Utilyx

Monetising Natural Capital through Environmental Profit & Loss for Decentralised Energy Assets

Summary Report
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Experts in energy

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Utilyx

A New Chapter: Monetising Natural Capital through Environmental Profit & Loss for Decentralised Energy Assets

Businesses today face many disruptive forces and potential economic uncertainty particularly with regards to future energy price, security of supply and policy.

This uncertainty is bringing a heightened focus on the true sustainability of all energy generating assets and we are starting to see specific sustainability criteria being imposed via government incentive policy but equally from the investment community. The valuation of our impact on the planets natural capital is supported by the United Nations and the Principles of Responsible Investment of whose members have in excess of US$30 trillion under management.

To establish a business sustainable evaluation of our energy assets we needed to measure and protect what nature gives us for free and remove that economic invisibility to ensure that future income and growth are sustainable.

An Environmental Profit & Loss Account is a means of placing a monetary value on the environmental impacts along the entire supply chain of a given business.

Though we pay fees to utilities and local authorities for services such as the treatment and supply of water, or the disposal of waste, the true costs of our environmental impacts remain externalized and unaccounted for. The EP&L represents how much we would need to pay for the impacts we cause and the services nature provides.

The staggering predictions of £110billion of funding expected mainly from the private sector, required to upgrade and replace the UK aging infrastructure will come from many of these member organisations.

We have an incredible opportunity, whilst realising this infrastructure overhaul, to ensure our energy future is built on sound natural capital credential which will serve our communities for generations to come.

There is an increased momentum for investment appraisals to evaluate on a double or triple bottom line approach of economic, environmental and social community impact and the Green Investment Bank is one of the leading members of the financial community to use this to evaluate as part of its return and impact on investment.

In establishing a measurement of the impact on the environment for energy generating assets as a long term credible investment we had to establish a value on nature and measure performance against an recognised industry benchmark.

As we researched the methodology with our partner Trucost it was crucial that we established a total natural capital cost of ownership over the life term of the asset and compared it to our benchmark of Department for Environment, Food and Rural Affairs, DEFRA's, GHG intensity of 590g CO_2e per kwh.

In monetising environmental impacts, Utilyx is also future proofing business against future policy and legislative changes which are likely to occur in the coming years such as taxes on carbon, GHG's and other aspects of the ecosystem.

Puma's recent Environmental Profit & Loss at a Corporate level has demonstrated the powerful impact that governance & leadership can have in transforming a business's true sustainability vision. Furthermore The Economics of Ecosystems and Biodiversity (TEEB) study on valuing natural capital draws attention to the global economic benefits of biodiversity and it is this international momentum that is rapidly gaining the attention of global organisations and accounting bodies who are considering how these critical environmental externalities not currently valued in a typical profit & Loss account can be valued.

An increasing priority for sustainable forward focused business is to measure the impact on the environment of energy assets. The challenge is to deliver value to stakeholders, deliver a return on investment to the business and its investors and measure progress to returning net positive value to our planets natural capital.

The consequences of climate change are sobering. A four degree warmer world will translate into massive disruptions in our most basic systems - water supply; food security; coastal cities and populations in low lying areas where the worst impacts are projected to fall upon the most vulnerable members of society . Decarbonisation is prima facia the means to circumvent this future outcome however it must be complemented by a full evaluation of the impact of our natural capital.

As our Environmental Profit & Loss reports demonstrate, decentralised generation of heat and power is both an economically efficient and practical solution to the UK's energy problem and has the potential to have a significant impact on decarbonising the UK's electricity system.

This New Chapter must evolve in concert with business models that are scalable, viable systems on the ground, delivering critical and affordable low carbon energy in a way that is monetised and sustainably accounted for both environmentally and financially.

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Introduction

Project overview

Utilyx has acknowledged the opportunity to calculate the environment benefits of the environmental benefits of the energy centre at Addenbrooke's hospital based in Cambridge, United Kingdom which deploys a decentralised energy solution comprising Combined Heat and Power (CHP) technology, gas boilers, a biomass boiler and an incinerator. The energy centre has an accompanying environmental footprint which is to provide a net benefit in comparison to operations should the energy centre not have been constructed. This assessment quantifies the environmental impacts associated with the activities of the energy centre (including its construction and operation) compared against an appropriate baseline candidate over a 25 year lifetime. For each activity, we considered the most material environmental key performance indicators (eKPIs) including greenhouse gases (GHGs), air pollution and water consumption, and used a combination of primary and secondary data sources to quantify each impact.

