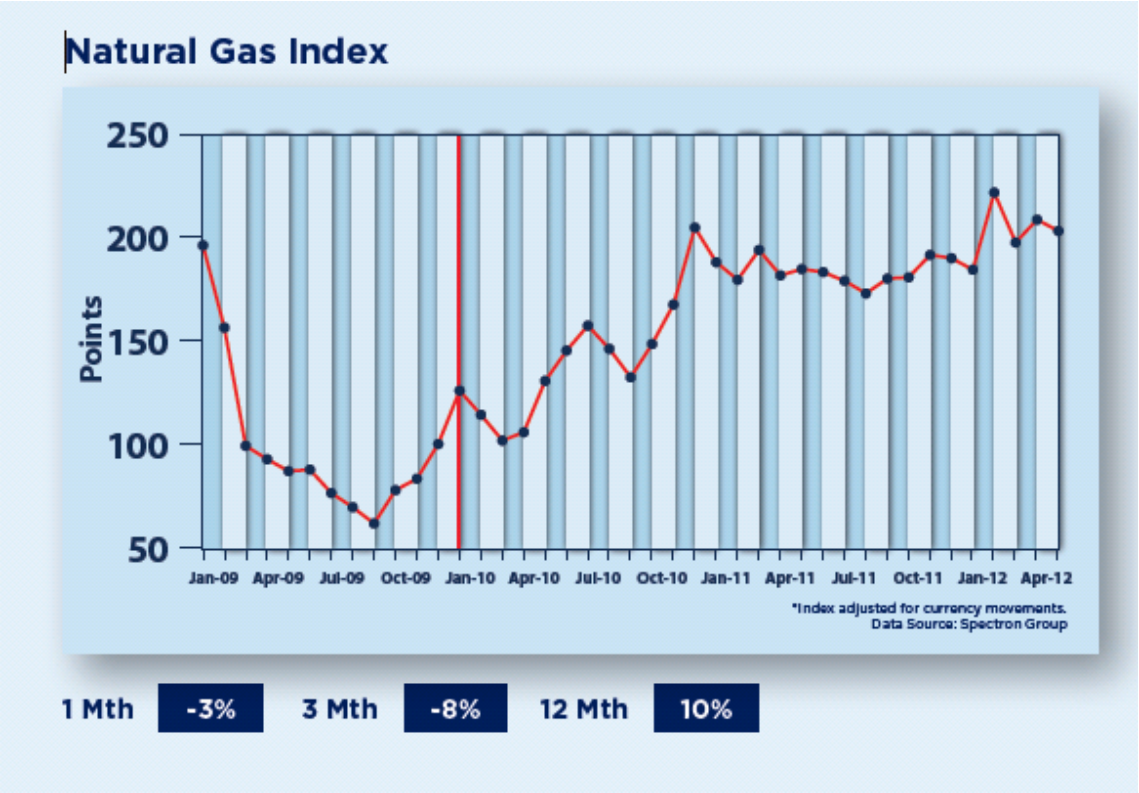
Introduction

The upward trend in electricity prices, stem in large part from the cost of fuels used in energy generation. This trend is likely to continue. The result of this is that, notwithstanding any government levies which support the development of renewable energy (RE), the cost of fossil fuels used in electricity generation are a drain on the Irish economy. This study seeks to indicate the increasing value for money to the consumer and the State that RE's embody.

Price Increases: October 2011-October2012

Recent reports have indicated that the rising price of Gas is set to increase energy bills for consumers in Ireland. The Irish Independent reported on Monday June 25 that Bord Gáis has applied to the Commission for Energy Regulation to approve an increase in gas prices to the consumer. This price increase comes after a similar increase in 2011, introduced by the main Irish electricity providers, Bórd Gáis, Electric Ireland and Airtricity. These price increases are in large part to due to the upward trend in the wholesale price of Gas seen reported in the Bord Gáís Energy Index Report for May 2012.

