Dealing with South West Devon's Waste

Welcome to this exhibition. We want to tell you how MVV Environment Devonport Ltd is planning to deal with household rubbish produced in Plymouth, Devon and Torbay.

MVV has signed a contract with the South West Devon Waste Partnership (SWDWP) to manage the residual waste from Plymouth, Devon and Torbay. This is the waste from homes and businesses after recycling or composting which would otherwise go to landfill.

We are proposing to develop an Energy from Waste Combined Heat and Power plant at a site in **North Yard, Devonport**, which is in the Weston Mill area of the Naval Base bordering Blackies Wood. The plant would deal with 245,000 tonnes of waste a year and generate electricity and heat which will be used in the Dockyard or exported to the National Grid.

All waste handling activities would be carried out inside a purpose-built structure. This will minimise the impact of noise, odour and dust on nearby residents.

MVV has submitted a planning application to Plymouth City Council. This was accompanied by a full Environmental Statement, and both sets of documents are publicly available.

This exhibition sets out our latest proposals and summarises the likely impact the development will have on its immediate surroundings as well as the environment.

We welcome your views and comments and any questions you may have.

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MVV - Who we are

MVV's sites in Germany

MVV is a German company with wide experience in running waste plants safely and producing renewable energy.

MVV Environment Devonport Ltd is a subsidiary of the German company MVV Umwelt, and both are subsidiaries of the German utility company MVV Energie whose headquarters are in Mannheim.

MVV Energie employs more than 6,000 staff and has an annual turnover of 3.4 billion Euros. The company is listed on the Frankfurt Stock Exchange, and the majority shareholder is the City of Mannheim.

MVV Umwelt has over 45 years' experience in building and operating waste management plants in Germany and is one of the top three companies in Germany in its field.

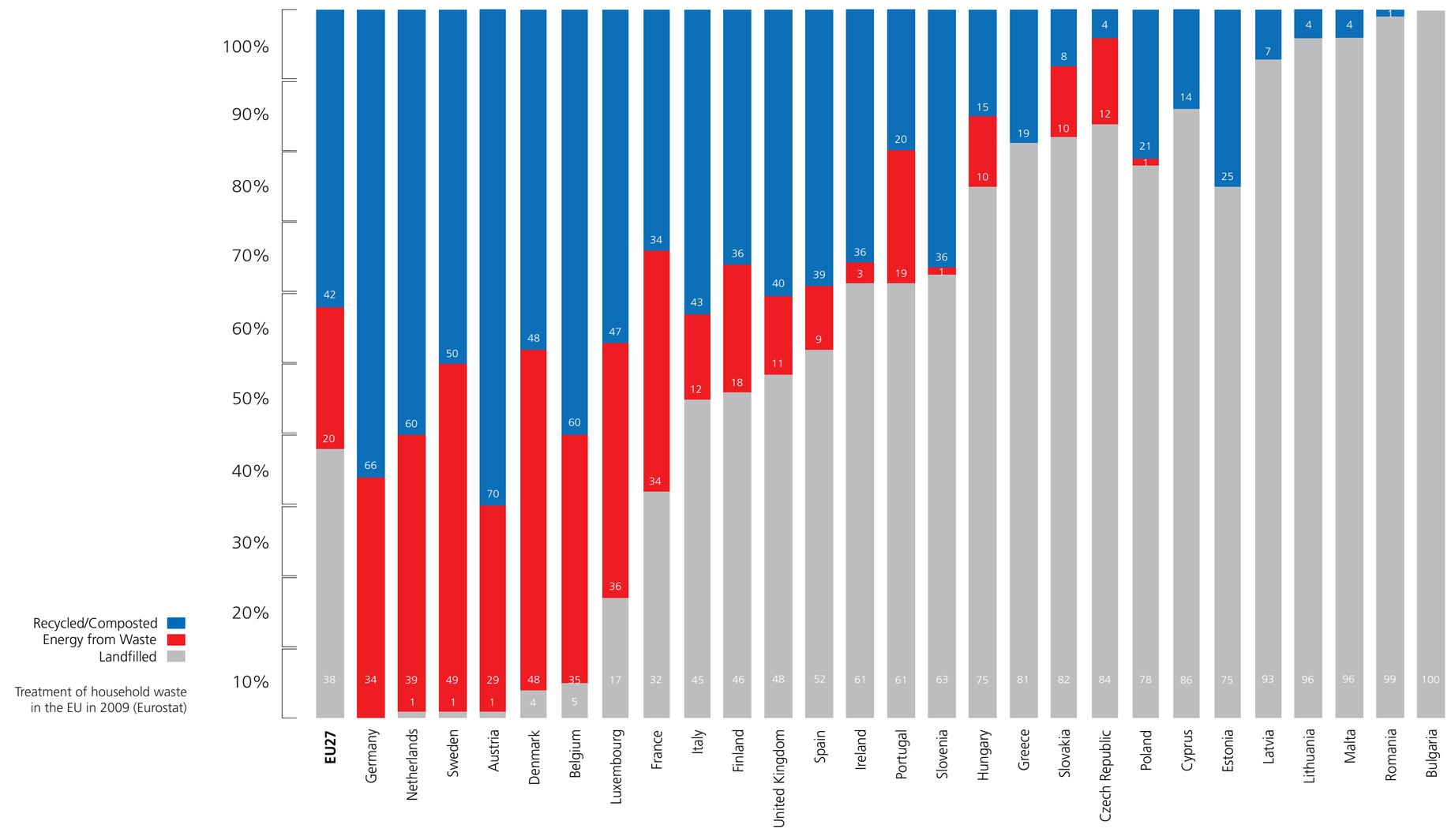
In Germany MVV Umwelt operates six Energy from Waste and biomass power plants, managing 1.6 million tonnes of waste and waste wood a year.