Utilyx independently commissioned Trucost to calculate the environmental benefits of the energy centre at Addenbrooke's hospital. In order to identify these, a monetary value has been placed on each impact by conducting an Environmental Profit and Loss (EP&L) account for the decentralised energy technology and the baseline candidate. An EP&L is a means of placing a monetary value on the environmental impacts or use of natural capital along the entire value chain of a business. It represents the external non-marketed costs that would need to be paid for the impacts caused and the services nature provides that enable companies to produce and distribute their products and services.

The net environmental benefits associated with the new technology used at the plant are expressed by subtracting the EP&L of the new technology from the EP&L of the baseline candidate. Providing goods and services will always have some impact on the environment. By quantifying the reduction in the environmental costs achieved by new technologies, this analysis demonstrates how Utilyx can continue to deliver value to its customers and investors and at the same time look for ways to return value to the environment. Additional context on the importance of valuing natural capital is provided below.

Gross environmental cost savings – Whole life (The Asset EP&L)

		Environmental cost (£)		
Activity	**Emission type**	**Addenbrooke's**	**Baseline Candidate**	**Savings**
Generation of electricity and heat from Addenbrooke's energy centre	GHG emissions (tCO2e)	2,261,473	4,479,162	55,442,225
	Air pollution (t)	50,393	407,949	8,938,900
	Heavy metals (t) (Operations only) of waste wood	0.2	2,867	71,675
	Water consumption (m3)	6,874	125,280	2,960,175
	Water pollution (tCOD) (Operations only)	15,471	342,55	8,177,075
Energy centre construction	GHG emissions (tCO2e)	660,198	0	-660,198
	Air pollution (t)	110,840	0	-110,84
	Water consumption (m3)	38,133	0	-38,133
Diversion of waste wood from landfill	GHG emissions (tCO2e)	0	173,188	4,329,700
	Air pollution (t)	0	4,496	112,400
	Waste disamenity (t)	0	10,299	257,475
Total		**3,143,381**	**5,545,796**	**79,480,454**

The importance of placing a monetary value on nature

Natural capital – why does it matter?

Natural capital is the term used to describe the natural resources that companies rely on to produce goods and deliver services. The World Bank (2012) suggests that 36% of wealth in 43 countries comes down to water, forests, and other ecosystems that provide vital goods and services that make up natural capital. Businesses depend on natural assets that are non-renewable (e.g. fossil fuels and minerals), as well as renewable ecosystem goods and services, such as freshwater, timber and a stable climate. Decisions around operations, supply chains and products drive use of natural resources and effects on them. The capacity for renewable natural resources to regenerate over time affects the availability of stocks. Their ability to absorb unwanted by-products of production such as pollution and waste is limited. But the value of access to land, clean air and plants that provide critical inputs such as food, energy and fibre is usually excluded from financial accounts.

Mounting evidence of growing pressure on natural assets is set to change this. With accountants, actuaries, trade bodies, management consultants, economists and financial institutions all trying to understand natural capital risk, it is clear that financial capital is at stake. A KPMG survey of accountancy professionals and CFOs/senior management found that loss of biodiversity and ecosystem services exposes companies to new risks and opportunities that can affect profit, asset values and cash flows, yet these issues are often overlooked in materiality assessments due to low or uncalculated market-based value (KPMG, 2012).

The World Trade Organization (2010) warned that environmental effects unpriced in markets (externalities) are among failures in natural resource sectors that raise questions about resource efficiency. The Organisation for Economic Co-operation and Development (OECD 2012) has warned that degradation and erosion of natural environmental capital is expected to continue to 2050, with the risk of irreversible changes that could endanger two centuries of rising living standards. The OECD calls for urgent action now to avoid significant costs of inaction on managing and restoring natural assets. Understand natural capital risk, it is clear that financial capital is at stake.

