered the best option for Grid Link because of the significantly higher capital and operational cost and due to its inherent lack of flexibility and extendibility...” This conclusion is critical in directing the remainder of the Stage 1 Report, as all subsequent analysis of the feasibility of undergrounding of cable is based on a purely AC system, which is significantly more constrained in terms of transmission distances and cost. The decision to exclude an underground DC option at this stage makes a comprehensive consultation process problematic for interested parties, as no socio-economic cost-benefit analysis is available to effectively compare the feasibility of all options.

## Potential impacts to farming enterprises

As noted previously, the Grid Link Stage 1 Report is seen to take a distinctly high-level approach to the route selection process and makes almost no attempt to allay concerns over potential impacts to farming in affected areas. ICSA's internal consultation process has highlighted a large number of issues which farmers have raised regarding the potential impact on day-to-day farming activities during the design, planning, construction and operational phases of the Grid Link Project; the vast majority of these relate to concerns surrounding pylon-based infrastructure. These are summarised in Table 1. ICSA proposes that these impacts will need to be proactively considered as part of the ongoing consultation.

Drystock farms by their nature are frequently compact and intensive enterprises. Compared to dairy farming, animals do not move between fields as regularly and as such may remain in closer proximity to pylons and overhead lines for longer periods. Many of these farms are operated on a part-time basis, and as a result, many have introduced management systems which reduce the time required on-site. Interruption of these systems due to pylon construction, operation and maintenance will result in additional cost.

In the wake of recent food scandals, maintaining consumer sentiment in relation to Irish food production needs to be prioritised. A significant proportion of Irish drystock farms are involved in quality assurance and traceability schemes aimed at increasing consumer confidence and contributing to the 'green' credentials of the Irish agri-food sector. Irish beef in particular profits from the reputation of grass-fed, low fertilizer production methodologies; this production environment will be of prime importance in the future development of farming in the southeast region. An aspect of these quality assurance and traceability schemes result in a farmers name and address being included in or on the packaging; this in essence is an open and transparent advertisement for the general public to observe and recognise the optimum land management and animal rearing practices which take place on QA farms. The crossing of such farms by pylons and high voltage lines has the potential to impact upon consumer opinion insofar that the public may not consider such infrastructure part of the natural environment within which food is produced. EirGrid

are likely to argue that the presence of pylons on farmland has no impact on the health of animals or the quality of food produced there. However, this argument is countered by the basic immediate negative reaction of the general public to pylons; a public which is becoming increasingly better informed about where its food comes from. In this context, there is the real possibility that ‘pylon pollution’ associated with the Grid Link project will affect the market price for animals reared on affected farms.

Other potential farm impacts which are applicable to all types of agriculture are highlighted in Table 1 below.

**Table 1 – Potential impacts of pylons and overhead lines on farming enterprises**

Stage	Description of impacts
<b>Design &amp; Planning</b>	<ul style="list-style-type: none"> <li data-bbox="496 972 1406 1048">× Negative impact of the project route corridors on farm and property values</li> <li data-bbox="496 1084 1406 1160">× Negative impact on proposing new residential properties on the farm, for the farmer or for their family</li> <li data-bbox="496 1196 1406 1317">× Negative impact on daily farm management in an information vacuum regarding final pylon route – i.e. planning field use, construction of farm buildings, fodder storage</li> <li data-bbox="496 1352 1406 1473">× Negative impact on decision making processes for farmers in relation to purchasing, selling, leasing or renting farm land in an information vacuum regarding final pylon route</li> <li data-bbox="496 1509 1406 1675">× Negative impact through lack of ability to plan for multi-annual schemes as those implemented through the Rural Development Programme, particularly relating to Agri-Environment schemes (e.g tree planting and hedgerow management).</li> <li data-bbox="496 1711 1406 1832">× Negative impact on use of assets as security for credit from financial institutions due to perceived impact of proposed scheme on value of farm</li> <li data-bbox="496 1868 1406 1944">× Negative impact through time and money spent by farmers on monitoring the route design and planning process</li> </ul>

