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PLANNING REPORT

REGARDING

PROPOSED BIOMASS CHP PLANT

AT

**TOUGHER'S BUSINESS PARK, LEWISTOWN,
NEWBRIDGE, CO. KILDARE**

JUNE 2010

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1.0 INTRODUCTION

This Planning Report is prepared by Mr. David Mulcahy, Chartered Planning Consultant, on behalf of **Organic Power Ltd** ('the applicant'). The report relates to a planning application for a 18MW biomass combined heat and power plant (CHP Plant) in Tougher's Business Park, Lewistown, Newbridge, Co. Kildare.

CHP technology is well established in Ireland however it has almost exclusively relied on fossil fuels. There is a growing consensus internationally that the rate of global oil and gas production is at or near its peak and will soon begin a long term decline. Peak oil/gas has significant implications for Ireland, as our energy is heavily dependent on oil and gas, the vast majority of which is imported. Thus there is a pressing need for alternative energy sources relying on renewable energy. In this regard there have been recent developments in Ireland in relation to CHP Plants with a focus on biomass CHP Plants. Biomass CHP is well established in Europe however Ireland is at the bottom of the table of European countries in terms of delivery of such infrastructure with only 3 such plants currently operating in Ireland.

The proposed biomass CHP plant will use renewable energy sources for fuel with straw being the primary fuel source and with wood chip as a back-up fuel. The plant will produce approximately 18MW_e (electric power) and 35MW_{TH} (heat energy) with the electric power being sold to the grid and the heat being exported to industrial users in the locality. While the proposed development would be the first of its kind in Ireland straw fueled CHP Plants are a long established form of renewable energy power in Europe, particularly in Denmark where they have been in operation since the early 1990s.

Three Pre-planning meetings have been held with the Planning Authority

1. **Mr. Michael Kenny** (Planning), **Mr. Pat Whelan** (Liaison) **Mr. Brian Casey** (Planning) and **Mr. Damian Daly** on 19th November 2009,
2. **Mr. Damian Daly** (Planning), **Mr. Pat Whelan** (Liaison) **Mr. Brian Casey** (Planning), **Mr. David Reel (Roads)** on 18th February 2010,
3. **Mr. Brian Casey** (Planning), **Mr. Damian Daly** (Planning), **Ms. Ann Greene** (Environment) and **Adrian Barrett** (Roads) on 20th May 2010.

This report should be read in conjunction with the EIS prepared by **erm21c** and the drawings prepared by **Niall Fitzsimons & Co**. This report does not address the environmental issues associated with the proposed development as these are covered in detail in the EIS.

2.0 LEGISLATIVE CONTEXT

2.1 Planning and Development (Strategic Infrastructure Act) 2006

Schedule 7 of the Planning and Development (Strategic Infrastructure Act) 2006 lists the type of developments and the associated thresholds which require a proposed development to be made directly to An Bord Pleanála. The proposed development has been screened to establish if it requires an application to the local authority or An Bord Pleanála.

Under 'Energy Infrastructure' the following development is considered relevant to the current application:

"A thermal power station or other combustion installation with a total energy output of 300 megawatts or more"

On the basis that the proposed development is significantly below the 300 megawatt threshold, the planning application should be made to the local authority.

2.2 EIS

Schedule 5 (Part 1) of the Planning and Development Regulations, 2001 states that an EIS is required for a *"combustion installation with a heat output of 300 megawatts or more"*.

The proposed development has a boiler heat output potential of approximately 30MW_{th} and does not meet this threshold. Notwithstanding the fact that the proposed development is sub-threshold an EIS has been provided with the application.

2.3 Waste

Fuel

The European Waste Catalogue and Hazardous Waste List, 2002 outlines wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing under section 02.01. It only refers to "spoilt straw" (i.e manure) constituting waste and makes no reference to "straw" as being a form of waste.

Article 2 (f) of the Waste Framework Directive 2008/98/EC states that *"straw and other natural non-hazardous agricultural or forestry material used in farming, forestry or for the production of energy from such biomass through processes or methods*

which do not harm the environment or endanger public health” are excluded from the scope of the Directive i.e they are not considered waste.

(see extracts from EWCHWL, 2002 and Directive 2008/98/EC in [Appendix A](#)).

As such, the proposed CHP plant does not rely on waste as a source for fuel. Instead it relies on a renewable source of fuel derived from agricultural residue – straw. This view has been confirmed by **Ms. Collette Corrigan** of the Kildare County Council Environmental Department.

In relation to the back-up fuel (woodchip, and possibly miscanthus) these are not classified as waste.

Ash

There are 2 types of separate solid emissions from the plant i.e. bottom ash and fly ash. The classification of hazardous waste is regulated by the European Hazardous Waste Directive 91/689/EEC¹. As a result of the directive, the European Waste catalogue was produced, listing all wastes grouped according to industry, process, or waste type¹. Ash from biofuels for use on forest or farmland belongs to the waste category “EWC 10 01 01 Bottom ash, slag, and boiler dust”, or “EWC 10 01 03 Fly Ash from peat and untreated wood” and is not listed as hazardous¹. The management of the solid emissions output from the plant will be governed by a WASTE Management Plan (WMP) which will be incorporated into the Environmental Management System (EMS), which will ensure compliance with licenses. It is assumed that this will be regulated as part of the IPPC process by the EPA. The ash will be used as a means of inert carbon burial, and a non-fossil fuel derived fertilizer to provide nutrients to the soils where the fuel straw has been grown, thus returning some of the nutrients extracted by the crop to the soil.

Having regard to the fly ash and bottom ash which arise as solid emissions from the combustion process, the relevant national waste legislation is not clear as to whether a waste licence is required in terms of disposal or, whether such disposal falls under the IPPC licence. This decision will be made by the EPA and although information about the development has been sent to the EPA as part of the IPPC licence they are not in a position as of yet to clarify if the ash disposal will come under the IPPC licence or needs a separate waste licence.

2.4 IPPC Licence

The operation of combustion installations with a rated thermal input equal to or greater than 50 MW requires an IPPC licence issued by the Environmental Protection Agency.

The proposed development has a boiler capacity of 50MW and therefore requires an IPPC licence.

2.5 Ownership

The subject site is owned by Mr. Tommy Tougher. The lands will be leased from Mr. Tougher. A letter of consent from Mr. Tougher allowing Organic Power Ltd to make a planning application on the lands accompanies the application.

3.0 SITE LOCATION AND DESCRIPTION

3.1 Location

The subject site (2.2 hectares) is located on lands immediately to the south of Tougher Business Park, approximately mid-way between Naas and Newbridge in Co. Kildare.

3.2 Description

The general area is characterised by large-scale industrial buildings associated with the business park and undeveloped rural lands. The industrial zoned lands to the south-west of the site (under the Newbridge LAP, 2003) are undeveloped, however the provision of site works has commenced.

At present the site consists of an undeveloped greenfield site adjoining the business park. It currently forms part of a larger greenfield site from which it is separated by fencing. The site is bordered by mature trees on three sides which largely screen the site from surrounding views. There is a drainage ditch running along the south western boundary of the site.

Access to the site is via the established road network in the Tougher Business Estate with a new vehicular access being constructed at the end of an existing cul-de-sac.

38kv lines traverse the northern portion of the site.

3.3 Adjoining Lands

The aforementioned greenfield land adjoins the site to the north-west. It is understood that this was previously used as a soccer pitch although there is no evidence of this activity having occurred recently.

The lands to the north west of the site are comprised of dense, mature, planted trees.

The remaining lands to the south-west, south and east are comprised of agricultural lands.

There is a residential dwelling with ancillary sheds located to the south-east of the site at a distance of 190 metres. This dwelling is in the ownership of Mr. Tommy Tougher and is currently being rented. There is a small cluster of 3 dwellings situated to the south of the site at a distance of 270 metres.

4.0 PROPOSED DEVELOPMENT

4.1 CHP Plants

It is proposed to construct a biomass Combined Heat and Power Plant (CHP Plant) on the site. Combined Heat and Power (CHP) is the combined production of heat and power in a single process. Typically, in conventional electricity generation, over 60% of the input energy is lost to the atmosphere as waste heat, while the remaining 40% is transformed into electricity. CHP systems channel this extra heat to useful purposes so that usable heat and electricity are generated in a single process.

4.2 Proposed Works

The proposed biomass CHP plant will comprise of the following structures:

Straw storage building:	10.7m high, elongated building located at rear (south) of the site. This building can contain a maximum of 2,223 straw bales which equates to 4 days storage.
Boiler building	24.3m high building located in centre of the site containing furnace, superheaters, vibration gate and bottom ash conveyor.
Chimney	Standalone 36m structure situated to north of boiler

Control office building	12.6m high building adjoining boiler (east side). It contains the turbine room, pump room, water purification area, relay room and LV/HV rooms.
Cooling Plant	10m high building situated adjacent to boiler (east side)
Ash storage building	7.2m high elongated building adjoining boiler (west side) separated into two compartments for storage of fly ash and bottom ash.
Workshop	9.9m high building adjoining boiler (west side) containing workshop/storage area.
Water storage tank	24m high tank for storing hot water situated to west of site.
Wood chip silo building	13.5m high storage structure located to north of water storage tank
Screen Building	6.3m high building located to the south of the water storage tank, this building is used to screen woodchip for any foreign objects such as metal, plastics etc.
Water Attenuation Pond	Situated to the west of the water storage tank, the pond measures 20m x 12m and will be 1.5m deep.
Car Parking Area	15 no. car park spaces adjoining office building

The existing mature trees around the boundary of the site will remain in situ in order to help screen the visual impact of the proposed development. A new grove of trees will be planted along the northern boundary of the site to fully enclose the new buildings with screen planting.