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The six principles for responsible investment (PRI, 2012)

Principle 1:	We will incorporate ESG issues into investment analysis and decision-making processes.
Principle 2:	We will be active owners and incorporate ESG issues into our ownership policies and practices.
Principle 3:	We will seek appropriate disclosure on ESG issues by the entities in which we invest.
Principle 4:	We will promote acceptance and implementation of the Principles within the investment industry.
Principle 5:	We will work together to enhance our effectiveness in implementing the Principles.
Principle 6:	We will each report on our activities and progress towards implementing the Principles.

The World Economic Forum (2013) sees water supply and food shortage crises, GHG emissions and extreme volatility in energy and agricultural prices as some of the most material and likely risks facing the global economy in the next 10 years. Droughts are the world's most expensive natural disaster, costing US$6-8 billion annually and wreaking havoc on food supplies and causing soft commodities prices of crops such as cotton to soar. As the ability of many companies to raise prices lagged rising input costs, earnings and share prices fell. In 2012, Trucost helped McKinsey & Company assess how the price of a common basket of consumer packaged goods might change if it were to reflect the cost of impacts such as GHG emissions and water use, which are largely unpriced until events such as droughts internalize them (McKinsey & Company, 2012). Results shows that the cost of goods including wheat could increase by more than 400% compared with prices in 2012. Environmental costs vary substantially across countries, depending on factors such as water supply and demand. McKinsey & Company (2012) found that the challenge of an era of high and volatile prices requires a step change in the way resources are extracted, converted and used to head off resource constraints over the next 20 years.

Investors set to favour companies that manage natural capital

Material risks from pressure on natural capital were identified in an academic study for the Actuarial Profession (Jones et al., 2013) which found that resource constraints could limit economic growth and lower returns on assets. Companies that manage risks and opportunities are likely to gain an edge in accessing capital, as investors begin to evaluate how they are positioned for mega trends such as population growth, urbanization, economic growth, ecosystem decline, changing environmental policies and climate change (TEEB, 2011). Several academic studies have already found that strong corporate environmental commitments are linked to a lower cost of capital (Deutsche Bank, 2012).

Pressure on companies from investors is set to grow. More than 1,000 fund managers and asset owners with over US$30 trillion in assets have signed up to the UN-backed Principles for Responsible Investment (PRI), which includes a commitment to integrate environmental, social and governance factors into investment decisions (see summary box below). More than 40 financial institutions have also agreed to integrate natural capital risks and opportunities into products and services under the Natural Capital Declaration. They are expected to develop environmental profit and loss (EP&L) accounts by 2015. The Declaration was led by UNEP FI, which recommends that financial institutions embed biodiversity and ecosystem services in finance.

This requires relevant information from companies, and in June 2012, 196 governments at the UN Conference on Sustainable Development committed to taking steps to encourage companies to consider integrating sustainability information into reporting cycles. Fifty-seven countries and the European Commission, along with 86 companies, backed an initiative to factor the value of natural assets such as clean air and water, forests and other ecosystems into business decision-making and national accounting (The World Bank 2013).

Putting a value on natural capital

Business activities such as extraction and production can damage natural capital and cause economic costs that are largely external to market prices. Increasing environmental degradation and resource depletion combined with growing demand for natural capital is making its value more visible. Research for the PRI and UNEP Finance Initiative (UNEP FI) valued resource use, pollution and waste linked to the 3,000 largest publicly-listed companies at US$2.15 trillion in 2008. Government policies to address the environmental impacts of market failures include regulations and market-based instruments which aim to internalize natural capital costs and make polluting activities less profitable. Many OECD countries are starting to apply the "polluter pays" principle to require companies to pay to reduce pollution or compensate for damages. However, without adequate regulations and corrections to market prices, these costs remain largely unaccounted for. Instead, they can be indirectly internalized through pollution, resource constraints and events such as drought driving commodity price volatility. Liabilities can hit cash flows through rising healthcare costs, taxes, insurance premiums, inflation, input costs and the physical costs of environmental degradation and resource constraints (PRI, 2011).

