



Dublin Port Masterplan

Internal Report #6

Oil Zone

27th September 2011

Introduction

Ireland has a huge dependence on imported hydrocarbon fuels, particularly petroleum products.

	Final Energy demand by Fuel Type			
	kTOE ¹		%	
	2009	2020	2009	2020
Coal	382	158	3.1%	1.3%
Oil	7,578	7,014	61.9%	58.7%
Gas	1,578	1,455	12.9%	12.2%
Peat	272	128	2.2%	1.1%
Renewables	290	904	2.4%	7.6%
Electricity	2,147	2,292	17.5%	19.2%
Total	12,247	11,951	100.0%	100.0%

Source: SEAI Energy Forecast to 2020

Notwithstanding Government policy to reduce dependence on oil, a combination of economic growth and the lack of alternatives (particularly in the transport sector) suggests that there will continue to be a large dependence on petroleum imports over the period to 2020 and beyond to the end of the Masterplan period.

In 2010, Dublin Port's liquid bulk volume was 4.0m tonnes. This is equivalent to 53% of the country's total requirements for oil. Dublin Port's various oil facilities are, clearly, of major strategic importance to the economy. Oil imported through Dublin Port not only serves the needs of domestic, business and industrial customers in the Greater Dublin area, but also provides the only source of fuel supply for Dublin Airport.

Over the period to 2020, SEAI forecasts a 7.4% decline in the demand for oil in the economy.

In our issues paper, we postulated a largely unchanged volume of liquid bulk through Dublin Port in 2030.

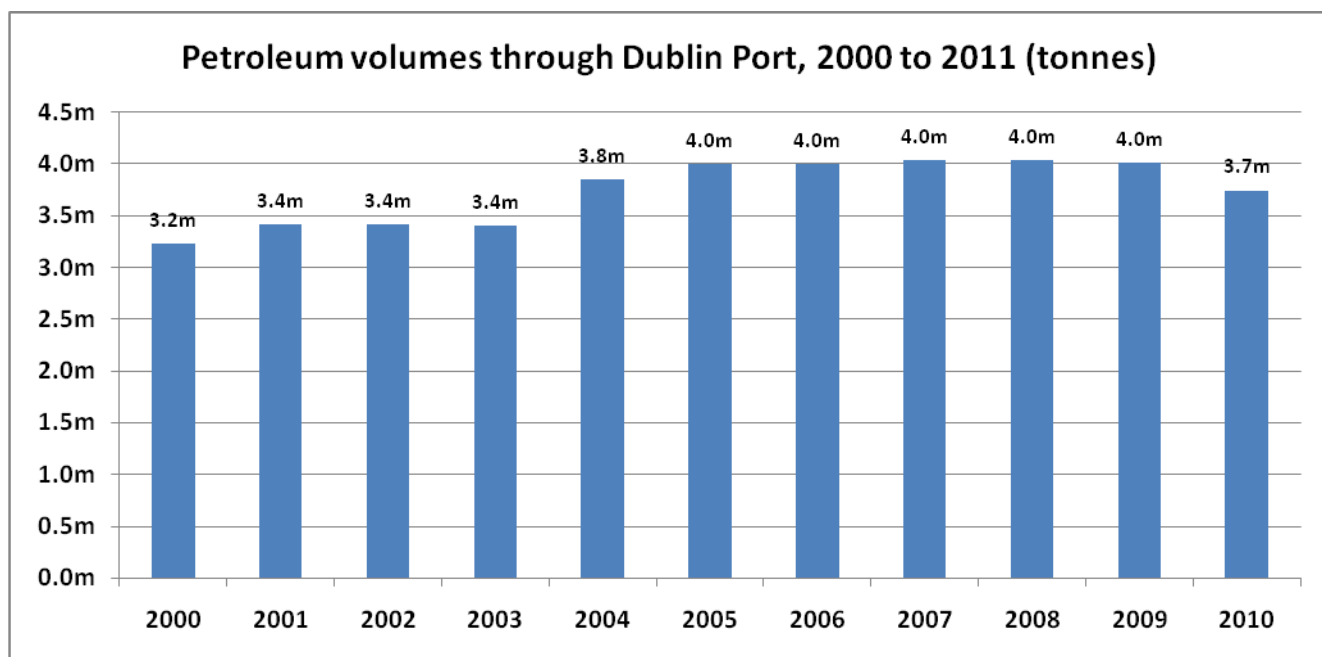
From a planning perspective, there is no significant difference between SEAI's forecast and our own expectation. At either level, approximately the same quantum of facilities and storage will be required in 30 years time as today.

