



SUBMISSION

Title: Response by Port of Cork to Energy Green Paper *Towards A Sustainable Energy Future For Ireland*

INTRODUCTION

This document presents the response from the Port of Cork to the Government's invitation to interested parties and individuals to comment on the Green Paper *Towards A Sustainable Energy Future For Ireland* published in October 2006 by the Department of Communications, Marine and Natural Resources.

Within the National Spatial Strategy, the Port of Cork (the Port) has been designated as the Gateway with the most potential, outside of Dublin. The Port has studied the policies and proposals for action outlined in the Green Paper in the particular context of enhancing its gateway status. Our conclusion is that the level of existing infrastructure within the Port area offers the potential for Cork Harbour to become a major energy-hub, especially in relation to the securing and distribution of oil supplies and the development of a bio-energy industry in Ireland.

THE EXISTING INFRASTRUCTURE

- 1 A very significant part of Ireland's oil infrastructure is located within the Cork Harbour area, and in Bantry Bay where the Port provides the service of Harbour Master¹. In addition the Department of Transport is currently examining the feasibility of amalgamating Cork and Bantry harbour companies into a single entity because of existing synergies in the energy sector.

¹ A list of key stakeholders on the Irish energy scene, who already have, or plan to have, infrastructural or production facilities in the Cork Harbour Area is given in the Annex.

2. The excellent links between the Port and the national roads network allows for the distribution of oil products throughout the entire Munster region and beyond.
3. The Port area is well serviced by the national electricity grid: a 220KV line and transmission station at Raheen, several 110 kV lines and stations throughout the Harbour and two 220 kV lines linking the Aghada power to the 220 transmission station at Knockraha.
4. The pipeline linking the Kinsale Head and Seven Heads gas fields to the national transmission network comes ashore at Inch strand and the high pressure system extends around to Ringaskiddy at the western side of the Harbour.

We have identified a number of actions which would underpin the Port as a key gateway through which the major portion of Ireland's requirements for transport and heating fuels could be met.

SECURING OIL SUPPLIES

The discourse in this Section should be studied in the context of the following question in the Green Paper:

Question 3.2.7 Given the existing level of dependence on imported fossil fuels, what need to be done to enhance contingency measures?

A recent study for the Port² illustrates the significance, in the national context, of the Port's oil infrastructure for the importation, storage and distribution of heating and transport fuels³.

² *Implications of Current & Future Trends in the Supply of Energy to the Irish Market for the Development of the Port of Cork*: Byrne Ó Cléirigh Ltd. August. 2006

³ LPG, gasoline, heating kerosene, gas oil/derv, excluding natural gas

The Cork Harbour Orbit

Thirty four percent (1735 ktoe) of the 2004 demand in the Republic was either refined from crude oil at Whitegate and subsequently distributed across the ConocoPhillips road-loading terminal, or was imported directly across the Topaz terminal at Marina. Small quantities of LPG were also distributed through the Flogas and Calor terminals at Tivoli. All of this volume was distributed throughout the whole of Munster and into areas of counties Laois, Kilkenny, and Carlow. This region represents the *Cork Harbour Orbit*, that is to say: the boundaries out to which it is economical, or necessary – due to the absence of alternative facilities – to distribute petroleum products from storage facilities within the Port.

The study also assessed the expected demand for these products out to 2020 and estimated that the growth will be 28% nationally. This represents a demand around 6,990 ktoe by 2020, of which 2,516 ktoe would be consumed within the Cork Harbour Orbit (the Orbit).

Developments already underway, or in planning, at the Whitegate refinery⁴ would result in an increase in the percentage of the national demand for petroleum products that could be supplied from the Port of Cork. Moreover, as many of the downstream retailers (Texaco, ESSO, Topaz) have reached an accommodation with ConocoPhillips on the use of the Whitegate road-loading facility, the volume of petroleum product imported directly into Whitegate may increase, in addition to the throughput of crude oil.

Recommendation

The Port of Cork can be developed as a key gateway distribution of petroleum products and an expansion of the Orbit area. The work being carried out by NRA in developing the road network will help to expand the Orbit, however, this means concentrating all transport of fuel on the roads. Moreover, there is a practical limit to the distance that can be travelled by a road-tanker within the working day.

In our view, the proposed study referred to in paragraph 2.1.10 of the Green Paper offers an opportunity to explore a wider role for the Port of Cork as Ireland's hub for oil supply and

⁴ The addition of a vacuum distillation unit to upgrade the current residue to vacuum gas-oil for export as cracker feedstock and an increase of 33% in crude oil throughput, in 2009

distribution. We recommend that the feasibility of building a distribution pipeline from the Port to a terminal north of the existing Orbit, from which petroleum products would be distributed by road throughout the remainder of the country, including Dublin should be included within the cope of that study. The study would have to examine the technical & economic feasibility, as well as issues such as ownership and rights of access to the infrastructure.