Companies need to improve the way they manage annual flows of natural capital to reduce economy-wide costs. To do this, they need to understand sources of value and risk. Measuring physical flows of resource use, pollution and waste provides a starting point to evaluate which ecosystem goods and services businesses depend on. Applying economic valuations to these quantities is one approach that is gaining ground to strengthen decision-making and risk management. Initiatives such as The Economics of Ecosystem and Biodiversity (TEEB) and World Business Council for Sustainable Development (WBCSD) Guide to Corporate Ecosystems Valuation encourage businesses to evaluate natural capital so that decisions consider related financial risks and benefits. Valuation is essential to understand the true value of environmental assets, according to TEEB's study on managing business risks and opportunities linked to biodiversity and ecosystems. It says that despite uncertainties, economic valuations of ecosystem services can improve decisions around risk management (TEEB, 2011). Twenty-four countries are already using natural capital accounting to strengthen economic decision-making about priorities and investments. To help them do this using an international statistical standard for environmental-economic accounting, the United Nations Statistics Division has developed the System of Environmental Economic Accounts (SEEA Central Framework). It provides a measurement system for environmental issues including water, timber, land and ecosystems, pollution and waste.

Methodology
Defining the project boundary and baseline candidates

The GHG Project Protocol

The environmental impacts associated with Addenbrooke's and the appropriate baseline candidate have been analysed in line with the GHG Project Protocol (see summary box below). Although this protocol relates specifically to GHGs, the guidelines represent a robust, transparent and internationally accepted framework through which to calculate the environmental benefits associated with projects.

Primary and secondary effects

The GHG Project Protocol recommends that all primary and secondary effects associated with a project activity are identified across its entire value chain – including all upstream (inputs to a project) and all downstream (products produced) activities.

A primary effect is an intended change caused by a project activity. There are six generic types:

1. Reductions in combustion emissions from generating grid-connected electricity.
2. Reductions in combustion emissions from generating energy or off-grid electricity, or from flaring.
3. Reductions in industrial process emissions from a change in industrial activities or management practices.
4. Reductions in fugitive emissions.
5. Reductions in waste emissions.
6. Increased storage or removals of CO2 by biological processes.

A secondary effect is an unintended change caused by a project activity. These could be positive or negative and include effects such as those caused by the construction of a plant (one-time effects).

Baseline candidates

The GHG Project Protocol recommends that an appropriate baseline candidate should:

- Provide an identical (or nearly identical) product or service to that of the project activity.
- Feasibly match the lifetime provision of the project (e.g. an alternative is not likely to come to the end of its life/reach capacity of production).
- Be in the same geographic range as the project.
- Be in the same temporal range as the project.
- Be legal (this is particularly apparent where legislation has banned, or restricted GHG emitting practices, and the project is a counter measure to this).

Determining the market penetration of each baseline candidate and apportioning them, gives a 'common practice' baseline, allowing comparison of the impacts of a project to the 'typical' practice currently happening.

An overview of the Addenbrooke's energy centre

The energy centre has replaced the previous Addenbrooke's Hospital Boiler House facilities and provides flexibility and expansion capability to accommodate the future expansion of the Cambridge Biomedical Campus (CBC). The scheme is designed to significantly reduce the carbon footprint of the CBC and lower energy consumption, resulting in the Trust benefiting from a significant saving in energy costs.

The GHG Project Protocol

Rationale

The GHG Protocol for Project Accounting (GHG Project Protocol) provides specific principles, concepts and methods for quantifying and reporting GHG reductions i.e. the decreases in GHG emissions, or increases in removals/and or storage – from climate change mitigation projects (GHG projects).

The Project Protocol is the culmination of a four–year multi-stakeholder dialogue and consultation process, designed to draw knowledge and experiences from a wide range of expertise.

Objectives

- To provide a credible and transparent approach for quantifying and reporting GHG reductions from GHG projects.
- Enhance the credibility of the GHG project accounting through the application of common accounting concepts, procedures and principles.
- Provide a platform for harmonisation among different project-based GHG initiatives and programs (e.g. Clean Development Mechanism).

The energy centre incorporates the following mix of technologies:

1. A Gas-fired combined heat and power unit (CHP), generating 6.8 megawatts electric (MWe). CHP heat recovery steam generator (HRSG) generating approximately 2MWth