4.3 Process

The combustion of the straw and wood releases heat energy which is used to vaporise steam from water in a closed cycle, which then passes through a steam turbine electric generator, and steam to water condensers, which act as heat exchangers to pass heat energy into an external hot water / steam district heating system.

The plant will combust the fuel to produce 50MW thermal energy in a high efficiency boiler (92.6%) to raise a head of steam of 46.3MW to produce 18MW electricity via the high-efficiency turbine and generator. Waste heat will be made available for industrial use in adjacent and nearby industrial sites.

4.4 Fuel

Straw

It is proposed to fuel the CHP Plant using straw (stalks of threshed grain such as wheat, oat, barley etc). Straw is an agricultural residue (a by-product of cereal production) and is not classified as waste. It is composed of 42% carbon, which is why it can be used as fuel.

Established Precedent

The use of straw to fuel CHP Plants is a long established technology in Europe, particularly in Denmark. Examples of such straw fueled CHP Plants are addressed below in section 7.0. The model involves farmers transporting straw to local storage points during the harvesting season. It is envisaged that there will be 10 no. of these storage points. It is important to point out that the storage points are not physical buildings; they involve straw bales stored under tarpaulin. The straw is then transported to the CHP Plant during the course of the year as required.

Availability

Significant volumes of straw and woodchip are available in Co. Kildare and the neighbouring counties of Meath and Dublin. These counties annually produce over 317,000 tonnes of straw alone. In order to operate an 18MW CHP plant such as the one proposed, 416GWh of biomass energy is required or 100,000 – 115,000 tonnes of straw at 15 - 30% moisture. In other words the proposed CHP Plant will require 1/3 of the straw production in counties Kildare, Meath and Dublin. This is the equivalent of 18,000 hectares of straw.

Lack of Demand for Straw

It is important to note that currently at least 50% of the straw produced in Ireland is ploughed back into the ground, as it has some residual fertilizer value and there is little demand for it as a product. One reason for the lack of demand for straw is the increasing use of slatted houses to winter cattle which has reduced the need for straw bedding. Also the mushroom industry which uses straw for compost is in decline. In many cases farmers have great difficulty selling off straw even for rock bottom prices due to the lack of demand.

Economic Benefit for Farmers

The demand for straw generated by the CHP Plant will make a significant contribution to ensuring the livelihood of cereal farmers into the future.

Currently, no straw for fuel market exists in Ireland. To supply the plant, a market will have to be developed. It is proposed to do this by contracting farmers to supply 50% of their straw including an advance payment, and putting in place sufficient logistics to bale the straw immediately post harvest and transport it to stockpile areas for storage. The logistics will be of sufficient quality that the farmers will suffer no inconvenience due to delays at any stage of the process. The price offered, based on a five year rolling average figure contracted before sowing for 50% of a cereal grower's production, will be sufficiently attractive to deliver a significant new source of stable revenue to the farmer. Farmers who wish to receive ash as fertiliser will be offered it, adding a further incentive to engage in the supply of straw to the plant. A Special Purpose Company will be set up in advance of commissioning to supply at least 70% of the straw, providing baling, stockpiles, and haulage. This company will create sufficient stockpile reserves pre-plant commissioning to provide fuel for 1.5 year's plant operation. The remaining 30% will be provided by external contractors supplying straw and/or wood chip.

It is estimated that up to €5 million annually, will be paid to local cereal farmers to supply the straw.

Back-up Fuel

The back-up fuel for the plant is wood chip. Wood chip is sourced from forestry thinning (thinnings of forestry saplings which are weeded out). There is currently an excess of wood chip derived from forestry thinning due to the high volume of planting that took place in the 1990s in response to government grants.

Renewable energy crops such as willow and miscanthus could also be used if required.

Restricted on Fuel Source Types

It is important to highlight to the Council that the proposed biomass CHP plant is strictly restricted to dry biomass source material and cannot be used to combust municipal or other waste material. Furthermore, the type of organic source material is limited to the combustion based fuel types specified. Organic wastes such as poultry waste, agri-industry waste, food processing waste, bonemeal, abattoir waste or vegetable waste etc cannot be substituted.

The technology used in the plant is such that a constant tar coating on the superheater pipes inside the boiler is required in order for the machinery to operate effectively. Straw is high in the appropriate tars and allows such a coating to be present at sufficient levels on a constant basis. If this tar coating is reduced it would lead to the super heaters breaking down. As such the technology involved is designed to cater for very specific fuel types and its sensitive nature means that introducing different fuel types to those specified could have significant adverse consequences for the operation of the machinery. The use of any non-biomass based feedstock in the boiler would lead to malfunction and costly downtime for repairs.

In this regard the applicant has no objection to a condition of planning specifying the type of biomass fuel sources which may be used i.e. straw, wood-chip, miscanthus, reed canary grass, nut and fruit husks.

4.5 Employment

It is estimated that approx. 30 no. construction jobs will be created. The equivalent of 9 full time jobs will be created locally and 6 full time transport jobs externally.

In addition the proposed development will have significant downstream benefits for the arable farming community in Kildare and further afield by providing a guaranteed market for straw where currently there is none.

4.6 Construction and Operation

A number of competent suppliers exist for the provision of the boiler and plant who have a proven track record of experience, building, operating and maintaining straw fueled CHP Plants since the early 1990s. It is intended to work closely with the process design consultants Bioenergy ApS in the selection of a shortlist for the provision of plant. The project will take 22 months to build once construction starts. Construction is expected to start within 12 months of receipt of planning and grid permits. The operation of the plant will be by Irish employees who will be trained up

by engineers from Bioenergy ApS. This is customary with biomass CHP plants throughout Europe.

4.7 Outputs

Electricity	The steam turbine is nominally rated at 18MW electric. 16.2MW of this will power will be exported to the grid via a 38kV or 110kV connection, with the remainder used in the operation of the plant. The electric annual output per year ranges between 72 and 129.6GWh/yr.
Heat	For every GWh of electricity produced by the plant, 1.97GWh of thermal energy is also produced. Over the year the available thermal energy will be 121 to 242GWhrs.
Hot Water	The spent closed loop steam will still have between 121 and 242GWhr of heat available.
Steam	Steam can be bled off from the turbine or alternatively provided from the pass-out turbine to transfer energy to steam through a heat exchanger for export at 2.8kg/s for 8000 hours per year at 234 degrees centigrade and 30barg pressure. This steam can be exported to local industries in the area.
Ash	In the grate firing of straw/wood chip, ash is removed as bottom ash from the grate and fly ash separated from the flue gas. Both types of ash contain fertilizing substances, principally potassium, which the biomass has absorbed from the soil. The use of the ash in farming and forestry as a fertiliser makes it possible to reduce the use of inorganic fertilisers. Today, in parts of Europe where straw firing is well established, the bottom ash from the straw fired plants is spread on farmland, which means that the majority of straw ash is utilised.

4.8 Global Warming

The proposed development will eliminate the emission of 80,000 tonnes of carbon dioxide equivalent emissions from fossil fuel combustion annually (based on mix of coal, oil and gas). The development will also sequester 26,000 tonnes of CO₂ equivalent in the form of ash which will be used as environmentally friendly fertilizer.

5.0 THE APPLICANT

Organic Power Limited are a Cork-based company which specialize in the research and delivery of dispatchable power projects using a polygeneration mix of non-polluting technologies which are both renewable and sustainable. Operating since 2006, Organic Power has identified, acquired land lease options and is in the planning phase on 10 sites in Ireland which would deliver the 125MW targeted capacity by 2012. Organic Power will continue to identify similar sites to ensure meeting the overall 2012 goal and beyond as Management is targeting to develop a further renewable capacity of 500MW by 2017. Organic Power Ltd has assembled an experienced team in renewable energy generation development across the spectrum of wind, sun, water, geothermal, biomass and other sources both in Ireland and internationally. While focusing primarily on using proven renewable energy technologies Organic Power also seeks to exploit advances in technology through for example grant funding in tidal power.

Organic Power have received planning permission for wind farms in:

- Glashantooreen, Co. Kerry: 6 Enercon wind turbines resulting in 13.8MW
- Dromleena, Co Cork: 11 Enercon wind turbines resulting in 9.1MW

They have 2 no. further wind farm projects in the planning process: Garrane, Ballydehob, Co Cork : 5 Enercon wind turbines resulting in 4.5MW, Glendeish, Co. Waterford: 5 Enercon wind turbines resulting in 4.5MW

Organic Power is currently involved in developing Pumped Hydro Electrical Storage in Ireland. A planning application has been submitted for a 45MW PHES site in Derryduff, Co. Cork and preplanning is being submitted for a 480MW sea water PHES site at Glinsk, Co. Mayo.