We are currently working with 22 local authorities in five federal states, to manage and dispose of the waste of around 4.4 million people across the country.

By burning the waste, MVV Umwelt produces around 1 million megawatt-hours of electricity and 300,000 megawatt-hours of heat every year, thus replacing energy from power plants that use fossil fuels like coal or gas.

MVV brings a wealth of first-hand experience of operating high efficiency EfW CHP facilities to the UK, where it has been working for the last three years through MVV Environment Limited. This company has been set up to support all of MVV's local activities. It employs staff with wide experience in the UK waste management industry. It has now established a second company, MVV Environment Devonport Limited, to develop the Energy from Waste Combined Heat and Power project.

Why Energy from Waste?



We cannot keep burying our rubbish in holes in the ground. Energy from Waste with Combined Heat and Power is accepted internationally as a safe and efficient way of dealing with waste that is not recycled.

Even with increased recycling, the communities of Plymouth, West Devon, Teignbridge, South Hams and Torbay will eventually produce over 200,000 tonnes of rubbish every year that can't be recycled. Right now, this waste goes to landfill sites in Cornwall and Devon. This is enough to fill the Tinside Lido more than 2.5 times every day.

Businesses in the SWDWP area also produce around 450,000 tonnes of waste which is similar to household waste (e.g. shops, restaurants and offices) each year, most of which is sent to landfill as well. This can also be recycled but there is still a lot left over.

Landfilled waste produces greenhouse gases that contribute to global warming and liquid waste which could pollute water supplies. That's why the EU and the Government have set targets for Councils to reduce landfilling the waste. Councils which fail to meet these targets will face financial penalties for landfilled waste and have to find other ways of dealing with the rubbish.

The Energy from Waste CHP plant at Devonport provides the best solution because:

- It is a modern, well proven and safe way of making good use of waste that is not recycled, which would otherwise go to landfill.
- As experience both in the UK and abroad demonstrates, EfW complements recycling; it is not a substitute for it and it does not divert waste from recycling.
- Countries in Europe with the highest recycling rates also use Energy from Waste extensively to make use of residual waste (eg Germany has 66% recycling but 34% energy from waste).
- Power and heat can be recovered from the waste and supplied to the Naval Base plus potentially in the future to houses and offices in Plymouth, turning your waste into a valuable energy resource.
- It saves the burning of fossil fuels and will result in the reduction of 1.8 million tonnes of CO2 equivalents over the course of a 25-year contract.

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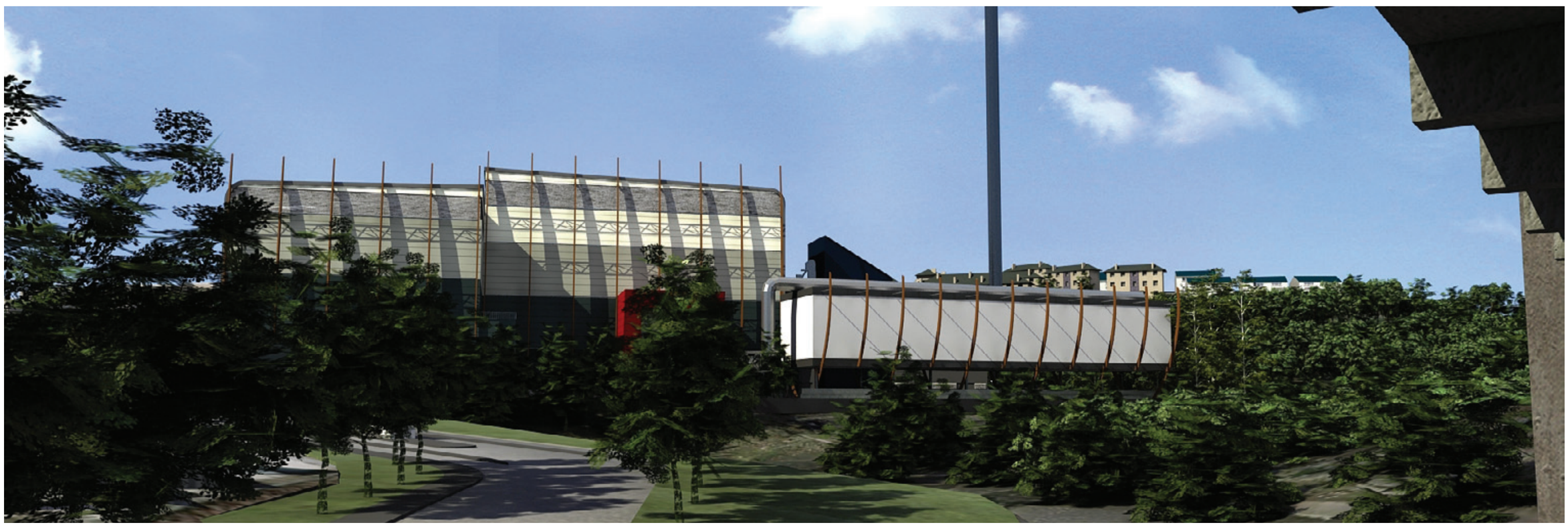
An Energy from Waste plant for South West Devon



This is what MVV's new Energy from Waste CHP plant would look like at North Yard, Devonport

The plant will burn waste left over after recycling, producing electricity and heat which will be used in the Dockyard.