The CHP has been sized to generate 6.8MWe of electricity to meet demands, but has the base build capability to generate 7.5MWe to provide flexibility in meeting future requirements. Exhaust emissions from the CHP engine are passed through a Selective Catalytic Reduction (SCR) system then passed through the heat recovery steam generator (HRSG) where the heat generated from the exhaust is extracted, approximately 2MWth. This is converted into steam, which is downgraded to provide space heating and hot water for the CBC. The HRSG incorporates a gas-fired section which provides an additional 2MWth of heat from natural gas. This allows very efficient and quick responses to peak hospital heating demand, avoiding the requirement to keep one of the standby boilers permanently banked. The water used to cool the CHP engine is passed across a heat exchanger to provide low-grade heat supplied at 90°C or above to enable efficient distribution of low temperature hot water (LTHW). This LTHW is then pumped to a selection of plant rooms where the LTHW will satisfy the demand that is currently met by the steam system, thus reducing the load on the steam system hence reducing the sites gas consumption. The CHP plant has been designed to achieve very high levels of efficiency. The CHP plant provides heating and electricity to the CBC, with surplus electricity being exported to the grid.

2. Two biomass steam boilers each of which generate approximately 3MWth

The biomass boilers will operate on waste wood, but the boilers are also able to operate on virgin wood to provide future flexibility and resilience. The system comprises a fuel storage system which utilises a walking floor mechanism to feed the fuel to a conveyor system that in turn delivers fuel to the furnace. An automatic control system incorporates digital process controllers to provide accurate load-following and optimisation of combustion conditions in the furnace. Primary air for combustion is introduced at each side of the grate air-box with a balancing damper in the connecting duct to ensure efficient distribution over the width of the grate. The secondary combustion chamber ensures complete burn-out of all organic material and gases. Residence times are above two seconds at in excess of 850°C.

Due to the boilers processing waste wood, the systems have to be compliant with the Waste Incineration Directive (WID). As such each system includes a high level of flue gas filtration and Continuous Emissions Monitoring Systems (CEMS) maintaining compliance with the WID requirements.

3. Clinical waste incinerator generating 1.6MWth, incorporating redundant HRSG

The clinical waste incinerator has the capacity to process to up to 350kg/hr of clinical waste and is designed to operate for a maximum 7,300 hours per year. The clinical waste incinerator, and accompanying HRSG, generates 1.6MWth. In the primary combustion chamber, a stepped and cascading hearth arrangement reduces the solid wastes to fine bottom ash and an afterburning secondary combustion chamber where the process gases are further burnt and treated ensuring low emissions. The chamber is designed to accept the solid wastes on a continuous basis for indeterminate periods. The resultant bottom ash is continually discharged into a sealed skip for offsite disposal. The secondary combustion chamber is a static unit that is internally configured to create an oxygen rich, high temperature and turbulent environment that ensures the complete oxidation of any partially burnt flue gas. Continuous Emissions Monitoring System (CEMS) have been provided.

4. Three dual fuel conventional steam boilers, one generating 4MWth and two generating 10MWth

Duel fuelled, gas and fuel oil, boilers are provided to ensure that the boilers can be utilised even if there is an interruption in the gas supply. A minimum of the three days' supply of fuel oil will be stored at the site. Each boiler is fitted with an economiser on the flue which allows additional heat to be captured from the flue increasing the overall efficiency of the system by preheating the boiler feed water.