In addition to the current application for a biomass CHP Plant in Kildare, Organic Power Ltd intend to apply for permission for another plant of identical size in Midleton, Co. Cork.

- The applicants, Organic Power Ltd, are an Irish based company which specialize in the delivery of a range of renewable energy projects throughout Ireland and have an established track record.

6.0 PLANNING HISTORY

6.1 Subject Site

Soccer Complex

There is a recent planning permission for the subject site. Permission was refused in 2009 (Planning Ref: 09/170) for a development consisting of the following; 1. Phase 1: Two number playing pitches including one no. sand based all weather pitch 2. Phase 2: Unlicensed 1638sq.m two storey clubhouse building (1383sq.m ground floor, 255sq.m first floor) comprising changing facilities, committee/staff rooms, offices, corporate/sponsor suites, gymnasium and sports hall with ancillary fundraising/awards use. 3. Signage, 184 car parking spaces, 3 coach parking spaces, fencing, services, lighting, landscaping, site development works and ancillary works on a 2.5 ha. site at Toughers Business Park, Lewistown, Newbridge, Co. Kildare.

The reasons for refusal related to:

1. The location of an inappropriate use on unzoned lands area outside the development boundary of any urban area.
2. The absence of appropriate infrastructure (footpaths, cycle lanes, public transport etc) would engender public safety by reason of traffic hazard.
3. The proposed development is of a size, scale and density which is incompatible with the rural character of the area.
4. The conflict between business park traffic and pedestrians and cyclists.
5. The unsustainable nature of a large recreational facility in a rural area in terms of increases in private transport.

The site layout and reasons for refusal are provided in full in [Appendix B](#).

It is submitted to the Council that the reasons for refusal pertaining to the soccer complex were specific to the land use proposed for the site and are not relevant to the current planning application. The proposed development does not require the type of infrastructure (paths, cycle-ways, public transport) which were absent from the previous refusal. The proposed development will not generate significant amounts of car based traffic.

The issue of the unzoned nature of the lands and the visual impact arising from size/scale are addressed in detail below.

It is further noted that there was no reference to the Leinster Outer Orbital Route in the planning reports or the roads reports.

6.2 Surrounding Area

3 Phase Industrial Buildings

Permission was granted by KCC for 3 industrial type buildings over two phases at the south end of Tougher's business park, to the west of the subject site (Plan Ref: 06/2712)

Part of the lands for this development are located outside the industrial zoned lands [these lands have been zoned industrial under the Draft CDP, 2011 – 2017). Some elements of this permission have been implemented. The 'Mercury' industrial premises located to the north east of the subject site is completed along with the large-scale 'Wolseley' industrial building built further north-east.

Site layout map is provided in [Appendix C](#).

Raising of Ground Levels

Permission was granted under Reg. Ref. 06/2577 for the raising of ground levels by less than 1.0m with earth, soil and stone content and site infrastructure works. Condition No.2 of the permission restricted the works to lands zoned NE1.

Soccer Pitches

Permission was granted under Reg. Ref. 04/1967 for soccer pitches, clubhouse, car parking etc on lands to the west of the subject site. No development has occurred to date and therefore the permission has now withered.

Cultural Centre

Permission was refused under Reg. Ref. 06/807 for a cultural centre on lands to the north-west of the subject site.

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- The previous reasons for refusal for a soccer complex on part of the subject site were largely specific to the proposed landuse and therefore not directly relevant to the current application.
 - There was no reference to the Leinster Outer Orbital Route
 - The recent permission for a three-phase industrial development to the north of the subject site included development on lands which were recognized by the Council as being unzoned and did not involve a material contravention procedure

7.0 INTERNATIONAL STRAW FUELLED CHP PLANTS

The use of straw in biomass CHP Plants is a well established means of producing power in Europe, particularly in Denmark and Sweden where there are a large number of such plants. Straw biomass CHPs have been operating in Denmark since 1990 (Rudkøbing CHP plant, installed by Bioener).

Some examples of biomass CHP Plants and particularly straw fuelled CHP Plants, are highlighted below.

7.1 Maribo-Sakskøbing CHP Plant, Tømmervej, Denmark

Dong Energy's Maribo-Sakskøbing's biomass (straw fueled) CHP plant began producing energy for district heating and electricity at the end of 1999. The heat produced is delivered to the district heating nets of Maribo and Sakskøbing, two cities in the southern part of Denmark.

This CHP plant, to which FLS miljø has supplied the boiler island, is the tenth in a row of plants installed by SK Power. The plant is decentralized and the operation and maintenance of the plant is carried out by the staff at the Kyndby Power Station located approximately 120 km from the Maribo-Sakskøbing CHP plant.

This straw-fired CHP plant exports 10.6 MWe which covers approximately 10,000 households. The plant also produces 20 MW of heat which covers 90% of the two cities' heat needs. The remaining 10% is supplied by an existing plant fired with wood pellets.

Straw is supplied to the plant by nearby farmers who also receive the ash and slag from the combustion process for use as fertiliser on their fields. The straw barn has a capacity of 900 tons which corresponds to four days of straw consumption at full load.

The plant has a total efficiency of 89% whereby 29% is for electricity production and 60% is for heat production.

(Source: http://www.bioener.dk/data/media/bioener_side23_24.pdf)

7.2 Fynsværket, Odense, Denmark

Vattenfall has opened a new straw-burning unit at the Fynsværket CHP plant in Odense, Denmark. More than three hundred thousand large bales of straw will be burnt in Fynsværket's new large boiler every year, replacing the use of approximately 100,000 tonnes of coal, which means that the atmosphere will be spared 245,000 tonnes of carbon dioxide annually.

Burning straw will result in heating for 60,000 consumers on Funen island and electricity for approximately 35,000 households, says the company. The new straw-burning facility will help to make Odense a greener city, and at the same time is one of the pieces in the larger puzzle of making Vattenfall's production of electricity and heating carbon dioxide-neutral. The plan includes replacing a large part of coal consumption with bio energy. Vattenfall has set a target for its Nordic operations to become carbon dioxide-neutral by 2030.

(Source:

http://www.powergenworldwide.com/index/display/articledisplay/3725961348/articles/powergenworldwide/distributed-generation/cogeneration-chp/2010/04/chp-unit_in_denmark.html)

7.3 Ely, Cambridgeshire, UK

Ely Power station in Elean Business Park, Cambridgeshire, England has been in operation since 2000. At 38MW, it is the largest straw burning power station in the world generating over 270GWh each year. Ely has a wide ranging planning permission and has successfully burned oil seed rape and miscanthus in addition to its usual fuel of cereal straw. The 200,000 tonnes p.a. fuel demand of the plant is supplied by Ely's sister company, Anglian Straw. The plant is highly efficient, generating steam at 540°C and 92 bar. Noted for its high reliability Ely achieves one of the highest load factors of any renewable energy plant. The straw is sourced from a 50km radius of the power station.

(source: <http://www.eprl.co.uk/assets/ely/overview.html>)

7.4 Tesco Straw Fueled CHP Plant, Goole, Yorkshire, UK

Tesco has been granted planning permission to build a straw-powered Combined Heat and Power plant to meet the electricity and heating needs of its Goole Distribution Centre. The new plant will generate 5MW of electrical power – enough energy to run eight Tesco Superstores. All excess electricity will be sold back to the grid.

Straw is a pure, natural material and a by-product of local farming. As straw is a renewable material rather than a fossil fuel, the CO₂ emitted is equal to the amount it has absorbed whilst growing, effectively making the energy carbon neutral. The plant works by burning straw which powers a steam turbine, generating electricity. The particulates (polluting particles) are then filtered to keep them from escaping into the air. The only waste from the process is ash which can be used by other industries, or passed back to the local farmers to be used as a fertiliser.

(Source: <http://www.tescopl.com/plc/media/pr/pr2008/2008-07-18/>)

7.5 Beddington, London (BedZed)

This is another example of a biomass CHP Plant. Although at a much smaller scale than the current proposal (130kWe) it demonstrates that this type of technology can even be provided in tandem with residential development.

BedZed is an innovative scheme involving 82 houses, 17 apartments, and 1,405 m² of workspace built between 2000-2002, with the aim of using only energy from renewable sources. The scheme includes a centralized heat and power plant (CHP) which provides hot water, that is distributed around the site via a district heating system of super-insulated pipes. The biomass CHP plant at BedZED is powered by off-cuts from tree surgery waste that would otherwise go to landfill.

7.6 Hanham Hall, Bristol, UK

Hanham Hall has received full planning permission and will be one of the first large-scale zero carbon communities in England. The development will have a communal CHP (Combined Heat and Power) system, powered by a biomass boiler, which will generate hot water and supply electricity for all homes. The hot water will be stored in a cylinder that can be used for washing as well as the air-based heating system. This system is a key feature for delivering the zero carbon component of Code Level 6. Heat for the homes and hot water will be provided by burning woodchips. Trees soak up carbon during their lives and store it, making them an essential tool for controlling the amount of carbon in the atmosphere. When woodchips are burned, this carbon is released into the atmosphere, more trees are planted to replace them, which will in turn, soak up the carbon again. This means that woodchip, or biomass is a zero carbon fuel, i.e. burning it does not add more carbon to the atmosphere so long as more trees are planted to replace those burned. This is unlike oil or gas which when burned, release carbon into the atmosphere that cannot be extracted and increases the dangers of global warming.

