

Energy Report 2016

Period covered 1st January 2016 to 31st of December 2016

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Energy Report for the year ending 31st of December 2016

This report summarises the energy consumption/production of DkIT.

- DkIT consumes mainly Electricity and Natural Gas. It also produces electrical energy via the on site Wind Turbine.
- We have five electrical utility metering points, and nine for natural gas, connecting us to the national grid.
- The energy providers are appointed by the Office of Government Procurement (OGP).

Relevant Legislation and Guidance

The below is a list of Energy related Legislation / Regulation DkIT has to comply with.

INSTRUMENT	SYNOPSIS
National Energy Policy	Published 2015
Building Regulations	Construction related compliance of any new built structure and renovation
EPBD - Energy Performance of Buildings Directive	Compliance via SEAI Display Energy Certificates (DEC) for Buildings of 250 m ² or bigger
NEEAP - National Energy Efficiency Action Plan	33% reduction of public energy use by 2020
NREAP - National Renewable Energy Action Plan	Replace conventional energy sources with renewable ones; 12% Thermal, 40% Electric and 10% Transport by 2020
SI 426 of 2014 EC Energy Efficiency Regulation	Reporting of Energy use to SEAI; Energy Audits
SI 151 of 2011 EC Energy Efficient Public Procurement	Procurement with energy use over the life cycle of the installation in mind
SI 147 of 2011 EC Renewable Energy Regulation	Public Buildings must play an exemplary role with regard to construction and renovation

Consumption Summary

The figures cover the period from the 1st of January to the 31st of December 2016