Figure 1: Natural Gas Prices January 2009-April 2010



Bord Gáis, 2012

Relative contribution of Gas and Renewable to the cost of the electricity generation fuel mix

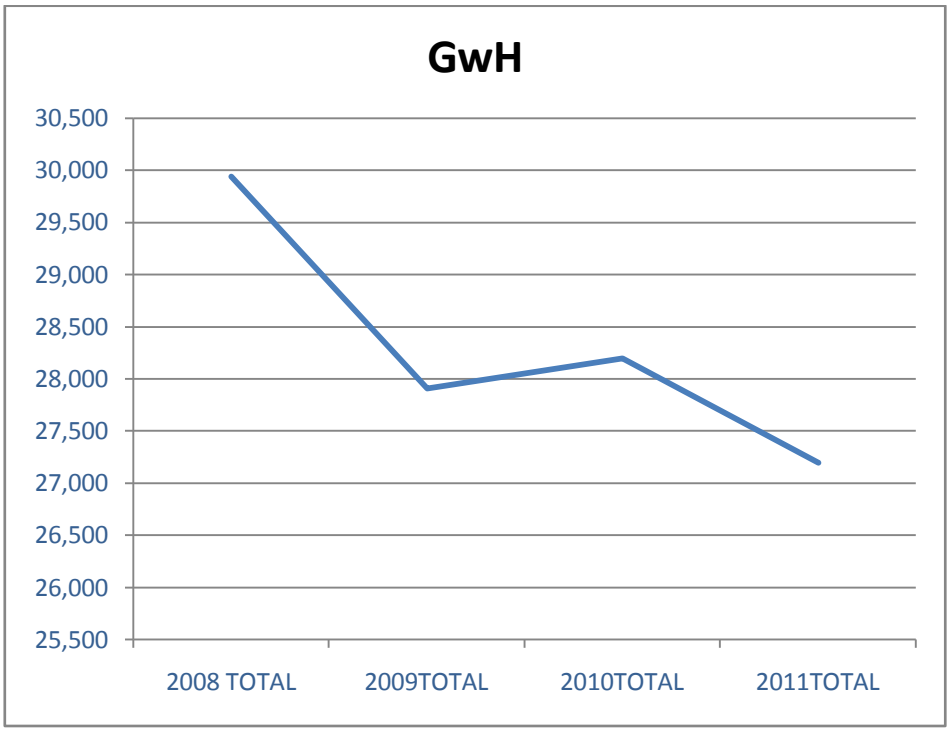
Not only will consumers who buy Gas directly face higher prices from their providers, but their energy bills are likely to increase through their impact household budgets in the form of higher electricity bills.

This will happen because gas, nearly all of it imported, is used in power stations to produce most of the electricity we use. Bórd Gáis which buys its Natural Gas 18 months ahead is set to

look for a 5-10% increase in the price of electricity to cover not only the long term upward price of Gas (up 10% over 12 months), but also other factors such as currency weakness. As a result, renewable energy is becoming a better value for money alternative to fossil fuel powered electricity.

While there is no figure for the amount of gas used for electricity generation in 2011, that figure for 2009 was 2759 ktoe(SEAI,2011:41) or 32087 Gwh of gas. There was a rapid fall off in electricity generation in Ireland between 2008 and 2009. Electricity generation increased somewhat in 2010 but unfortunately there has been further decline since then.

Figure 2: Trends in Irish Electricity Generation 2008-2012



Based on figures from Eurostat which are available here

Ireland's electricity generation from all sources in 2011 2.54% less than it was in 2009. We can extrapolate from this that the amount of Gas used for electricity generation also declined at this rate. This suggests that the amount of gas used for electricity generation in Ireland in 2011 was 96.5% of 32087 Gwh of gas, i.e. 30964 Gwh of gas.

The average NBP wholesale price of gas for the first 9 months of 2011 was €22.50 Mwh (or €22500 per Gwh), adding a conservative transmission charge of €1.50c Mwh (€1500 Gwh), therefore the estimated cost of the gas used to generate electricity was €743,136,000.

In 2010 Gas fuelled generation supplied 61.8% of our electricity and renewables supplied 12.9%. However as renewables supplied 15% of our electricity in 2011 and as electricity imports were much reduced in 2011 due to maintenance on the Moyle interconnector, we suggest that we can estimate gas fuelled generation for 2011 at 58% for which the fuel cost as mentioned above was approximately €743m. This cost includes any gas used for spinning reserve.

The fuel cost for the 15% of electricity supplied by renewables in 2011 was zero.

This suggests that if there were no renewables on the grid in 2011 and that this shortfall, as would be likely, was made up for by increased electricity produced by natural gas, then the fuel cost alone of the increased gas fuelled generation would have increased by over **€184,182,146.02** (see Appendix).