Source: <http://www.hanhamhall.co.uk/site/web/sustainable-living/chp-and-biomass>

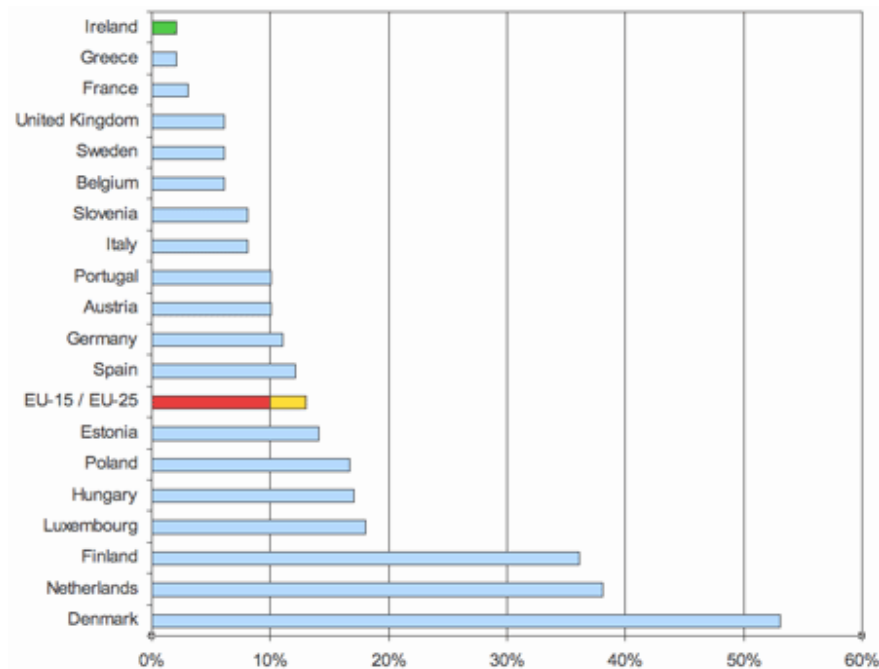
- Biomass CHP Plants, including straw fuelled biomass CHP Plants, are a long established technology in Europe, particularly in Scandinavia.
- Ely in Cambridgeshire, England houses the largest straw fuelled CHP Plant in the world (twice the size of the proposed development).
- Small-scale biomass CHP Plants have been integrated into exemplar housing schemes in the UK demonstrating that it is a safe technology.

8.0 IRISH BIOMASS CHP PLANTS

8.1 Introduction

CHP is a well-established technology in Ireland, however the overwhelming majority of plants are fossil-fuel based. According to the Western Development Commission document 'Biomass CHP Market Potential in the Western Region: An Assessment' (2008) there are currently 167 installations in Ireland with an installed capacity of just over 300 MWe. The document notes however that there are only 2 operating biomass CHP Plants in Ireland (Grainger's Sawmill, Co. Cork and Balcas, Co. Fermanagh). Since this document was published there is now one additional operational biomass CHP plant (Munster Joinery, Co. Cork) with another recently granted permission by An Bord Pleanala (Killala, Co. Mayo). It is known that there is another biomass CHP Plant before the Board under the SID Act, 2006 (Nobber, Co. Meath) and another large-scale development including a biomass CHP Plant due to be lodged in Castlemorris, Co. Mayo. Each of these plants are described below with the planning aspects highlighted where relevant.

Before addressing the Irish biomass CHP plants it is important to put the Irish CHP situation in context. The table below shows that Ireland is last of all the EU countries in terms of generating electricity from CHP.



Source: http://www.cesenergy.ie/chp_in_ireland.html

8.2 Grainger's Sawmill, Co. Cork

In summer 2004, the first Irish biomass-fuelled CHP (combined heat and power) plant went into operation at Grainger Sawmills' wood processing facility in Enniskeane in west Cork. This is a joint venture owned by South Western Services Co-operative Society Limited (SWS) and Irish Soft Woods Ltd (Grainger Sawmills). The plant, with an electrical capacity of 1.8 MW_e and a thermal capacity of 3.5 MW_{th}, produces heat for Grainger Sawmill's timber drying operations as well as 'green electricity' - and is connected to the national grid. The plant uses wood processing byproducts including saw dust, bark and woodchips together with forest thinnings.

(Source: <http://www.graingersawmills.com/chp.htm>)

The proposed development is significantly larger than this biomass CHP.

8.3 Balcas, Co. Fermanagh

The Balcas bio fuel pellet plant opened at the Balcas timber processing facility outside Enniskillen in 2005 (2.5MW output). The wood pellets are made using sawdust and wood chips from Balcas' timber processing activities. The pellets will feed an on-site Combined Heat and Power (CHP) plant that will provide all Balcas' heating and electricity needs, as well as supplying 10,000 Northern Ireland homes.

(Source: <http://www.power-technology.com/projects/balcas/>)

8.4 Munster Joinery, Co. Cork

In 2005 Munster Joinery Ltd installed a 3.0MW sawdust and wood chip fueled biomass CHP in Ballydesmond, Co. Cork

(Source: <http://www.fingleton.ie/pdf/chp/672-MUNSTER-JOINERY-CHP.pdf>)

8.5 Nobber, Co. Meath

College Proteins is seeking planning permission for the construction of a biomass Combined Heat and Power (CHP) plant and associated ash landfill facility adjacent to the existing meat rendering plant (located in the townlands of College and Rathgillen) at College Road in Nobber, County Meath. The application is being made direct to An Bord Pleanála (as Strategic Infrastructure Development) by reason of the fact that it involves the treatment of waste with a capacity for an annual intake greater than 1000,000 tonnes (see ABP Inspector's Report in [Appendix D](#)).

The CHP will be fueled by waste material in the form of meat and bonemeal (MBM) and organic liquids including blood.

The CHP plant will generate 8 MW of electricity and will provide a net export of 6 MW for use outside the plant.

(Source: <http://collegeproteinsbiomassheatandpowerplant.com/> - Planning Cover Letter)

The proposed development does not involve organic waste such as meat or bonemeal.

8.6 Killala, Co. Mayo

Mayo Power Limited received conditional planning permission from Mayo County Council to construct a 100MWe mixed fuel Combined Heat and Power (CHP) Plant at the former Asahi site near Ballina in County Mayo. The CHP would burn a combination of locally sourced peat from previously developed bogs, biomass (wood/energy crops) and a small proportion of coal – for technical purposes.

The decision was subsequently appealed to An Bord Pleanála (PL. PL16.227487) where permission was refused for one reason as follows:

Having regard to government policy,

(a) as expressed in the White Paper "Delivering a sustainable energy future for Ireland" 2007-2020, which envisages that electricity generation from peat in existing peat burning power stations will reduce over time, and

(b) as expressed in the National Climate Change Strategy, 2007-2012, which supports the co-firing of biomass with peat in existing power generation stations in order to reduce greenhouse gas emissions from existing peat stations,

it is considered that the proposed development, which relies on large scale burning of peat annually, (a finite, ecologically sensitive, non-renewable resource), that, notwithstanding government policies to diversify fuel supply away from over-reliance on gas and to ensure security of energy supplies, the proposed development would be contrary to national policy to reduce power generation from peat as a source of fuel. The proposed development would, therefore, be contrary to national policy and the proper planning and sustainable development of the area.

It is important to highlight the fact that the reason that the proposed development was refused was essentially due to the fact that the burning of peat in new power stations was considered to be contrary to national energy policy. The principle of the biomass CHP was supported.

The following extract from the ABP Inspector's report are considered relevant to the current application:

- *In my view as the biomass element is the only part of the fuel that is environmentally acceptable and in conformity with sustainable energy policies, it is crucial that it forms the primary ingredient in the co-firing station (p.69)*
- *The appeal development is located in an existing and rather well known industrial estate. In the absence of a documentary evidence to indicate adverse impact on the value of the surrounding farmland over and above the levels that would normally arise from being located adjacent to an industrial estate and solely arising from the proposed development, it would be unreasonable to refuse permission (p.75)*

8.7 Biomass CHP Plant, Emyvale, Co. Monaghan

Permission was refused by An Bord Pleanála in 2006 (PL. 18. 216528) for a Biomass CHP Plant in Killycarran, Emyvale, Co. Monaghan fueled by spent mushroom compost, poultry litter and woodchip (when available). The EPA confirmed that the fuels involved constituted waste.

The Board refused permission for two reasons. The first reason related to endangerment of public safety by reason of traffic hazard and obstruction of road users vis-à-vis the nature and volume of the additional traffic movements, which it is likely to generate along the county road haul route to the site, to the established use of that haul route as a means of access to agricultural lands and to dwellings and the lack of sufficient interest on the part of the developer to achieve the necessary upgrading of the road network. The second reason related to the failure by the developer to demonstrate that the process water discharge from the development will not impact adversely on the quality of receiving waters.