Main features of the proposal:

- A high efficiency Energy from Waste plant, with enough capacity to treat 245,000 tonnes a year of SWDWP's residual waste and local commercial & industrial waste (after recycling has taken place)
- The project will divert between 97 and 100 per cent of the Partnership's waste that currently goes to landfill
- Around 70 percent of the waste will be household waste; the rest will be Commercial and Industrial waste (C&I)
- MVV **will not** incinerate radioactive material within the plant and this is specified in the contract with SWDWP
- The plant will generate up to 22.5 MW of electricity and up to 23.3 MW of heat, which will be used to heat the Dockyard and Naval Base, plus potentially in the future houses and offices in Plymouth
- The generation capacity is enough to supply up to 39,000 households with electricity and up to 9,400 households with heat
- The net efficiency of the plant will average 39 per cent, reaching a maximum of 49 per cent – compared to around 23 per cent for an EfW plant without Combined Heat and Power (CHP)
- The site will have its own entrance for vehicles, which will be outside the Dockyard security area
- The plant area will include public facilities, such as a community area. MVV welcomes views on its use
- MVV would also like suggestions on how the community could use Blackies Wood and landscape nearby areas
- There will be up to 300 jobs during construction as well as 33 permanent jobs during operation, with a further 70 indirect jobs, such as in contracted plant maintenance
- MVV will invest 250 million Euros in the project

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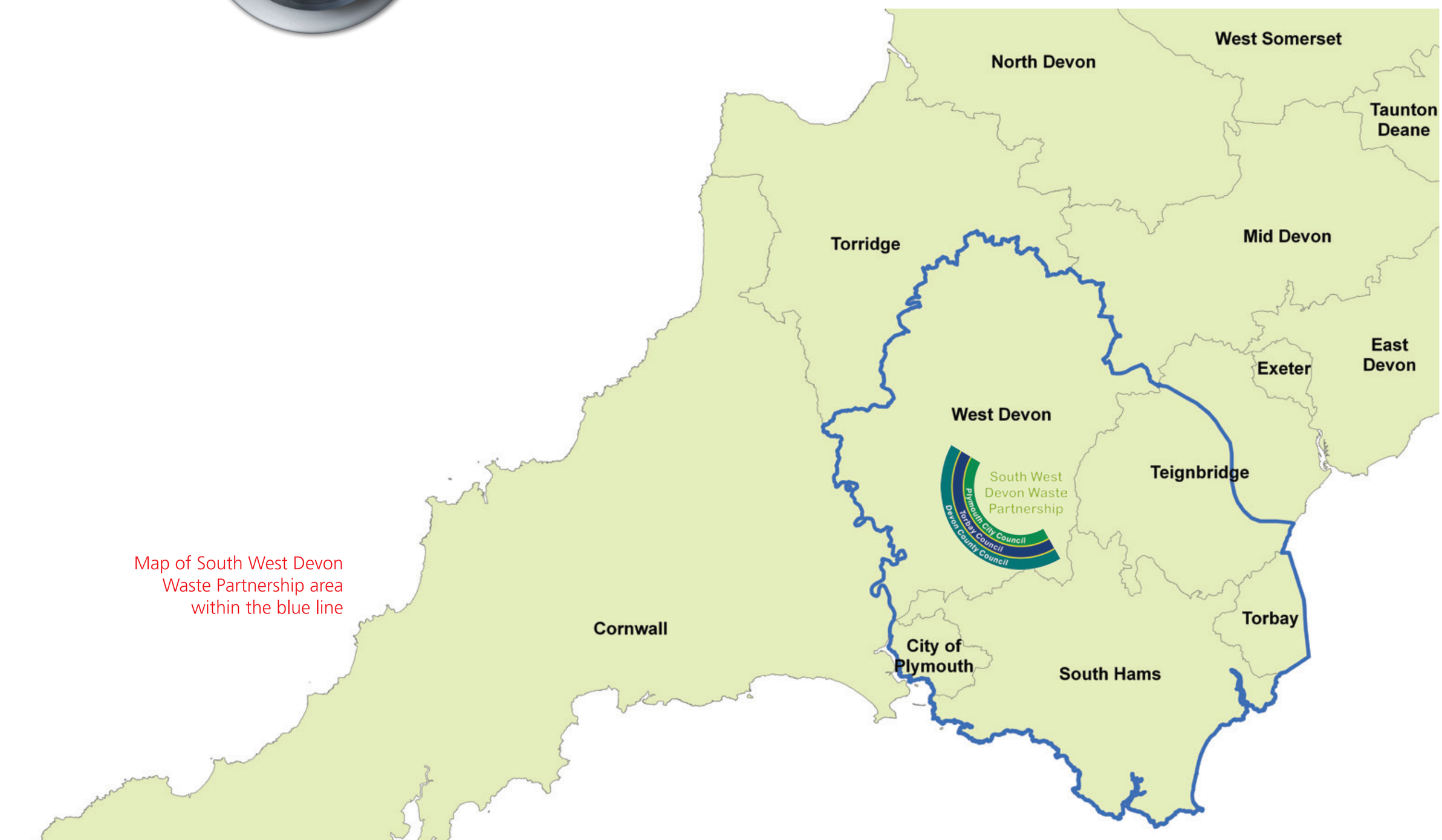
Where the waste comes from



Map of South West Devon Waste Partnership area within the blue line

Waste will be brought to Devonport and the ash will be taken out by lorries. This tells you how many journeys there will be each day and the roads they will use.

Waste will be delivered directly to the plant by refuse collection vehicles from Plymouth and part of South Hams District Council. It will come in bulked up loads from West Devon District Council, Teignbridge District Council and Torbay Council. This will mean bigger but fewer lorries coming from outside Plymouth.

The plant will have additional capacity to take waste coming from shops, workshops and other businesses in the area.