¹ kTOE (kilo tonnes of oil equivalent) is a unit of energy where 1 kTOE = 11.7m kWh. The energy equivalent of one tonne of different petroleum products differs. For example, 1,000 tonne of diesel is equivalent to 1.01 kTOE and 1,000 tonnes of petrol is equivalent to approximately 1.05 kTOE. For simplicity sake, we have taken 1,000 tonnes of petroleum products to be equivalent to 1.0 kTOE.

Overview of Dublin Port's oil business

The volume of liquid bulk products through Dublin Port from 2000 to 2010 is shown in the Appendix.

In recent years, the volume has been relatively stable at 4.0m tonnes although there was a 6.5% decline in 2010 in the face of the continuing economic difficulties.



Petroleum products account for 98.6% of the Port's total liquid bulk volumes; the balance comprising molasses.

The great bulk of volume (87.3%) is made up of petrol, diesel and aviation fuel. Bitumen accounts for a further 8.4%.

In round numbers:

- 500 oil tankers discharge 4.0m tonnes of petroleum products in Dublin Port each year.
- The average cargo parcel is 8,000 tonnes. However, some ships discharge up to about 22,000 tonnes.
- The Port has four oil berths as follows:

	Standard Depth	Max. LOA
OB1	10.4m	200m
OB2	10.7m	200m
OB3	10.1m	180m
OB4	6.5m	100m

- OB1 and OB2 are used most frequently as these are equipped with discharging arms which facilitate speedy and more secure discharge operations.
- The oil jetties' discharging pipework form part of the COP (common oil pipeline) which distributes product among the Port's various oil storage facilities.
- These oil storage and distribution facilities occupy 23 hectares (or just under 10%) of the Port estate and are operated by four companies: Topaz, Top, Esso / Valero (together as Joint Fuels Terminal).
- In addition to these oil facilities, there are other storage facilities owned by Irish Rail, ESB and Synergen. Some of the ESB facilities on the south side of the Port are now operated for NORA (the National Oil Reserve Agency) to provide storage for national strategic oil reserves.
- Finally, there are bitumen² and LPG³ storage and distribution facilities.

Could the oil zone be moved?

It has been suggested⁴, most recently in the Masterplan consultation process, that the oil storage facilities in Dublin Port could be moved to a location outside the Port and fed by pipelines connected directly to the Port's oil jetties. If this could be done, the argument goes, then substantial land in the Port could be freed up for alternative uses, thereby reducing or eliminating the possible need for future land reclamation.

- Such a project would have four main components:
 - Acquisition of about 20 hectares of land with a suitable planning zoning. We estimate that this would cost in the region of €10m.

² Irish Tar & Bitumen, Irish Bitumen Storage and Lagan Bitumen

³ Calor Gas

⁴ For example, Infrastructure for an Island Population of 8 Million, February 2010 said: "In addition, capacity should be made available in Dublin Port by relocating the Oil Zone to a new dedicated port with pipelines to supply aviation fuel directly to Dublin Airport. This would release approximately 20ha of existing land for alternative port use."