Electrical

Consumption: 4,805 MWh

Cost: 490 kEuro

Natural Gas

Consumption: 6,328 MWh

Cost: 258 kEuro

TOTAL

Consumption: 11,133 MWh

Cost: 748 kEuro

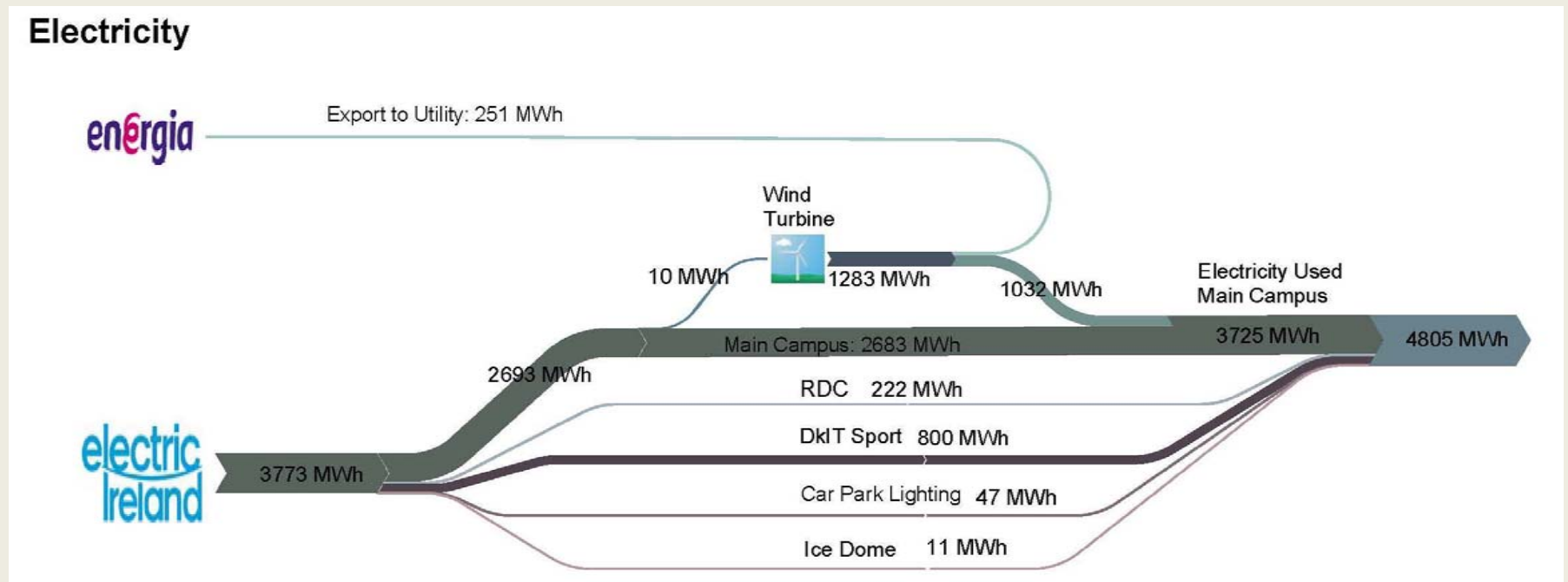
Energy Consumption Summary by Building

kWh used 2016 compared to 2015

Building	Electricity	Gas	Total	Comments
North Building	↑ 2 %	↑ 13.4 %	↑ 9 %	Difficulties with operating old boilers efficiently
South Building	↓ 5 %		↑ 7 %	Boiler replacement planned for 2017
Whitaker Building	↑ 5 %		↑ 10 %	
Faulkner Building Hospitality	↓ 2 %	↓ 9 %	↓ 6 %	
Faulkner Building MPC	↓ 6 %	↑ 14 %	↑ 7 %	Increased demand due to increased activities
Muirhevna Building	↓ 3 %	± 0 %	↓ 1 %	
Restaurant & Theatre	↑ 1 %	↓ 8 %	↓ 4 %	
PJ Carroll Building	↑ 2 %	↓ 11 %	↓ 5 %	
Regional Development Centre	↓ 1 %	↑ 4 %	↑ 1 %	
DkIT Sport	↑ 62 %	↑ 94 %	↑ 79 %	2016 was the first full year of operation
DkIT Car Park Lighting	↑ 21 %	n/a	↑ 21 %	Extended operating hours
Ice Dome	↓ 10 %	± 0 %	↓ 10 %	Building not in use
Overall Energy Use	↑ 7 %	↑ 12 %	↑ 10 %	Mainly due to DkIT Sport
Overall Cost	↑ 11 %	↓ 11 %	↑ 2 %	