It is important to note that while the proposal was refused on site-specifics the ABP Inspector noted that the proposed development was acceptable in principle (s.16.2, p. 87).

8.8 Proposed Biomass CHP Plant, Co. Mayo

The (former) Tánaiste and Minister for Enterprise, Trade and Employment, Mary Coughlan TD has formally announced (15th May 2009) the development of a next generation bio-processing research, innovation and manufacturing centre at Claremorris, County Mayo. BioSpark, the newly-formed joint venture between Imperative Energy Ltd and Sustainable BioPolymers Ltd, proposes to invest euro40 million in which will create 180 new high value jobs within the local and regional economy with the realistic potential to grow to 300 jobs within three years.

The BioSpark development, which is to be located at a 22-acre site close to the town of Claremorris, will incorporate the following elements:

- 20,000 tonne per annum bio-processing facility, utilising next generation technologies and techniques for the conversion of organic material such as straw and wood biomass into multiple high value bio-based products such as ethanol, lactic acid, lignin, methane and hydrogen
- state-of-the-art laboratory facilities for bio-processing research and innovation
- 60,000 tonne per annum wood pellet production facility, which will be the largest and most advanced on the island of Ireland
- 20MWth/5MWe CHP plant which will be fired on biomass and connected to the national grid via a sub-station in close proximity to the site
- 17 commercial units to house a cluster of related business ventures

The biomass is used to produce industrial bulk and specialty bio-based compounds, which are predominantly derived from the refining of oil, and which form essential inputs for a wide range of major global industries from pharmaceuticals to paints and plastics. At the same time, the biomass is also used to generate large quantities of renewable heat and power, making the whole facility not only completely self-sufficient in terms of its energy use, but also providing enough green energy to support district heating and cooling systems for the Claremorris area.

(Source: <http://www.westontrack.com/news206.htm>)

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| <ul style="list-style-type: none">• There are only 3 no. operational biomass CHP Plants in Ireland, all of which are at a small scale and rely on a fuel source which is produced on site.• The proposed development does not rely on waste as a fuel source and therefore is not subject to Strategic Infrastructure Development screening.• The mixed fuel power plant in Killala, Co. Mayo was refused by An Bord Pleanala on the basis that it relied on a finite resource (peat) however the principle of the proposed development was supported. |
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- The An Bord Pleanála Inspector's Report in the Killala appeal noted that the location of the proposed CHP Plant in an industrial estate meant that there was no adverse impact on the value of surrounding farmland over and above being located adjacent to an industrial estate.
 - The decision of An Bord Pleanála to refuse permission for a Biomass CHP Plant in Killycarran, Emyvale, Co. Monaghan was based on site specific reasons (traffic arrangements and water discharge).
 - The proposed biomass CHP Plant in Claremorris, Co. Mayo is smaller than the proposed development but demonstrates that this technology is being rolled out in other counties around Ireland.

9.0 PLANNING CONTEXT

9.1 European Union Policy

The European Union policy on energy has been provided in a number of papers most recent of which include:

- Green paper on energy policy: *Doing More With Less ; 2006*
- *An Energy Policy for Europe (EC, 2007)*
- *Renewable Energy Road map 2007*

The first of these the Green Paper on Energy – ‘Doing More With Less’ established the main parameters for European Energy policy as being security of supply, sustainability, and competitiveness.

The follow up paper- ‘An energy policy for Europe’ established the overall objective of unilateral emission reductions targets of below 20% of 1990 levels by the year 2020 while setting an objective of moving towards near zero emissions from coal by 2020.

These were incorporated into the ‘Renewable Energy Road Map’ 2007 as binding targets.

9.2 National Level

At the national level the energy policy is covered under a number of documents including:

- *National development plan 2007 – 2013.*
- Green paper *Towards a sustainable Energy future for Ireland-2006*
- White Paper *Delivering a Sustainable Energy Future for Ireland – the energy policy framework 2007 – 2020.*
- *Bioenergy Action Plan for Ireland- Report of the Ministerial task force on Bioenergy.*
- *National climate change strategy 2007 – 2012.*
- *National strategy on sustainable development 1997.*

The overall strategic objective of the energy programme under the **NDP 2007- 2013** is to ensure security of energy supply national and regionally with high level of environmental standards. The programme would consist of three sub programmes.

The government's energy policy was outlined in the Green Paper which set out the three pillars of energy policy as (a) security of supply (b) sustainability and (c) competitiveness.

Under the **Sustainable Energy sub programme** over the period of 2007 – 2013 the bio energy sector is considered as an emerging new area in which there would be increased policy focus over the lifetime of the new plan. A target of **15%** contribution by renewable energy to electricity generation by 2010 has been set.

Informed by the outcome of the consultation process on the Green Paper, Energy White Paper **Delivering a Sustainable Energy Future for Ireland** identified the areas of growth to be targeted in the period to 2020, including growth in the uptake of CHP. The White Paper states:-

"Growth in Combined Heat and Power deployment is an important objective to 2020. The national economic benefit from CHP grows with scale of deployment. It is also the case that CHP investment yields a relatively low return at high risk. So barriers need to be addressed and supports maintained in order to realise the deployment potential, not just in community and buildings, but also in large scale plants".

Specific targets for installed CHP capacity were set as **400 MW by 2010** and **800 MW by 2020**, with an emphasis on biomass fueled CHP.

The White Paper also set out three specific actions in relation to CHP:

1. Continued support under the CHP Deployment Programme and R&D supports with particular emphasis on biomass fuelled CHP.
2. Within two years (from 2007) a further target for CHP will be considered for 2020 in light of further feasibility studies into CHP applications.
3. A review by CER of potential administrative and regulatory barriers and decisions on appropriate price support mechanisms for electricity generated from new high-efficiency, large-scale CHP.

The National Climate Change Strategy 2007 – 2012 refers to the White Paper on energy and states that there are significant synergies between the White Paper and the NCCS. The White Paper recognised that energy policy must make a substantial contribution to reducing greenhouse gas emissions through energy efficiency improvements, changes in the fuel mix and the increased use of renewable energy.

Potential benefit of combined heat and power (CHP) was constrained by economic factors and actions to stimulate included support for small scale CHP and large scale

biomass fed CHP underpinned by a target to achieve an installed capacity of 400 mega watts by 2010 and 800 mega watts by 2020. The achievement of this target would reduce greenhouse gas emissions.

The Bioenergy Action Plan for Ireland set a target of 33% for renewable electricity for 2020.

The EU biomass action plan and the EU renewable road map 2007 reiterated to contribution which the biomass sector could make to Europe's renewable energy targets for electricity, heating and transport through full implementation of the biomass action plan.

The National Strategy on Sustainable Development, 1997 noted the high dependence on fossil fuels for energy generation and recognised the role of biomass as renewable energy source

9.2.1 National Spatial Strategy, 2002 – 2020

The subject site is located in the Dublin and Mid East Region, between two primary development centres (Naas and Newbridge). It is also strategically located in close proximity to two National Transport Corridors, (Dublin – Cork/Limerick and Dublin – Waterford).

The NSS recognizes that rural areas have a vital contribution to make to the achievement of balanced regional development:

"This involves utilising and developing the economic resources of rural areas, particularly in agriculture and food, marine, tourism, forestry, renewable energy, enterprise and local services, while at the same time capitalising on and drawing strength from vibrant neighbouring urban areas" (s.2.6 – emphasis added)

It is further stated that the NSS will be implemented within the framework of strong and ambitious policies for the protection of the environment and policies to integrate environmental considerations into sectoral policies. In this regard policy and action *"will focus, on limitations on greenhouse gas emissions in the context of the National Climate Change Strategy (2000)"*(s.5.5).

- Renewable energy is strongly promoted under European Union policy with specific targets set in order to encourage projects over fossil fuel based energy developments.

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- The move away from reliance on fossil fuels for CHP Plants is reiterated in Irish national policy documents.
 - Irish national policy strongly supports the provision of biomass fueled CHP, with specific reference to large-scale biomass CHP Plants.
 - Specific targets for installed CHP capacity were set as 400 MW by 2010 and 800 MW by 2020; the 2010 target has not been met and the 2020 target is unlikely to be met based on current trends.
 - The National Spatial Strategy recognizes that rural areas provide opportunities in terms of developing renewable energy.

9.3 Regional Level

9.3.1 Regional Planning Guidelines, 2010 – 2022

The subject site is located on lands within a Primary Dynamic Cluster (Naas, Newbridge and Kilcullen) within the Hinterland Area.

The SEA associated with the RPG's identifies increased use of renewable energy as a target for reducing greenhouse emissions.

- The Regional Planning Guidelines recognizes the need to increase use of renewable energy.

9.4 Kildare County Development Plan, 2005 - 2011

9.4.1 Relevant Policies and Objectives

Sustainable Infrastructure:

Strategic Objective *"To provide infrastructure and transportation in accordance with the principles of sustainable development"*(s1.3).

The proposed development fully accords with the principles of sustainable development with specific reference to the fact that it provides a viable alternative to fossil fuel CHPs and has a carbon neutral footprint.