- Building of new tank farms with a capacity in the order of 300,000 tonnes at an estimated cost of €220m (based on recent budget estimates for possible projects to build new oil facilities within the Port)
 - Building pipelines from Dublin Port to the new tank farms. We have no estimate for this cost.
 - Securing necessary planning and regulatory consents for the construction of the pipeline through residential areas.
- Based on the above, the estimated cost to move the oil zone from Dublin Port to another location would be well in excess of €250m.
 - There would clearly be significant planning and environmental hurdles to be overcome to implement such a project both for the building of pipelines from the Port and for the building of a new oil zone on a Greenfield site.
 - Moving the location of oil storage facilities from within the Port to a location outside the Port would generate little, if any, operational or economic benefits for the existing operators. Without this, it is unclear why they would agree to give up their existing facilities and commit to using new facilities.
 - The existing facilities in the port are brownfield sites servicing an industry with little growth prospects over the next 30 years and, depending on the success of Government energy policies, possibly looking at a gradual long-term decline.
 - Taking the above points together, it appears to us that the concept of moving the oil zone out of Dublin Port would not be economically justifiable and would be environmentally undesirable.

Policy over the period of the Masterplan

1. Dublin Port's oil unloading, storage and distribution facilities are of national strategic importance and will remain so over the period of the Masterplan.
2. The oil business contributes in the order of 14% of the port's total tonnage today.
3. Over the period from 2011 to 2030, we do not expect to see any significant growth in oil volumes. Indeed, we believe it likely that there may even be a decline. The relative importance of oil to Dublin Port will diminish and, by 2040, we estimate that liquid bulk products might contribute about 7% of the Port's total tonnage.
4. We do not believe that it is feasible to move the existing storage and distribution facilities from the Port to another location linked to the Port by pipelines.
5. Against the above background, the Port will seek to ensure that the existing oil zone is utilised as efficiently as possible over the next 30 years. In particular, DPC will work with the oil companies to identify projects which have the potential to free up land for other Port uses and, to the extent that it can be economically justified, would consider contributing financially to such projects.

Appendix - Dublin Port Liquid Bulk Volumes, 2000 to 2010

'000 tonnes	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average 2006 to 2010
33A - Petrol Spirits, Naphtha	763.4	753.7	791.3	787.2	780.9	868.3	870.2	878.2	862.2	850.5	748.8	21.0%
33B - Lubricating Oils	13.2	13.8	8.1	9.6	9.2	10.0	6.6	-	-	-	-	0.0%
33C - Fuel Oils: Gas, Diesel, Kero	1,898.4	1,930.5	2,034.0	2,140.6	2,328.2	2,584.3	2,593.0	2,646.7	2,722.3	2,764.8	2,575.8	66.3%
33D - Petroleum Bitumen	243.8	262.6	260.3	262.5	285.3	273.9	399.4	422.1	356.7	277.3	231.3	8.4%
33E - Heavy Fuel Oil, Creosote	265.3	402.4	272.9	151.1	390.4	208.1	71.9	21.6	13.4	20.1	100.5	1.1%
34A - Gas, Natural & Manufactured	40.7	40.9	38.4	43.8	46.5	47.6	45.3	43.7	44.8	32.7	34.5	1.0%
43B - Biodiesel Fame	-	-	-	-	-	-	-	7.3	17.8	32.7	11.2	0.3%
51B - Bio Ethanol	-	-	-	-	-	-	-	3.6	11.1	22.2	33.3	0.4%
Petroleum Products	3,224.8	3,403.9	3,404.9	3,394.9	3,840.4	3,992.2	3,986.4	4,023.2	4,028.3	4,000.3	3,735.4	98.6%
06A - Molasses & Vinasses	75.2	67.7	64.5	79.6	64.4	45.2	67.2	69.3	48.6	50.7	52.3	1.4%
Liquid Bulk	3,300.0	3,471.6	3,469.5	3,474.5	3,904.8	4,037.4	4,053.6	4,092.5	4,076.9	4,051.0	3,787.6	100.0%