Figure 1: Addenbrooke's energy centre process flow diagram

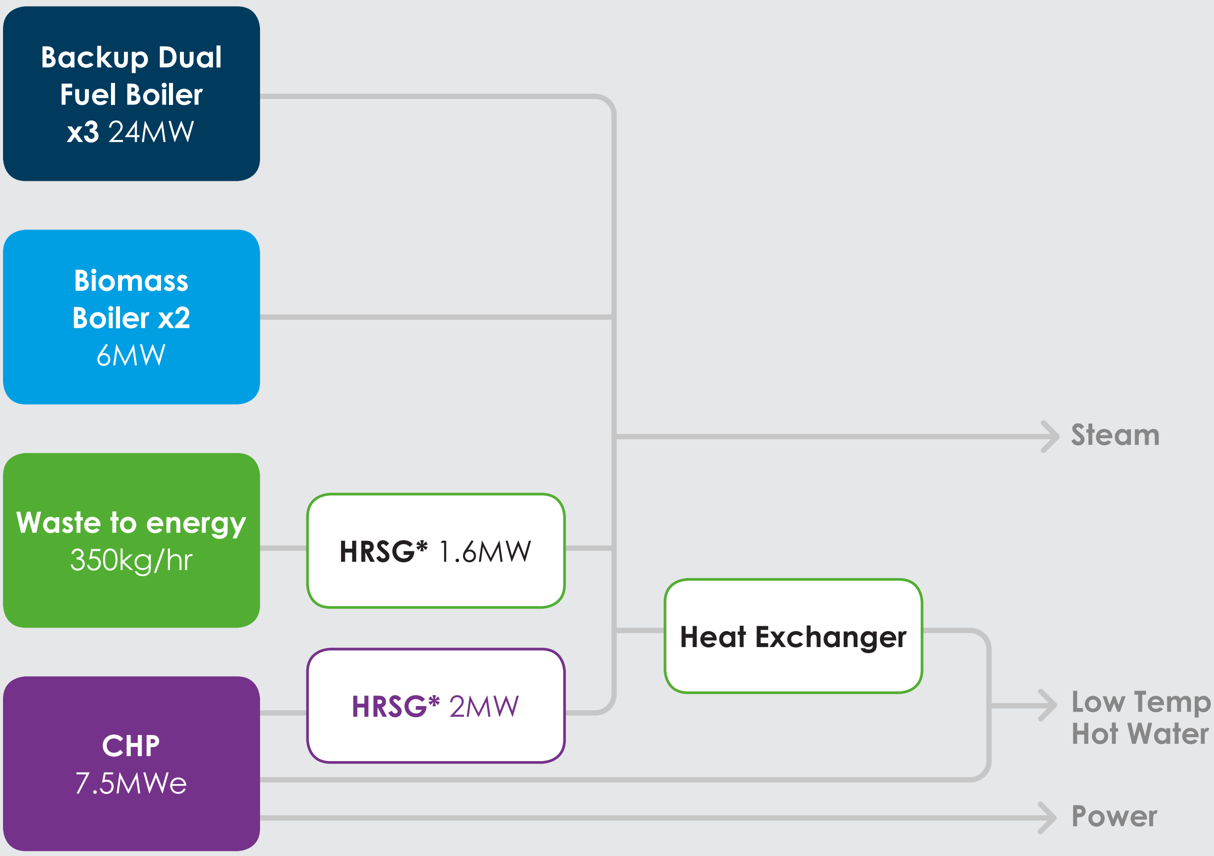

Table 1: Summary of net electricity and heat output (Year 1 - 2012)

Energy type	Net Energy Output (kWh)	Project lifetime
Electricity	52,325,859	25 years
Heat	64,179,913	

Summary of project activities, effects and baseline candidates – Addenbrooke's

Based on this overview and in accordance with the GHG Project Protocol, Trucost has identified the following project activities, effects and baseline candidates for this assessment.

Table 2: Overview of project activities and effects

Project activity	Product and/or service	Effect type	Project boundaries
Generation of electricity and heat from Addenbrooke's energy centre	**a)** 52,325,859 kWh net electrical output **b)** 64,179,913 kWh net heat output	Primary	**a)** The processing (including waste treatment) and transportation of wood fuel to the energy centre and supply of natural gas **b)** The supply of non-fuel inputs **c)** The operations of the energy centre
Energy centre construction	N/A	Secondary (one-time)	The construction of the energy centre
Diversion of waste wood from landfill	7,537 tonnes of waste wood	Secondary	The landfilling of waste wood

Table 3: Overview of the baseline candidates

Project activity	Baseline candidate
Generation of electricity and heat from Addenbrooke's energy centre	**a) Electricity** Other electricity generating technologies on the grid, such as fossil fuel or renewable energy technologies **b) Heat** Natural gas required to produce equivalent amount of heat with pre-existing fuel efficiency metric
Energy centre construction	No construction
Diversion of waste wood from landfill	Landfilling of waste wood based on current waste management practices

Defining the environmental key performance indicators (eKPIs)

Based on the project activities and their primary and secondary effects, the following eKPIs have been considered for analysis:

Table 4: Overview of the eKPIs considered for analysis

Project activity	eKPIs
Generation of electricity and heat from Addenbrooke's energy centre	1. GHGs (All Kyoto Gases) 2. Air pollution • Sulphur dioxide (SO2) • Nitrogen oxides (NOx) • Particulate matter (PM10, PM2.5) • Carbon monoxide (CO) • Volatile Organic Compounds (VOCs) 3. Heavy metals to air • Arsenic (As) • Cadmium (Cd) • Chromium (Cr) • Nickel (Ni) • Lead (Pb) • Mercury (Hg) 4. Water consumption 5. Water pollution
Energy centre construction	1. GHGs (All Kyoto Gases) 2. Air pollution (same pollutants as above) 3. Water consumption
Diversion of waste wood from landfill	1. GHGs (All Kyoto Gases) 2. Air pollution (same pollutants as above) 3. Water consumption