This way, MVV ensures that the Energy from Waste plant provides a local solution to a local waste problem.

We estimate that there will be 132 lorries (HGVs) travelling in and out of the plant bringing waste or removing ash from the site each Monday to Thursday with less on Friday and far fewer over the weekend. That means 264 separate lorry movements during the busiest weekdays.

There will also be up to 35 staff vehicles driving into and out of the area each day. That means 70 vehicle movements.

The traffic increase would be less than one percent on the number of vehicles currently travelling on the nearby roads. There would be no significant effects on nearby houses or schools.

Lorries would deliver between 8am and 7pm every day except Christmas Day.

Why we have chosen North Yard, Devonport

Aerial photograph showing the site boundary and access road

Key

1. Area for proposed EfW CHP building, air-cooled condensers, workshop and stores building, car parking and other associated infrastructure (approx 24,700m²)
2. "Table top mountain"- area for main construction compound (approx 17,200m²)
3. "Blackies Wood"- and areas of greenspace adjacent to Savage Road and Weston Mill Stream (approx 41,500m²)
4. Area for site access road, weighbridge, new bridge across Weston Mill Stream and sculpture (approx 17,400m²)
5. Steam pipe and electricity cable connections
6. Area for bull point access road (approx 2,900m²)
7. Electricity cable connection

Landscape masterplan

The plant will be sited in the dockyard so that MOD can use the electricity and heat it produces. It is common in Europe to have plants in towns and cities.

The decision to build the plant in Plymouth is based on the fact that a lot of people live in Plymouth and most of the waste within the SWDWP area is produced there. If the plant was built outside Plymouth there would be more traffic going out of the city and it would be much harder to use the heat energy.

We believe that North Yard, Devonport, in the Weston Mill area of the Naval Base bordering Blackies Wood is the best site in Plymouth because:

- The Naval Base is a major employer in Plymouth. An Energy from Waste plant in the Dockyard would provide much cheaper heat and electricity for HM Naval Base Devonport, which is a major part of its running costs.
- Heat could also potentially be provided to local residences and businesses, and/or via a district heating system for Derriford and central Plymouth, subject to further discussions and agreement with Plymouth City Council.
- It is previously developed land and fits into the industrial setting of the Naval Base. It also has good access through Wolseley Road (A3064) and Weston Mill Drive (A3064) from the A38.
- The site has also been identified by MOD as an area with potential for future industrial development and complies with local planning policies.

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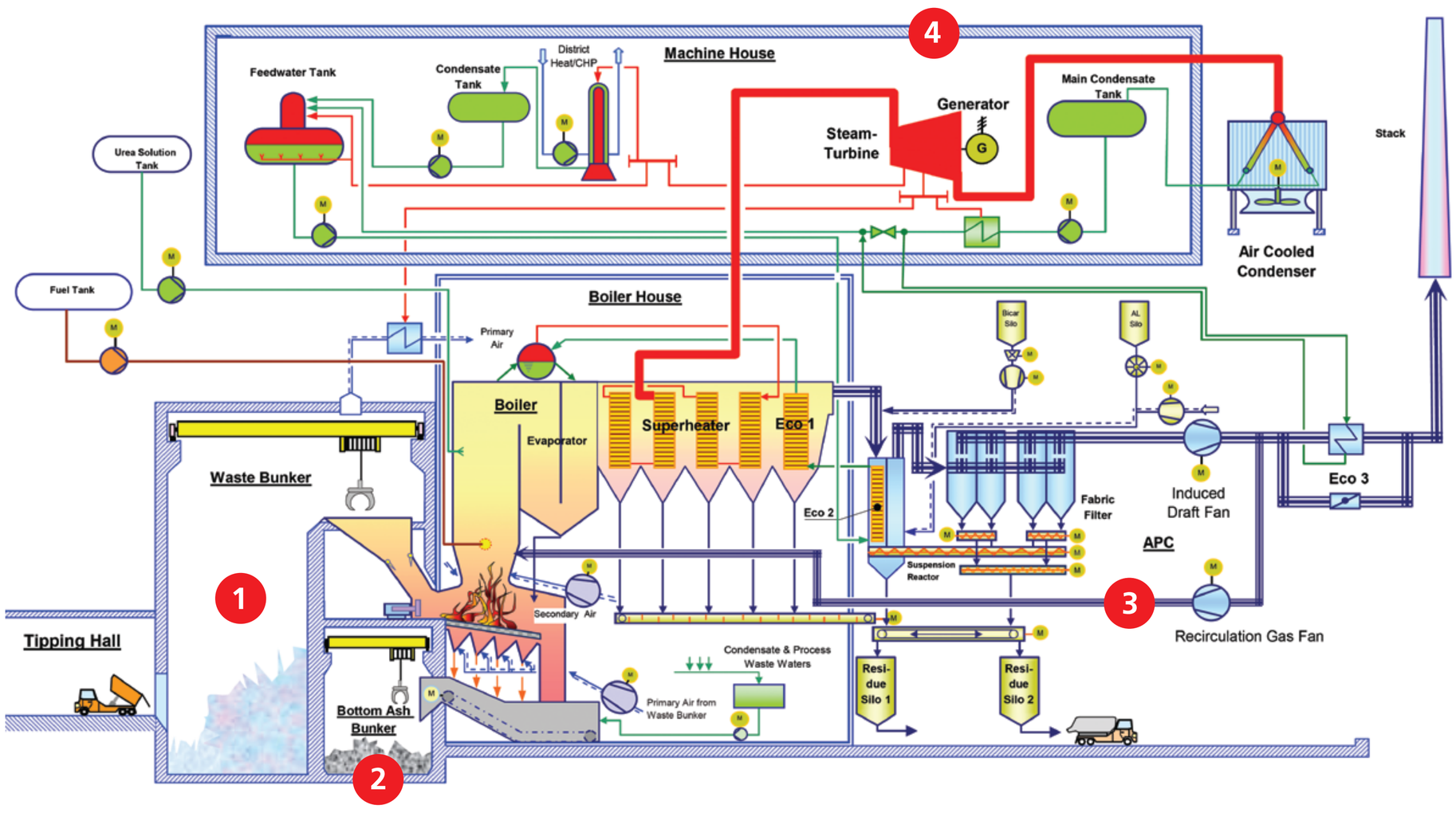
The Energy from Waste process in North Yard



A typical Energy from Waste process

This picture shows how the plant will turn left-over rubbish into electricity and heat.