The pipeline could also be a valuable facility for the distribution of biofuels, as we shall discuss below

Strategic oil Stocks

A major portion of Ireland's strategic oil stocks is held at locations around Cork Harbour, at Whitegate and Marina, and also on Whiddy Island in Bantry Bay. There is also scope for further expansion of storage at these, and at other locations within Cork Harbour.

However, access to stocks on Whiddy Island in an emergency could be problematic.

The opportunities for expanding oil storage at areas around Cork harbour and on Whiddy Island should be explored. The construction of a pipeline between Whiddy Island and Whitegate would greatly improve access to the strategic stocks of crude oil and petroleum products already held there; it would offer the opportunity to increase NORA's stockholding in Ireland; and it would also help to underpin the future for the refinery – which is a critical element of the Port's energy infrastructure and an important source of revenue. In combination with a distribution pipeline running northwards, the role of the Port of Cork as the oil gateway to the rest of the country would be assured.

Recommendation

We recommend that the feasibility of linking the Whiddy Oil Terminal with Whitegate refinery by pipeline is included within the scope of the proposed study to review Ireland's access to oil.

OPPORTUNITIES IN BIOENERGY

The arguments set out under this heading are intended to respond to two specific questions posed in the Green Paper:

Question 3.2.10 In addition to electricity generation, what actions should be taken to develop renewable energy usage in the transport and heat sector?

Question 3.2.13 In light of the Government's Science, Technology and Innovation Strategy, what needs to be done to radically expand the national energy research capacity?

The report of the (European Commission) Biofuels Research Advisory Council has set the following 'vision' for 2030:

By 2030, the European Union covers as much as one quarter of its road transport fuel needs by clean and CO₂ efficient biofuels. A substantial part is provided by a competitive European Industry. This significantly decreases the EU fossil fuel import dependence. Biofuels are produced using sustainable and innovative technologies; these create opportunities for biomass providers, biofuel producers and the automotive industry.

The study referenced in footnote 2 also examined the likely penetration of biofuels, for both heating and transport purposes, and concluded that, by 2020, just over 13% of the demand could be met by a combination of solid biomass for heating and liquid biofuels for transport.

Biofuel Developments

The Port strongly supports the proposal for the development of bio-energy in Ireland and there are already encouraging signs that Cork Harbour can become a centre this industry.

Last year, Whitegate refinery ran a successful pilot trial to convert imported soya oil to bio-diesel and this process has, just recently, been selected as one of programmes to be supported through excise duty relief in the DCMNR's bid to meet the target of 5.75% substitution of petroleum-sourced fuel by biofuels by 2010.

Bioverda, a subsidiary of NTR, is at an advanced planning stage in developing a plant to manufacture bio-diesel from imported rape seed oil at Ringaskiddy.

Apart from these two developments, there are several other possibilities, of which the Port's management is aware, which are at earlier stages of conception.

Many of the advantages which Cork Harbour has in relation to the supply of petroleum-sourced fuels into and beyond the Orbit also apply to the development of a biofuels industry. Even if the EU 'vision' referred to earlier was to be realised by 2030, biodiesel and bioethanol will be used primarily to extend the supply of petroleum fuels and *not* as a replacement. The expectation is that the vast majority of engines in use into the middle of this century will be very similar to the current spark-ignition and diesel engines. Consequently, successful biofuels will be those that can be used *in combination with existing petroleum fuels*, without major changes to the power unit, and that can be brought to the customer *using existing distribution systems*. It is essential, therefore, to locate biofuel plants close to major oil storage and distribution infrastructure, such as exists at Cork Harbour.

The linking of Cork Harbour by pipeline with the wider Irish market – the consideration of which we have already recommended – would enhance the opportunity to develop an indigenous Irish biofuels industry using raw materials produced by the agricultural sector. It would also allow the full exploitation of Cork Harbour as a discharge point for cargoes of imported biofuels or substrates, such as sugar cane liquor or ethanol from Brazil: there is a practical limit to the amount of biofuels that could be produced from Irish-grown biomass; consequently, as the penetration of biofuels increases, it is inevitable that imports will grow.

As the development of biofuels progresses and production moves from using raw materials which are essentially food-based, such as soya and rape or grain, there will be a need to develop integrated bio-refineries. The Whitegate refinery could provide a very suitable platform on which to develop a facility to co-process crude oil and a range of biomass. Its high electricity and heat demand would provide a useful sink for CHP while the various process units and utilities would be useful in dealing with by-products and side-streams.

The Port notes that it may be possible to locate a facility for research, technological development and innovation (RTDI) into bio-energy, and biofuels in particular, at Whitegate. The Port's view is that such a development would encourage the development of a bio-energy industry in the Cork Harbour Area, especially if the facility was available to responsible third parties.

Recommendation

The agreement of ConocoPhillips Ireland to locate a pilot-plant at Whitegate for RTDI development into bio-energy should be pursued by DNMNR and its Agencies and the necessary support should be made available.