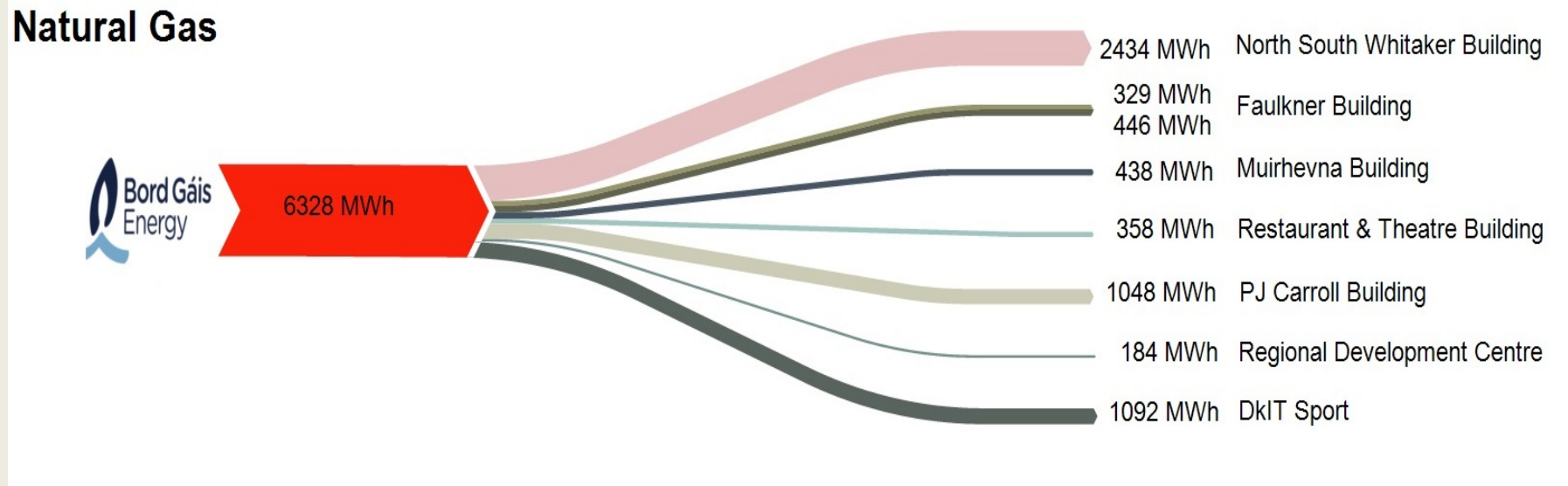
Energy Flows DkIT

The diagram shows the Electrical Energy streams of DkIT

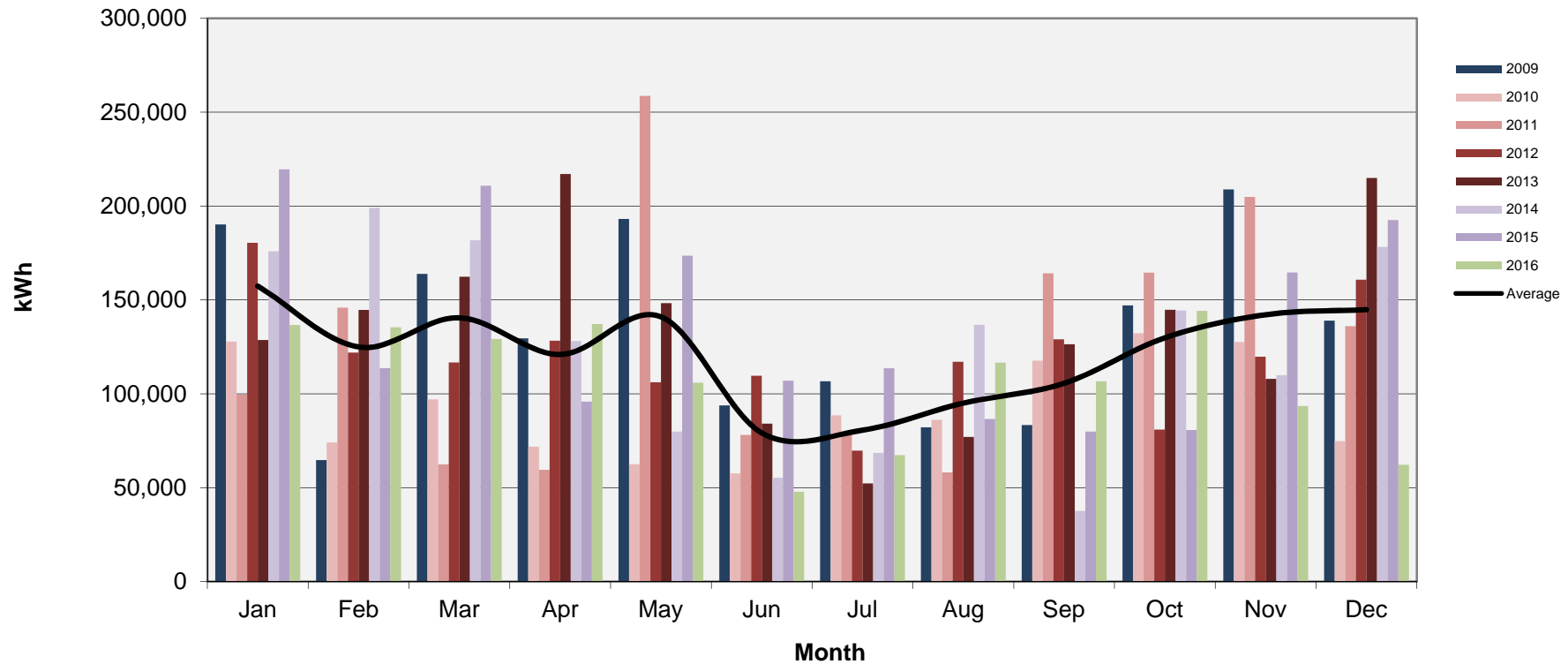


Energy Flows DkIT

The diagram shows the Natural Gas Energy streams of DkIT



Wind Energy Production



Year	2009	2010	2011	2012	2013	2014	2015	2016	
Production	1,497,671	1,117,718	1,510,316	1,440,406	1,608,429	1,495,390	1,638,382	1,282,718 kWh	
Export	341,555	160,150	361,393	298,946	326,519	315,489	384,959	250,838 kWh	
Consumption by DkIT	1,156,116	957,568	1,148,923	1,141,460	1,281,910	1,179,901	1,253,423	1,031,880 kWh	
Maintenance Cost	20,798.24	14,235.93	22,417.01	24,069.27	17,313.00	18,674.00	19,238.00	16,950.00 Euro	
Export Refund	5,926.83	6,401.17	17,723.08	14,964.13	21,939.54	17,692.00	19,810.57	11,065.57 Euro	
Cost for Wind Energy	14,871.41	7,834.76	4,693.93	9,105.14	-4,626.54	982.00	-572.57	5,884.43 Euro	
Cost per unit produced	0.993	0.701	0.311	0.632	-0.288	0.066	-0.035	0.459 c/kWh	

Energy Management in DkIT

We are actively working on the reduction of consumption of energy on a daily basis. The Estates Office is central to the monitoring of energy consumption data and the analysis thereof. We have installed various metering points that, over time, will give a complete and accurate picture of how much energy is consumed. At present not all data are readily visible but we are working on having all vital data available on a dedicated Energy Monitoring Website.

Day to day energy management is being carried out as part of the on-going maintenance and repair regime. Any heating or hot water repairs are always assessed for their impact on energy consumption. A list of more energy efficient light fittings for replacement has been drawn up. These will be used whenever old fittings need replacing.

The Green Campus committee is dedicated to inform and distribute information about behaviour that impacts on energy consumption.

This is mainly directed at staff and students and should help to establish an environment that has energy management at one of its core values.

Energy Management, has become one of the core activities of the Estates Office due to recent introduction of policies and regulations. We follow the guidance of the SEAI Energy Map system to evaluate the DkIT performance, return energy related data to the SEAI Monitoring & Reporting System and fulfilling our responsibility to have current DEC's on Display.

Further Information is available on request from the Estates Office.