Although it looks complicated the process is very simple. In fact, the plant consists of four unique processes that operate together:

1. Bunker

Lorries drive into the fully enclosed tipping hall and tip off the waste inside a concrete bunker. Each tipping bay is equipped with a roller shutter door which is closed once the waste has been tipped into the bunker. The area is operated under negative pressure so that no odours or litter can escape the building. Once tipped, the waste is then moved by mechanical grabs to the combustion chamber where it is burned at high temperatures.

2. Boiler and bottom ash

The waste automatically burns on the combustion grate at temperatures of up to 1,300 °C. The residue arising from the combustion of the waste, called the incinerator bottom ash (IBA), is collected for further recycling. The recycled ash is then used as an aggregate substitute, for example in road-building. Alternatively, it can be used for quarry reclamation.

3. The Air Pollution Control (APC) system

The hot gases from the incineration process are treated in a highly efficient, multi-stage cleaning process. The residues from this process will be taken in sealed containers to a separate treatment plant near Leeds where they will be stabilised and placed in a specially constructed sealed landfill. This will be strictly monitored by the Environment Agency.

4. The use of energy

In the boiler, water will be heated to create steam. The steam will be sent to a high efficiency steam turbine which will create electricity and heat. The steam will be used to heat the Dockyard and Naval Base, plus potentially in the future houses and offices in Plymouth. Most of the electricity produced will be used by the Dockyard and Naval Base. Any electricity left over will go to the National Grid.

The net efficiency of the plant will average 39 per cent, reaching a maximum of 49 per cent – compared with around 23 per cent for a standard EfW plant without Combined Heat and Power (CHP). This efficiency is much higher than other processes like gasification or anaerobic digestion.

What happens to materials that are left over?

Whitecleave Quarry

A typical bunker for bottom ash

The plant will produce two different types of ash. These are the materials left over after burning, or residues. They will be dealt with carefully at sites outside Plymouth.

Boiler and bottom ash

MVV proposes to take this ash, which is wet, by lorry from the EfW CHP plant to Whitecleave Quarry in Buckfastleigh. This site is operated by Sam Gilpin Demolition Ltd which runs a business recycling demolition waste. Any metal left in the ash that would not burn is taken out and recycled. The ash goes through different screens to sort it by size. It will then be sold and taken away for use in different construction projects. If it gets dry the ash will be sprayed with water to prevent dust.

MVV will apply separately to Devon County Council for planning permission to build the ash processing plant at Whitecleave Quarry.

The IBA amounts to about 23 per cent by weight of the waste delivered to the plant (about 57,000 tonnes per year).

The Air Pollution Control (APC) system or fly ash

The hot gases from the incineration process pass through a series of bag filters which remove harmful particles from the waste as well as the material added to the flue gas in order to take out the harmful substances. The residues from the bag filters will be collected inside the plant and taken in sealed containers to a separate treatment plant in Leeds. Here they will be treated with weak phosphoric acid before being landfilled in a specialist site at Winterton near Scunthorpe. This will be handled by Waste Recycling Group and strictly monitored by the Environment Agency.

These residues are alkaline like cement and because they can burn the skin they are classed as hazardous wastes.

The total amount of APC residues that would be landfilled each year would be about 5 per cent of the total waste going into the EfW plant, i.e. about 12,000 tonnes.