**Construction &  
 Operation**

- × Negative impact due to restriction in choice of sites for new dwellings and outbuildings on farm holding
- × Negative impact regarding biosecurity & animal disease due to increased risks during construction via elevated levels of farm access etc
- × Negative impact due to restricted access to various parts of farm
- × Negative impact through reducing access routes and times for suppliers and purchasers
- × Negative impact from noise and dust as a nuisance to farm workers and livestock
- × Negative impact on field drainage and soils under pylons and along construction access routes
- × Negative impact through risk of straying livestock and crop damage
- × Negative impact resulting from restrictions relating to the utilization of farms for equine enterprises
- × Negative impact due to restrictive health & safety protocols during construction
- × Negative impact via restriction on planting shelter belts or other vegetation features
- × Negative impact through increased liability insurance requirements
- × Negative perception by consumers or animal and crop purchasers
- × Negative impact through permanency of wayleaves and sterilisation of land in close proximity to overhead lines (also ongoing cost implication for management of wayleave)
- × Negative impact via increased safety risks relating to operating farm machinery adjacent to power lines and pylons

**Possible health issues**

ICSA is acutely aware of many members' concerns regarding the potential human health impacts of high voltage lines. EirGrid has been very pro-active in communicating the

position that EMF does not have any scientifically substantive impact on human health. EirGrid furthermore proposes that the design and operation of the transmission system will be in accordance with current international guidelines on EMF, as reviewed by the World Health Organisation and endorsed by the EU and Irish Government.

The EirGrid brochure on EMF notes that the EU Commission decided not to apply the 'precautionary principle' in relation to EMF in its Implementation Report of 2008 "*as there are no clear scientific indications that the possible effects on human health may be potentially dangerous.*" However, it is worth noting that in 2009, the EU Commission's Scientific Committee on Emerging and Newly Identified Health Risks (SCENIHR) delivered its opinion on Health Effects of Exposure to EMF where it highlighted *considerable knowledge gaps* in a number of areas regarding possible health effects from various frequency bands. Despite assurances by EirGrid, the general public appears to remain sceptical of claims of there being no negative impacts from EMF, with correspondence from ICSA members regularly noting that it is in EirGrid's interest for it to highlight the lack of any data indicating possible health implications.

Such scepticism is compounded by cases of potentially misleading information in EirGrid literature, which only serves to make consultation respondents less trusting of statements made by EirGrid. As an example, the EirGrid EMF brochure notes in its comparison of magnetic fields that 400kV AC overhead power line generates a field of 1.81  $\mu\text{T}$  **when measured at a distance of 30m**, while noting that the field for an equivalent AC underground cable is 50 $\mu\text{T}$  **when measured directly above the cable**. These statistics are clearly not directly comparable and give the impression that the brochure may have been attempting to bias the reader against underground options.

Furthermore, as noted by the consultants employed by Northern Ireland Electricity during the planning of the Meath – Tyrone Interconnector, "*the earth's magnetic field varies between 30 to 60 $\mu\text{T}$ , so any field strengths less than this level would be totally indistinguishable from that experienced by everyone on a daily basis.*" In this context, the use of the magnetic field chart in the EMF brochure would appear to be a somewhat futile

exercise, as all field strengths depicted fall below the 60 $\mu$ T threshold. ICSA advocates that future publicity and educational material supplied in relation to the Grid Link project should be significantly more balanced and be reviewed by an independent body prior to circulation.

Another issue involving health problems relating to pylons and overhead lines which has been less discussed is the issue of *mental health*. Many people potentially affected by the Grid Link Project have reported considerable personal stress which can affect a person's mental wellbeing; such stress is being caused by an perceived lack of communication by EirGrid, confusing publicity material, risk of property value loss and ongoing uncertainty regarding the general safety of high voltage overhead lines, as well concern over the other potential negative impacts listed in Table 1. In this context, stress can conceivably be more damaging to an affected family than exposure to electromagnetic fields.