Energy:

Policy ED 12 *To support renewable energy initiatives* (s2.4.3)

Section 8.3	<i>"To <u>support national policy for the provision of new and innovative sources of renewable energy</u> and recognise that the development of such technology is a key component of environmental policy"</i> (emphasis added).
8.3 Objectives	<p><i>(1) To ensure energy supply and distribution in the county is expanded and upgraded as necessary to support an efficient and vibrant economy.</i></p> <p><i>(2) To support national policy for the provision of new and innovative sources of renewable energy and recognise that the development of such technology is a key component of environmental policy.</i></p> <p><i>(3) To ensure that the location of renewable energy structures should minimise and/or mitigate any adverse visual impacts on the built or natural environment.</i></p>
Policy EN 2	<i>"To support national and international initiatives for limiting emissions of greenhouse gases through energy efficiency and <u>the development of renewable energy sources which makes use of the natural resources of the county</u> in an environmentally acceptable manner, where it is consistent with the proper planning and sustainable development of the area"</i> (s.8.4.1)

The Development Plan specifically supports renewable energy initiatives provided that associated visual impacts are minimized. The location of the proposed development adjoining an established industrial park with large-scale industrial buildings will ensure that the proposed development will not be conspicuous within the landscape or appear as an incongruous entity. Furthermore the distance of the site from public roads, combined with the existing and proposed screen planting around the perimeter of the site will ensure that the visibility of the proposed development will be minimized.

Biomass Energy:

s.8.8.0	<i>There is <u>huge potential</u> for the development of biomass in Ireland. Although this industry is currently modest in scale, Ireland's growth rate, technological advances, and the deregulation of the electricity industry together with stricter controls on waste management will result in an increase in applications for biomass installations</i>
BE 1	<i>To facilitate the development of projects that convert biomass to energy.</i>

-
- BE 2 *To locate biomass installations in areas that do not affect residential or visual amenity and which are served by public roads with sufficient capacity to absorb increased traffic flows (s.8.8.1).*

The Development Plan actively supports the conversion of biomass to energy provided that it does not impact on residential or visual amenity and has sufficient road infrastructure to deal with increased traffic flows. The proposed development is located in an area where there is a notable absence of residential dwellings in the vicinity. In relation to the one-off residential dwellings which are present, the EIS clearly demonstrates that there is no risk to the health of the occupants from the proposed development or any potential for adverse impact from noise disturbance. The issue of visual amenity has been addressed above. In relation to road infrastructure the site there is an established national and local road infrastructure serving the existing industrial estate. The proposed increase in traffic (24 movements a day during operational phase) is addressed in the EIS and found not to have an adverse impact on the carrying capacity of the road.

Landscape:

- Map No.18 The site is located within the Northern Lowlands where the following policies, inter alia, apply:
- LA 3 To continue to permit development that can utilize existing infrastructure, whilst taking account of local absorption opportunities provided by the landscape, landform and prevailing vegetation.
- LA 4 To continue to facilitate appropriate development in an appropriate manner, that respects the scale, character and sensitivities of the local landscape, recognising the need for sustainable settlement patterns and economic activity within the County.

The site is located in the Northern Lowlands, where the Development Plan seeks to continue appropriate development that can use existing infrastructure and be absorbed into the landscape.

The site is situated between lands zoned for industry/warehousing under the Naas Environs Map and lands to the west which are zoned 'H' (Industrial & Warehousing) under the Newbridge Local Area Plan 2003. Given the largely industrial character of the lands in this general area, and the fact that this will be further reinforced when the zoned lands are developed, it is submitted to the Council that the landscape context

for the proposed development will alter significantly over the short-medium term future. Site works have already commenced on the 'H' zoned lands.

The proposed development connects into an established road network designed to deal with truck movements. The location of the development adjoining large-scale industrial buildings, removed from public roads and enclosed by mature screen planting, means that the visual impact will be negligible.

Bloodstock Policy:

10.2.1 Goal *In recognising the importance of the bloodstock industry in the county, both in land use and in terms of the direct and indirect employment generated by it, the Council will continue to support and encourage the development of a vibrant bloodstock industry, which plays a major role in the rural economy.*

EQ 2 *To encourage the expansion of the bloodstock industry by protecting the environment and amenity value of rural areas, from encroachment by urban sprawl and incompatible development.*

The applicant is acutely aware of the responsibilities in terms of preserving the bloodstock industry in Kildare. The Council are referred to the expert report prepared by Dr. Kevin Dodd from UCD Veterinary School which conclude categorically, based on real world comparisons, that there will be no adverse impact on the equine industry arising from the proposed development.

Agriculture

Section 2.1.1 *The decline in agricultural ... is likely to continue in the future. In Kildare the percentage share of total employment in agriculture in the county has dropped from 7% to 4.16% over 6 years, and by 3.7% in manufacturing industry.*

10.1 (A) Agriculture *There are approximately 112,518 hectares (278,032 acres) of land farmed in County Kildare with approximately 29,500 hectares (52,895 acres) under tillage and the balance in grassland.*

"The widening gap between farming incomes and the rest of the economy is becoming more apparent and necessitates the need for strategic development within the agricultural sector for diversification. The percentage share of total employment in agriculture in the county fell from 7% in 1996 to 4.16% in 2002".

AG 1 *To support agricultural development and encourage the continuation of agriculture as a contributory means of maintaining population in the rural area.*

The Development Plan notes that there has been a significant and continuing decline in agricultural employment and that this needs to be addressed by means of supporting agricultural development and increasing diversification. It is submitted to the Council that the proposed development will provide a new source of income for the (tillage) farming community. The proposed development will create a market for straw and provide an assurance for farmers in terms of guaranteed sales over a fixed-period.

The Council are referred to a recent article in the Irish Times (dated 9th June 2010) which confirms the significant decline in farm income amongst arable farmers and a letter of support from the Irish Farmer's Association ([Appendix E](#)).

9.4.2 Compliance with Zoning Objective

The subject site is not zoned.

Policy OD 1 of the County Development Plan 2005 – 2011, addresses land uses in the rural countryside (i.e. unzoned lands). It states that:-

"apart from housing development, there are other land uses which may be considered in the rural countryside. Where an area is not within an identifiable settlement, and is not otherwise zoned as part of this development plan, or of any of the town development plans, the use of such land will be deemed to be primarily agricultural".

It is submitted to the Council that this policy does not place a blanket prohibition on development within the rural countryside. In this regard the following permissions are relevant:

1. PL09. 233725 (Ref 08/1668):

The applicant sought permission for a proposed Agricultural Biopark (consisting of an anaerobic digester, a rape seed processing facility and a fuel pellet production facility) in Ricketstown / Ballyraggan, Castledermot, Co. Kildare.

The following extract from the ABP Inspector's report is of particular note wherein the inspector considers that although the site is located on unzoned lands this must be balanced against agriculturally related industries in rural area and the policies to support biomass installations and therefore does not materially contravene the Development Plan:

"Whilst the proposed development site is located in an area which the Planning Authority considers to be primarily agricultural this must be balanced against the wider objectives of the County Development Plan which permit agriculturally related industries in rural areas provided they are which are environmentally sustainable. The Plan also seeks to encourage waste prevention, minimisation, reuse, recycling and recovery as methods of managing waste, and to allow biomass installations provided they do not affect residential or visual amenity and that they are served by public roads with sufficient capacity to absorb the increased traffic flows. In my opinion, the principle of the proposed development, with particular reference to the proposed digester, conforms with the achievement of the wider strategic objectives of the Development Plan in terms of waste management and energy recovery". (p.21)

Copy provided in [Appendix F](#)

It is submitted to the Council that the proposed biomass CHP Plant meets the same tests applied to the agricultural biopark i.e. agriculturally related industry and biomass installation.

2. PL09.205850 (Ref. 03/1956)

Permission was granted for a large-scale industrial development (5,799sq.m) on unzoned lands adjoining Toughers Business Park (see [Appendix G](#)).

3. Planning Ref. 06/2712

In granting permission for industrial development on unzoned lands north of the subject site, the Planning Authority placed significant weight to the fact that Policy OD1 refers to the use of rural lands being "primarily" rather than "solely" for agricultural use. As such, if this policy is interpreted to read that uses other than those solely for agricultural use are permissible, then alternative uses such as that proposed are acceptable in principle.

More importantly the proposed development represents an agricultural related form of industry. **Policy OD 4** states that:-

"Agriculturally related industries which are environmentally sustainable are, in general, considered a suitable use, subject to the development of tourism, the protection of amenities (including rivers, lakes and canals), and the protection

of the requirements of certain activities, such as those associated with the bloodstock industry”(emphasis added)

It is important to note that the development plan does not state agricultural industry but agriculturally “related” industry which is an important and critical distinction. Reference is again made to the ABP Inspector’s report under **PL. 09.233725** where the proposed agricultural biopark (which effectively is another form of green energy production) was accepted in principle under Policy OD4.