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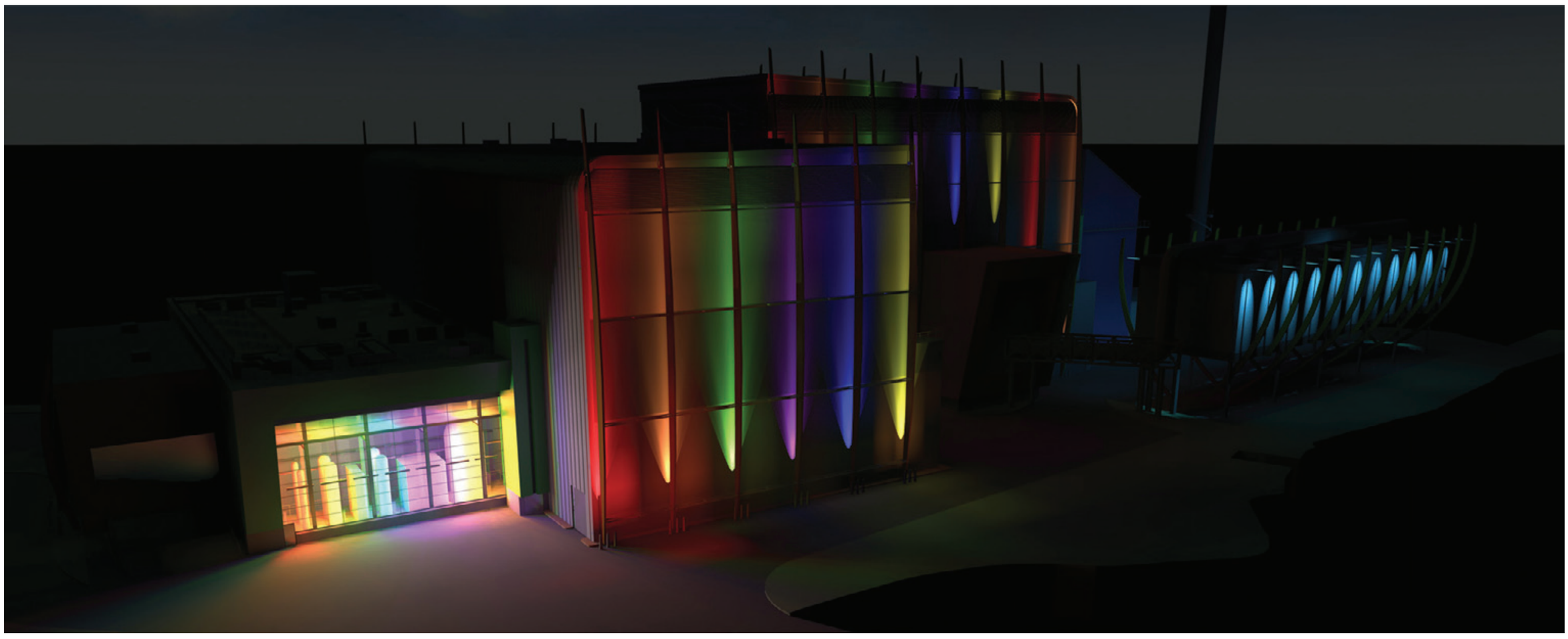
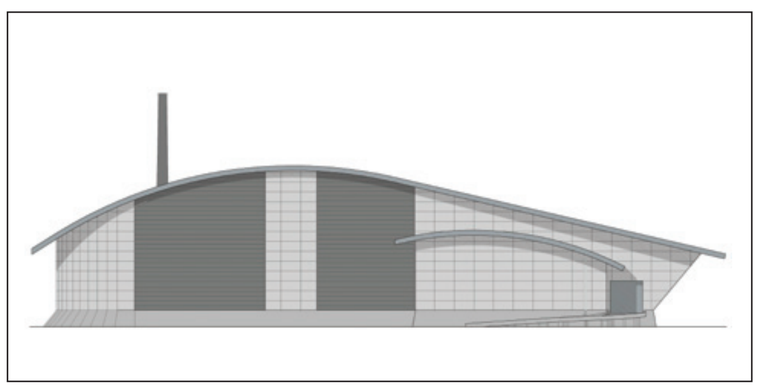
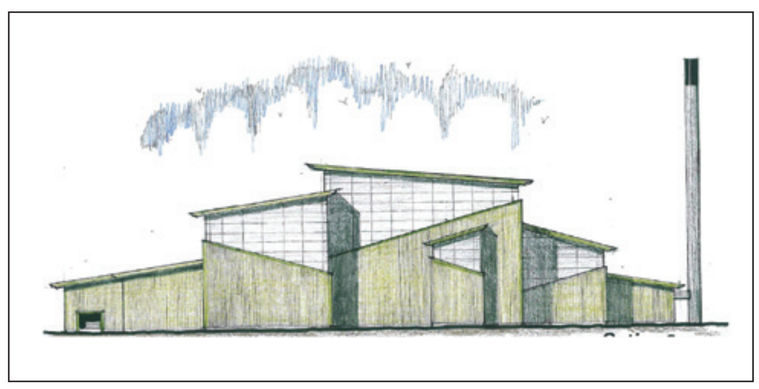
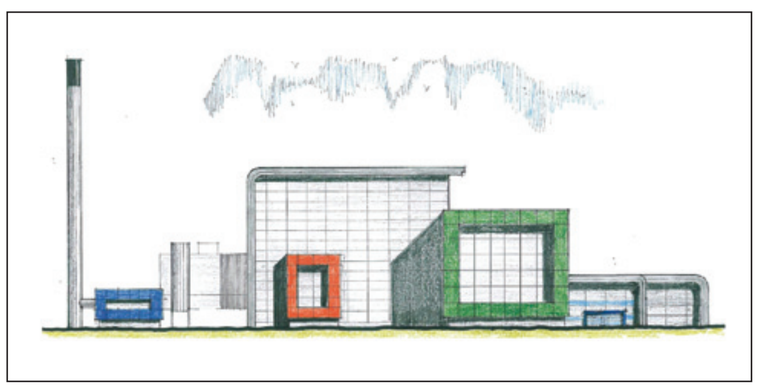
Evolution of the design









Possible lighting scheme for the outside of the building, from dusk to 11pm & some of the early designs

Our latest design looks very different from our first ideas. This explains why we have changed it.

The first designs of the building were prepared during the tender process which started in late 2008. Initially MVV considered a larger building which covered all of the machinery. Following comments at public exhibitions and discussions with the planners in 2010, we decided to change the design so the building was smaller. We therefore made the building more industrial and put this on show in February this year.

However, there were still comments from the community and the planners so we changed the design of the plant so that it fits better with its surroundings. We changed the colour of the building as well to make it more visually interesting. We also included an innovative lighting scheme for the evening and this design is now part of our planning application.

Visual impacts

View from Saltash Road

View from Savage Road

These pictures show what the plant would look like from different places in the city.

The building will be 134 metres long, 30 metres wide to 81 metres at its widest point and from 15 metres high to 45 metres at its highest point.

Before we finalised our assessment,the chimney was 85 metres high. Following comments from the community and the completed air quality assessment, we decided to make the chimney 95 metres high.