### **Impacts on landscape and tourism**

Beyond the potential direct impacts to people and farming, ICSA is also concerned over the proposed use of pylons in the Grid Link project and how these may impact upon the broader landscape of the south east region. The installation of these significant structures will be highly contentious in the region, which features dramatic scenery and many heritage sites of interest.

When asked "*What did the holidaymakers associate with the South East?*" in the Failte Ireland Holidaymaker Study 2012, 65% of respondents listed both 'Ireland's history' and 'Spectacular scenery'. These tourist highlights extend throughout the entire Grid Link project area. For example, the Comeragh Mountains stretch from Dungarvan as far as Clonmel. This landscape and other scenic areas such as the Suir and Blackwater valleys would be dramatically altered by the existence of large scale pylon and power line infrastructure. The area features many pre-historic sites exhibiting standing stones, fulacht fia and cairns which are of considerable interest to tourists, particularly from an international perspective. Furthermore, other areas in the south-east region are extensively flat and low-lying, making it extremely difficult to screen pylons against the landscape.

While EirGrid maintains that the constraints identification process can mitigate against many impacts to the landscape or heritage, the cumulative impact of so many pylons through such a narrow corridor cannot be ignored. The economy of the south east has suffered during the recession to a greater degree than many other parts of Ireland. Tourism is seen as a key economic driver for the region, as visitors are drawn to the scenic landscapes and unspoilt environment that is found within relatively near proximity to the country's main population centre. The respective local authorities of the region have greatly invested in promoting the south east as one of Ireland's premier tourist destinations. In this context, the development of tourism in the south east has the potential to be significantly restricted if Grid Link proceeds with the overhead line solution.

## **Conclusion/Recommendations**

In summary, ICSA wishes to reiterate the concerns of its members that alternatives to the overground pylon solution have been too quickly dismissed at Stage 1, with too much focus on the economic performance of each option. The predominant use of monetary cost as a deciding factor is decidedly short-sighted in terms of such major infrastructure, in the notable absence of a full socio-economic cost-benefit analysis for an undergrounding solution. EirGrid has itself recognised the fact that rapid advances are taking place in electricity distribution technology, with the cost of alternatives to pylon infrastructure being steadily reduced; such changes also need to be taken into account. ICSA therefore advocates that:

- EirGrid and the Department of Communications, Energy and Natural Resources must be compelled to commission a full Cost Benefit Analysis of overground and underground options, ideally covering the full 50 year Grid Link project lifespan. The analysis should be independent and unbiased towards any one technical solution.
- Those involved in the Grid Link planning and design process should take this opportunity to revisit and review all potential engineering options, taking into

account recent advances in technology which may more readily facilitate a more widely acceptable undergrounding solution.

- Potential impacts upon all types of agriculture need to be more comprehensively assessed and communicated to the public. More reference needs to be made to farming activities (and associated residential properties) as a constraint to electricity distribution network routes, as opposed to a mere landscape feature.
- Potential impacts upon single rural dwellings and their residents need to be better assessed and communicated to the public.
- ‘Education’ material supplied by EirGrid must become less selective in the information contained within to avoid accusations of bias. Statistics and charts presented in this material needs to be better standardised to allow for more direct comparison.
- Given the delivered opinion of the SCENIHR (2009) on Health Effects of Exposure to EMF (*where considerable knowledge gaps in a number of areas regarding possible health effects from various frequency bands were identified*), EirGrid should give more emphasis to the findings of recent and current research projects, as opposed to continually referring to older studies and the accepted positions of the World Health Organisation, the EU and the Irish Government.
- Given the considerable knowledge gaps regarding EMFs, EirGrid needs to be more forthcoming on indemnifying landowners against all potential risk from such fields.
- To facilitate a better understanding of the feasibility for a HVDC solution, more information needs to be presented by EirGrid on the infrastructural requirements for AC/DC converter stations, in relation to footprint, scale, frequency, visual impact, nodal locations etc. This will facilitate a more open and comprehensive consultation process in the future.