The proposed development will rely on the production of wheat by farmers as its primary fuel source. The secondary fuel sources are also sourced from farmers. The proposed development involves the replacement of fossil fuels to create energy with renewable energy sources and therefore qualifies under the environmentally sustainable test. The proposed development is located beside an established industrial park and not near any tourism facilities. There are no amenity areas of recognized value within the vicinity of the site. Finally the EIS clearly demonstrates that the emissions associated with the proposed development are notably low and there is no evidence (including real world experience from the Ely Plant) that they will have an adverse impact on the bloodstock industry.

Finally reference is made to **Policy OD7** which clearly states that “All other development including horticulture, nursery stock, mushroom or other ancillary enterprises, will be treated on its merits having regard to the interests of amenity and the inherent requirements of the bloodstock Industry”.

Given the fact that the EIS clearly demonstrates that there will be no adverse impact on the amenity areas or the bloodstock industry the proposed development can be considered in a rural area under this policy and would not materially contravene the development plan.

In view of the above it is submitted to the Council that **the proposed development does not involve a material contravention** of the current development plan.

It is important to note that the site directly adjoins lands which are zoned ‘NE 1’ (Industry/Warehousing) under the Naas Environs zoning map (23.1)

9.5 Draft Kildare County Development Plan 2011 – 2017

The Draft CDP is currently on public display. The Draft Plan specifically addresses the development of green energy projects in the rural countryside stating that:-

"Rural areas have the potential to be harnessed for renewable energy projects – including wind, hydro and solar energy. In addition, waste to energy projects, such as bio-mass, anaerobic digestion and dry digestion may be suitable subject to planning and development considerations. The Council will support renewable energy projects in rural areas. However, it is mindful of the need to protect landscape sensitivities, residential amenities, views or prospects, public rights of way, wildlife, habitats, special areas of conservation, protected structures, bird migration paths etc. (s.10.4.8 Green Energy Projects).

This statement in the Plan clears up any ambiguity that surrounded the need for a material contravention process to be involved in supporting renewable energy developments in the countryside.

Under Map 14.2 (Landscape Sensitivity Areas) the subject site is situated within an area of Low Sensitivity. Policy LL 1 seeks *"To recognize that the lowlands are made up of a variety of working landscapes, which are critical resources for sustaining the economic and social well-being of the county.*

- It is the policy of the Kildare County Development Plan to support and facilitate renewable energy projects with specific reference to biomass developments (subject to residential/visual amenity and road infrastructure)
- The proposed development is located away from residential development, adjoins an industrial estate with large-scale buildings and will be situated on an established road network designed to accommodate truck movements
- The subject site is located in a non-sensitive landscape where continued appropriate development can be absorbed
- The issue of potential impact on the bloodstock industry is recognized and is addressed in detail in the accompanying EIS
- The Development Plan recognizes that the significant decline in agricultural employment within the county needs to be addressed by means of investment in agriculture and diversification.
- There is established Kildare County Council and An Bord Pleanala precedent for granting permission for large-scale industry on unzoned lands adjoining the Tougher Business Park
- The subject site directly adjoins lands zoned for industrial/warehousing development which is highly compatible with the proposed landuse.

-
- Green energy projects, including biomass developments, are acceptable in principle in rural areas under the current Draft Development Plan 2011 - 2017

10.0 DOEHLG CONSULTATION PAPER, 2007

A Consultation Paper on proposed planning exemptions for certain Renewable Energy Technologies was produced by the DoEHLG in October 2007. The Paper addressed five classes of renewable energy where exemptions from planning permission were being considered. Exemptions for Combined Heat and Power installations (CHP), including biomass and non-biomass CHP) were considered as one of the classes. While the CHP Plants under consideration for exemption are approximately 1/3 the size of the current application, the consultation paper includes a number of important statements in relation to large-scale biomass CHP Plants and CHP Plant emissions:

The paper makes reference to the Department of Communications, Marine and Natural Resources' *Consultation on National Energy Efficiency Action Plan* October 2007 which notes that:-

"The use of CHP in particular has the potential to make a major contribution to efforts to reduce CO2 emissions; it is estimated that 1MW provided by CHP results in savings of 0.6Kt of CO2 where CHP replaces an electricity based alternative" (p.15)

The Paper also states that large scale CHP *"may be appropriate for industrial or commercial sites"*(p.15).

The following extracts from the Consultation Paper were considered relevant to the current application:

Emissions *"Emissions from CHP include steam, a small amount of carbon dioxide, and N_{ox} & S_{ox} in small quantities. However, emissions are still much lower than that of standard oil and gas boilers".*

Visual Impact *A CHP system itself can have varying visual impacts. Enclosed CHP units are generally less visually intrusive than non-enclosed units where the various constituent elements are visible and can appear more visually disordered. The physical dimensions of an enclosed CHP unit itself will also vary according to energy requirements and output.*

Visual impacts will also tend to vary according to the nature of neighbouring development, and the surrounding landscape. For instance, a large CHP attached to an industrial building located in an industrial estate will obviously be far less visually intrusive than a large CHP on a farm in an area of outstanding natural beauty.

Noise

CHP facilities emit noise during normal operation and indeed, some very large-scale CHP plants can create noise levels exceeding 85 db(A). However, measures can be taken to ensure that noise emissions from units do not cause disturbance to neighbouring properties or within a surrounding area.

The Paper recommended two different sets of conditions for CHP exemptions. The first exemption applies to industrial sites; the second applies to commercial (including hotels and leisure centres), public buildings (including hospitals and educational facilities), and CHP systems within farmyard complexes. The physical dimensions of the structure have been chosen on the basis that a structure of this size could house a CHP system with an output of up to 5MW.

- Biomass CHP Plants make a major contribution to the reduction of CO₂ emissions.
- Large-scale biomass plants maybe appropriate for industrial or commercial sites.
- Emissions from biomass CHP Plants are lower than oil and gas boilers.
- Enclosed CHP units are generally less visually intrusive.
- Large CHP attached to an industrial building located in an industrial estate will obviously are less visually intrusive.
- While CHP plants generate noise, measures can be taken to ensure that noise emissions from units do not cause disturbance to neighbouring properties or within a surrounding area.

11.0 ADDITIONAL ISSUES

11.1 Appropriate Assessment

The subject site is not located within close proximity to of any Natura 2000 sites in Kildare. The Grand Canal is located approximately 4.5 kilometres to the east of the site. There is no potential for adverse impact on the canal.

See Map of SPAs and SPCs in [Appendix H](#).

11.2 Flooding

There are no water courses in the vicinity of the site and there is no known flooding of the site. The proposed attenuation pond will restrict surface water flows to existing levels.

11.3 Leinster Orbital Route

A feasibility study was carried out in 2007 by Roughan & O'Donovan- Faber Maunsell Alliance in relation to the provision of a Leinster Outer Orbital Route from Navan, Co. Meath to Naas, Co. Kildare. Map R3a shows a proposed route connecting with the M7/M9 via lands between Naas and Newbridge, along with 3 other variant routes further north (see [Appendix I](#)).

The subject is located within the corridor route running between Naas and Newbridge.

It is important to note the following in relation to the LOOR corridor route running between Naas and Newbridge:

- The LOOR study referred to above has only feasibility status
- There is no provision for the LOOR in Transport 21
- There is no provision for the LOOR in any of the relevant council's Section 48 schemes
- The LOOR corridor route covers a vast amount of land, only a small proportion of which will actually be required for the road
- Part of the LOOR corridor is shown running through an established business park Tougher's Business Park and therefore this part of the corridor is highly unlikely to actually be realized
- No viable option to provide the road within the corridor could pass through the site.

The NRA was contacted to discuss the proposed development as advised. However the NRA specifically stated that they do not meet with private developers (see letter from NRA in [Appendix J](#)).

- The site is not located within proximity to any Natura 2000 site
- The site or the area in the vicinity of the site is not subject to flooding
- There is significant ambiguity regarding the delivery of the LOOR, which is not included in Transport 21 or the Kildare Co. Co. Section 48 Scheme.
- If however the potential route between Naas and Newbridge does proceed, it would have to run through an established industrial estate to affect the subject site (which is highly unlikely).

12.0 CONCLUSION

Organic Power Limited proposes to construct a biomass CHP Plant on unzoned lands directly to the south of Toughers Business Park, midway between Naas and Newbridge. The CHP Plant will be fueled primarily by wheat and is based on a model which has been operating in Denmark since the early 1990s as well as other European countries including Sweden and England. Biomass CHP Plants are not a new technology in Ireland with 3 no. plants currently operational, however the proposed development will be the first wheat fueled biomass CHP Plant in Ireland.

Organic Power Limited are an Irish based company with a track record in delivering green energy projects throughout the country.

The location has been chosen having regard to the supply of wheaten straw and its proximity to large-scale industrial buildings, its distance from the public road, the existing screening around the perimeter of the site and the distance from residential areas.

The CHP Plant can only use specific types of fuel i.e. dry organic materials such as wheat, wood chip, and miscanthus. If alternative fuel sources are used the sensitive machinery will fail. As such municipal waste, abattoir waste, food waste etc cannot be used to fuel the plant.

The proposed development fully accords with European, national, regional policies. Specific reference is made to the target for installed CHP capacity of 800 MW by 2020, with an emphasis on biomass fueled CHP.