The ground level of the site is 9 metres above sea level, and this would put the top of the stack at 104m above sea level, and the highest part of the building at 54 metres. Local ground levels are up to 60 metres above sea level.

The outside of the building has been carefully designed to complement the existing setting, and landscaping will be undertaken around the building to soften the visual impact.

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Environmental impact

A slow worm found at the site. Ecologists have carried out detailed surveys of the area

This tells you what effects the plant will have on the local environment.

The Environmental Statement is a key part of the planning application. In 2010, MVV started to carry out various extensive studies to make sure that any possible harmful effects from the construction and operation of the Energy from Waste plant will be minimised and dealt with in a responsible way.

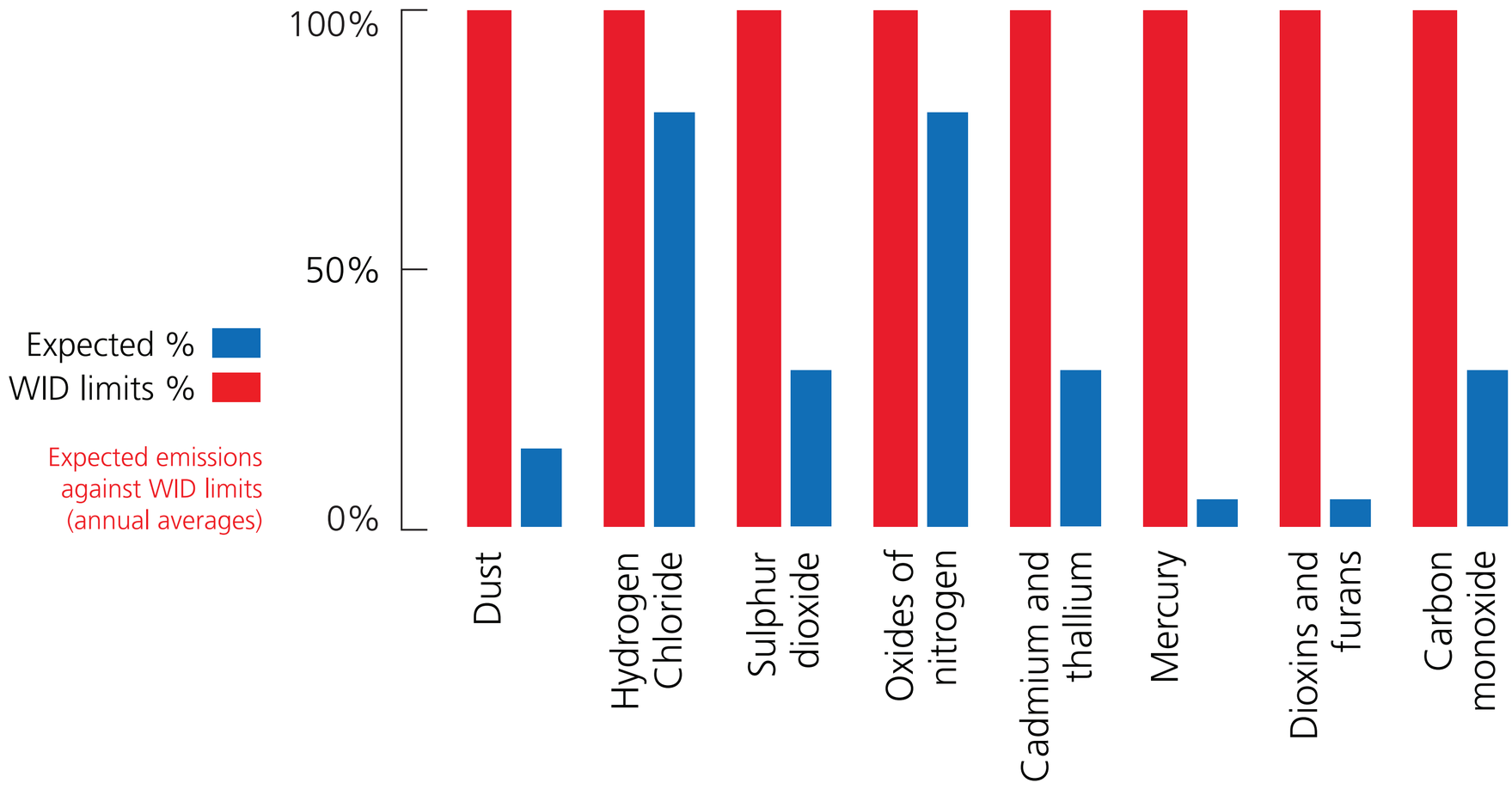
MVV has employed experienced experts and scientists who are familiar with the area to carry out these studies. They cover a wide range of topics, under the headings below. Copies are available for public inspection. Please ask us if you are interested in a special topic but cannot find it in the Environmental Statement.

All of the studies, apart from landscape and visual, show no significant impact on the environment surrounding the plant. The size of the building will cause some adverse visual effects locally and there will be some short-term construction noise effects, but mitigation measures will minimise these effects to an acceptable degree.

Topics we covered in our studies are:

- Need for the development
- Alternative technologies, sites and designs
- Ecology
- Landscape and visual
- Daylight, sunlight and overshadowing
- Cultural heritage
- Contamination - land and water quality
- Hydrology, hydrogeology and flood risk
- Traffic and transport
- Air quality
- Noise and vibration
- Construction waste
- Health and Well-Being

EfW and Health



Many studies have been carried out by experts. They show that EfW plants do not harm people's health.

Modern EfW facilities are strictly controlled and monitored by the Government watchdog, the Environment Agency, to ensure that there is no risk to public health from emissions. Our studies also show that the plant would not represent a health risk to the local population.