Table 1: *Gross electricity consumption percentage by fuel source*

% of Gross	1990	1995	2000	2005	2006	2007	2008	2009	2010
Coal	41.6	39.9	28.7	23.1	20.4	18.8	17.3	14.5	14.3
Peat	15.8	11.5	7.4	8.9	7.4	7.4	9.1	9.5	7.7
Oil	9.9	15.1	19.5	12.1	9.4	6.8	7.3	3.3	1.8
Gas	27.7	29.3	38.9	41.8	48.1	52.9	53.1	55.6	61.8
Renewables	5	4.2	5	6.8	8.6	9.4	11.9	14.4	12.9
Imports	0	-0.1	0.4	7.4	6.2	4.6	1.5	2.7	1.6

SEAI, 2011:47

Impact of Subsidies: REFIT, AER and PSO levy

RE generation is subsidized through REFIT and AER, this figure by has to be reduced by the amount of this subsidy. Renewable electricity generation is subsidized through REFIT and AER, The total REFIT and AER charge for 2011 was €42 million.

Thus reducing the increase gas costs in the absence of RE's by this subsidy means that, if there had been no RE generation in Ireland in 2011, fuel costs would, even without the renewables subsidies, have been **€142,182,146.02**. These figures indicate that the growing value of renewable energy production to the Irish domestic and business consumer is becoming undeniable.

Scale of the PSO levies relative to October gas price increases

The PSO levy for 2012/2013 is described in Table 1. The negative figures in the table relate in the first instance a repayment made to the PSO pool by Electric Ireland as a result of an overestimated charge made to Edenderry Power, and in the second instance a rebalancing of the PSO pool budget on foot of an audited correction of previous estimates. Thus the total PSO levy before these corrections is proposed to be €154,444,311. The total PSO levy for thermal/fossil is proposed to be €100,116,000 or 64.8% of the total, while the PSO levy for renewables is proposed to be €54,328,311 which is 35.2% of the total PSO before rebalancing. We believe that the rebalancing involved has no meaningful relation to the fuel origin ratio and so will use this gross figure.

Table 1 PSO Amounts 2012/2013

Lough Ree*	€29,702,000
West Offaly*	€28,223,000
AERs**	€8,002,000
CAP 05*	€42,191,000
REFIT**	€46,326,311
Estimated 2012/13 PSO CfDs	€0
Sub-Total	€154,444,311
Edenderry Power	-€5,938,000
Other*	-€1,697,269
Total PSO	€146,809,043
*Fossil Fuel	€100,116,000
**Renewables	€54,328,311

CER, 2012, *Public Service Obligation Levy 2012/2013, p8*

Domestic customers PSO Levy per month = €2.56 (CER, 2012:8) of which 35.2% is due to renewables production. Thus the monthly subsidy in Ireland costs domestic consumers €0.90 per month.

When compared to the recent 12% increase and the likely future electricity price rises to domestic customers due to increased wholesale gas prices (5-10%), this RE element of the PSO levy is very small.

If the average household's electricity usage is 5300kwh annually, and the average price per kwh is 17.92c (Bord Gáis Standard Rate), then the annual bill (excluding standing charges) before next autumn's increase is €949.76

Thus the October 2011 increase of added €113.97 per annum to the average household electricity bill or €9.49, **this increase alone is ten times the RE portion of the PRO levy**. The projected 5-10% increase in October 2012 makes the RE PRO levy even less significant.

Conclusion:

Last October's increase in electricity prices were caused by an increase in the cost of gas and it cost the average consumer €9.49 per month. Thus the PSO levy for all of the wind farms in Ireland is equivalent to a mere 10% of the increase in electricity prices brought about by the increase in the price of gas in October 2011 alone.

Consumers need to question why they are paying higher and higher fuel and electricity prices to gas producers from outside the state and still not benefitting from the abundant renewable resources available within the country.

Appendix: Calculations

Increased Gas use with absence of renewables:

Actual Share of Electricity Gas 2011(est): 58% = €743,136,000

1%= €12,812,689.65

Actual Share of Electricity renewables 2011(est): 15%

Share of electricity produced by gas in absence of renewables:

73%=€935,326,344.83

Difference in fuel costs if no renewables: €192,190,344.75