Commentary on key findings

The total gross environmental cost savings associated with the whole life of operation equates to £79,480,454. Some of the largest savings are described below:

Activity: Generation of electricity and heat from the Addenbrooke's energy centre

Emission type: GHGs; Savings: £55,442,225

The largest saving comes from the GHG emissions associated with the generation of electricity and heat. 35% of electricity within the UK comes from coal fired power stations which has a GHG footprint of 1,080 grams of CO_2e per kWh generated. By contrast, the operational GHG footprint of Addenbrooke's is 250 grams of CO_2e per kWh. Further GHG emissions savings are achieved through the avoidance of transmission losses. Addenbrooke's delivers electricity and heat directly to the hospital within a decentralised solution and therefore avoids grid transmission losses - estimated by DECC (2013) to be approximately 10%. While there are negligible GHG emissions from the supply chain and waste treatment processes at the energy centre, the largest contributor to the Addenbrooke's GHG footprint (97.3%) is the combustion of natural gas.

Activity: Generation of electricity and heat from the Addenbrooke's energy centre

Emission type: Air pollution; Savings: £8,938,900

The second largest saving comes from the air pollution emissions associated with the generation of electricity and heat. As described above, 35% of electricity within the UK comes from coal fired power stations which has significant air pollution associated with it – particularly Sulphur Dioxide (SO_2) and Particulate Matter (PM) which have accompanying high environmental costs due to the significant negative human health impacts caused by these emissions. As recently as May 2013, there has been significant press coverage relating to the failure of UK government to protect people from the harmful effects of air pollution in cities. By contrast, the air pollutant emissions at Addenbrooke's are small with natural gas combustion generating small emissions of SO_2, PM and other pollutants. The most significant air pollutant (in terms of physical quantity and environmental cost) from the energy centre is Nitrogen Oxides (NOx) which equates to 49 tonnes per annum and an environmental cost of £39,110.

Activity: Diversion of waste wood from landfill sites

Emission type: GHGs; Savings: £4,329,700

Another significant saving comes from the GHG emissions avoided by the diversion of waste wood from landfill. According to DEFRA (2012a), one tonne of waste wood that is sent to landfill will emit 851 kg of CO_2e. This is largely attributable to the methane emitted when wood decomposes and does not include any biogenic GHGs that would be released naturally. Methane has a Global Warming Potential (GWP) 21 times greater than that of carbon dioxide. When waste wood is treated at Addenbrooke's these emissions of methane are avoided. In addition to the GHG emissions attributable to the landfilling of waste wood, the wood itself is also being transported greater distances to be treated.

Other savings

Other notable savings include water consumption during the generation of electricity and heat (£2,960,175). The main driver of the high cost associated with the baseline candidate is the water consumption of electricity and heat generation from biomass that is grown specifically for thermal treatment. Bio-crops require irrigation and The Water Footprint Network (2012) estimates that 70 m^3 of water are consumed per GJ of energy generated from a biomass plant using dedicated bio-crops. By contrast, coal fired power stations consume 0.16 m^3 of water per GJ of energy generated.

Another notable saving comes from the water pollution emissions avoided by the technology used at Addenbrooke's. Addenbrooke's currently emits 1 tonne of COD per annum at an environmental cost of £15,471 and this compares favourably to the baseline candidate. The baseline candidate for electricity and heat generation would generate 22 tonnes of COD at an environmental cost of £342,555. Again, this is reflective of the UK energy mix predominantly relying on coal fired power stations.

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Utilyx is the leading energy consultancy that provides the full range of integrated energy solutions, from the creation of multi-faceted energy strategies to on-site energy generation. We help organisations in all sectors to save money, secure supply and meet sustainability targets. And we help generators and developers to sell renewable power on long-term contracts.

Utilyx, part of MITIE group, is a trusted name. We were the first energy consultancy to be regulated by the Financial Service Authority (now Financial Conduct Authority) in October 2006.