The policies in the current Kildare County Development Plan seek to support and facilitate renewable energy projects with biomass energy projects being specifically referred to. The subject lands are unzoned, however, there is established precedent for granting permission for industrial type developments in the immediate vicinity without recourse to a material contravention process.

The benefits of the proposed development include:

- The significant positive impact on the environment by introducing renewable energy sources which reduce the need to rely on fossil fuels (the proposed development will eliminate the emission of over 80,000 tonnes of carbon dioxide equivalent emissions from fossil fuel combustion annually based on mix of coal, oil and gas.

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- The generation of electricity which can be sold back to the grid and heat which will be harnessed by local industries in the area.
 - The provision of on-site employment for 9 people as well as 6 off-site transportation related jobs.
 - The primary economic benefit is the downstream benefits that will arise for the arable farming community who will receive a guaranteed income for a residual agricultural produce which is currently only of minimal value if a buyer can be found or is ground back into the earth. This creation of a new market for straw will help stem the decline of farming within Kildare and adjoining counties.

An Environmental Impact Statement is not required for a CHP Plant of this size, however, given the fact that this is a 'first of its kind' development in Ireland and in the interest of providing all available information to the public, an EIS has been prepared and submitted with the application. The EIS notes that emissions from biomass plants are very low compared to other forms of combustion heating because of the low quantity of emission sources in biomass. The EIS concludes that there will be no significant impact on the environment subject to appropriate mitigation measures being implemented.

In view of the above is submitted to the Council that the proposed development complies with the provision of the County Development Plan and represent proper planning and sustainable development of the area.

Signed:

David Mulcahy

Chartered Planning Consultant

Ba. Mod., MRUP, MSc. Urban Design, MIPI, MRTPI

APPENDICES:

- A Extract from The European Waste Catalogue and Hazardous Waste List, 2002 demonstrating that it only refers to "spoilt straw" (i.e manure) constituting waste and makes no reference to "straw" as being a form of waste & extract from Waste Framework Directive 2008/98/EC demonstrating that straw not considered as waste.
- B Site Layout and reasons for refusal for previous application for soccer complex on part of the subject site (Ref: 09/170)
- C Site Layout for 3 phase industrial development including development on unzoned lands.
- D ABP Inspector's Report confirming that application for biomass CHP Plant is subject to Strategic Infrastructure Development application on basis of fuel type (waste).
- E Article in Irish Times (dated 9th June 2010) which highlights significant reduction in income for arable farmers in Ireland & letter of support from **IFA**
- F Extract from ABP Inspector's report allowing for agriculturally related industry and biomass installations (agricultural biopark) on land zoned primarily agricultural.
- G Extract from ABP Order and Inspector's Report where permission was granted for a large-scale industrial development (5,799sq.m) on unzoned lands adjoining Toughers Business Park (PL09.205850).
- H Map of SPAs and SPCs (source: Kildare Waste Management Plan)
- I Map from Feasibility Study was carried out in 2007 by Roughan & O'Donovan-Faber Maunsell Alliance in relation to the provision of a Leinster Outer Orbital Route from Navan, Co. Meath to Naas, Co. Kildare (Map R3a).
- J Letter from NRA confirming that they do not provide advice to developers.

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- I Map from Feasibility Study was carried out in 2007 by Roughan & O'Donovan- Faber Maunsell Alliance in relation to the provision of a Leinster Outer Orbital Route from Navan, Co. Meath to Naas, Co. Kildare (Map R3a).

J Letter from NRA confirming that they do not provide advice to developers.

**RE:/ Planning Permission is sought for a development which will consist of the following; 1. Phase 1 - Two number playing pitches including one no. sand based all weather pitch 2. Phase 2- Unlicensed 1638sq.m Two Storey Clubhouse building (1383sq.m ground floor, 255sq.m first floor) comprising changing facilities, committee/staff rooms, offices, corporate/sponsor suites, gymnasium and sports hall with ancillary fundraising/awards use. 3. Signage, 184 car parking spaces, 3 coach parking spaces, fencing, services, lighting, landscaping, site development works and ancillary works on a 2.5 ha. Site at Toughers Business Park, Lewinstown, Newbridge, Co. Kildare
Pat McNally, Secretary, Kildare & District Underage Leage Academy 09/170**

1. The proposed development is located in a rural area outside the development boundary of any urban area. The provisions of the Development Plan deem that land not within an identifiable settlement and not otherwise zoned shall be deemed to be primarily agricultural (section 6.7.3 OD1 of CDP 2005 refers). The proposed development is considered to be an inappropriate use for this rural area, would be detrimental to the balanced development of Naas and Newbridge and would contravene materially the objectives in the Development Plan 'Other Developments in the Rural Countryside'. The proposed development if permitted, would therefore be contrary to the proper planning and sustainable development of the area.
2. Having regard to the location of the site approximately seven kilometers from any nearby town, and to the lack of adequate footpaths, cycle lanes, public lighting and public transport servicing the site, it is considered that the intensification of use which would result from the proposed development, including coach and car trips, and young people walking and cycling to the proposed facilities, would endanger public safety by reason of traffic hazard and would therefore be contrary to the proper planning and sustainable development of the area.
3. The proposed development is of a size and scale which is incompatible with the rural character of the area. Furthermore, the proposed development would involve the introduction of a sports club/recreational type of development into the open rural landscape, and would consequently result in an excessive density of development in a rural area, contrary to the provisions of the County Development Plan, wherein it is the Council's policy that the land use will be primarily agricultural, and would therefore be contrary to the proper planning and development of the area.
4. It is considered that the proposed access through a business park would be unacceptable and would result in conflicting movements of vehicles,

pedestrians and cyclists which would endanger public safety by reason of a traffic hazard and obstruction of other road users. The proposed development would therefore contravene with the Department of Transport's publication 'Smarter Travel – A Sustainable Transport –New Transport Policy for Ireland, 2009-2020', and would therefore be contrary to the proper planning and development of the area.

5. The proposed development is located within the Hinterland Area as designated under Regional Planning Guidelines for the Greater Dublin Area 2004-2016. Strategic planning policy in the form of the Regional Planning Guidelines, the Department of Transport's publication 'Smarter Travel, and the Strategy for Sustainable Development, are strong on the need to consolidate development within designated centres, to enhance the public transportation system and to maintain the demarcation between urban and rural areas. It is the stated policy of these guidelines that such areas are kept free from encroaching development that could be more appropriately facilitated in towns and villages.

The development of a large recreational facility as proposed in this rural area would be unsustainable as it would lead to increases in private transport, demands on servicing and would have a negative impact on the development of Naas and Newbridge. The proposed development would mitigate against the strategic objective of concentrating future growth into designated development centres, particularly where suitable zoned lands are available, and would undermine the strategic objective of securing a clear distinction between urban and rural areas. It is considered that the proposed development is fundamentally unsustainable and contrary to the aims and objectives of national and regional policy. Accordingly to permit the proposed development would be contrary to the proper planning and sustainable development of the area.

Falling farm incomes hit 10-year low

OLIVIA KELLY, IRISH TIMES, 9th June 2010

FAMILY FARM incomes dropped by almost one third last year due to a continuing fall in food prices, according to new figures published by agriculture development authority Teagasc.

Average farm incomes last year were just €11,986, their lowest level in 10 years, with incomes recorded at €11,088 in 1999.

However, when the figures are adjusted for inflation, farm incomes are actually 43 per cent below 1995 levels.

The decline last year follows a 13.7 per cent drop in incomes in 2008, bringing the overall drop in family farm income to more than 40 per cent since 2007.

The Teagasc National Farm Survey found that full-time farmers, particularly those involved in specialist dairy and tillage farming, were the worst hit due to poor market returns for milk and cereal.

Farmers are becoming increasingly dependent on subsidies and off-farm incomes to make ends meet, the survey found.

Declining prices for farm products had the biggest impact on full-time commercial farmers, whose incomes fell from €37,590 in 2008 to just €24,214. Incomes for those farming full-time have halved since 2007, the survey found.

Those farming only part-time sustained less of a hit, with incomes down by 13 per cent to an average of €6,611. However, part-time farmers struggled to find off-farm employment opportunities to supplement farm incomes.

While in more than half of all farming families the farmer and/or spouse had an off-farm job, employment rates for farmers were down by 3.7 per cent last year. Almost 80 per cent of farm families were reliant on some form of non-farming income from sources such as other employment, pension or social welfare.

Senior Teagasc researcher and head of the farm survey department Liam Connolly said while income fell in almost every type of farm, those focused on full-time dairy and tillage farming experienced the greatest losses.

"Milk prices dropped by 30 per cent, resulting in a 48 per cent decline in income on specialist dairy farms. The last two years have been disastrous for tillage farmers, who have seen their average family farm income drop by 62 per cent from 2007 levels."

Direct subsidy payments continued to be "extremely important" to farm businesses, Mr Connolly said. The average direct payment in 2009 to farmers was €17,109, accounting for 36 per cent of gross output and 143 per cent of family farm income.

The average family farm income last year ranged from €23,684 on specialist dairy farms to €6,563 on cattle-rearing farms. On tillage farms average farm income was €15,247, while on sheep farms the figure was €9,688. Sheep farmers were the only farming group that showed a small increase of 1 per cent in family farm income last year.