Emissions generated through the combustion process go through a multi-stage clean-up process before being released to the atmosphere. The composition of the flue gas will be continually monitored and the results checked regularly by the Environment Agency, who will have to license the plant before it can be operated. The emissions will be lower than those imposed by the Waste Incineration Directive (see graph).

The disposal of the residues from the flue gas treatment will also be strictly controlled and monitored by the Environment Agency. Also, MVV will publish emissions data weekly on our website so that people can check for themselves.

Health Protection Agency

European Union Directives aimed at minimising landfill are leading to an increased use of EfW throughout Europe, and research suggests that this will not cause any significant adverse health effects.

The Health Protection Agency - the Government organisation responsible for public health in Britain - has reviewed the latest scientific evidence on the health effects of modern household waste EfW plants.

In 2010, the Agency reported that any potential damage from modern, well run and regulated incinerators is likely to be so small that it would be undetectable.

Air pollution from EfW plants makes up a fraction of one percent of the country's particulate emissions. Industry and traffic account for more than fifty per cent.

Benefits of the solution 1

There are a number of significant local benefits that will come about as a result of the proposed EfW CHP facility.

Many of these benefits are long term and sustainable, and contribute significantly to the benefits of individuals and businesses in Plymouth. **The main benefits are:**

Waste Management

- Having a clean, safe and reliable technology to stop around 200,000 tonnes of waste from households going to landfill every year
- Providing an alternative option to landfill for local businesses
- Recycling of around 57,000 tonnes of bottom ash for construction use every year
- Recovering of around 7,500 tonnes of metals for recycling

Energy

- Providing heat and electricity to the Naval Base which is a major employer in Plymouth
- Potentially providing heat to local businesses and homes as part of a district heating scheme
- Replacing fossil fuels by the use of waste for making energy
- Saving the equivalent of around 73,000 tonnes of CO2 every year- this equals more than 700 hectares of forest, the size of 1,000 football fields

Economy

- Savings for council tax payers of more than £675 million over the 25-year life of the contract – when compared with the costs of continuing to landfill the waste
- The MOD, and thus the taxpayer, will benefit from reduced energy costs and the rent from the site
- Plymouth City Council will benefit from payment of rates

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Benefits of the solution 2

There are a number of significant local benefits that will come about as a result of the proposed EfW CHP facility.

Many of these benefits are long term and sustainable, and contribute significantly to the benefits of individuals and businesses in Plymouth. **The main benefits are:**

Employment

- Creating an average of 159 direct jobs during the construction of the plant plus another 320 indirect jobs for support services such as catering, accommodation, etc.
- All construction activities offer significant employment prospects for the local community
- Creating 33 direct full time jobs during operation – where possible, staff will be recruited locally
- Creating another 70 indirect jobs during operation through companies offering support services (e.g. welding, industrial cleaning, maintenance works)

Community benefits

- MVV will set up a community fund to benefit the local area – we welcome any views on the use of that fund
- MVV will provide a community area in the administration building which will be available for local community use
- MVV will introduce a scheme for maintaining and improving Blackies Wood, for the benefit of the public

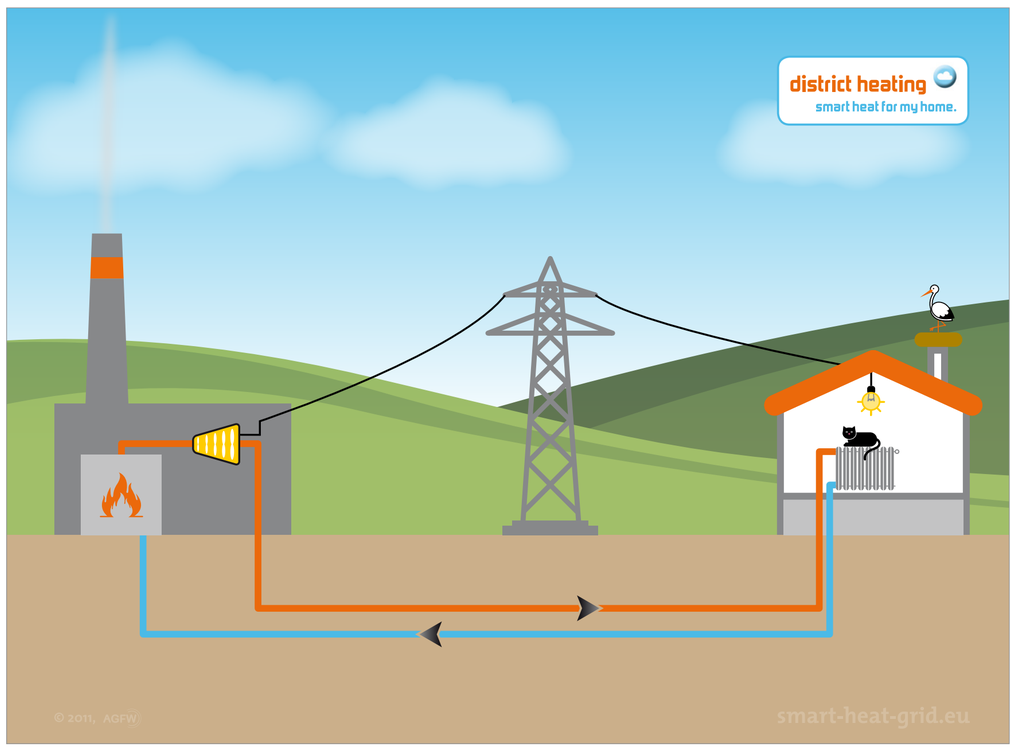
Education benefits

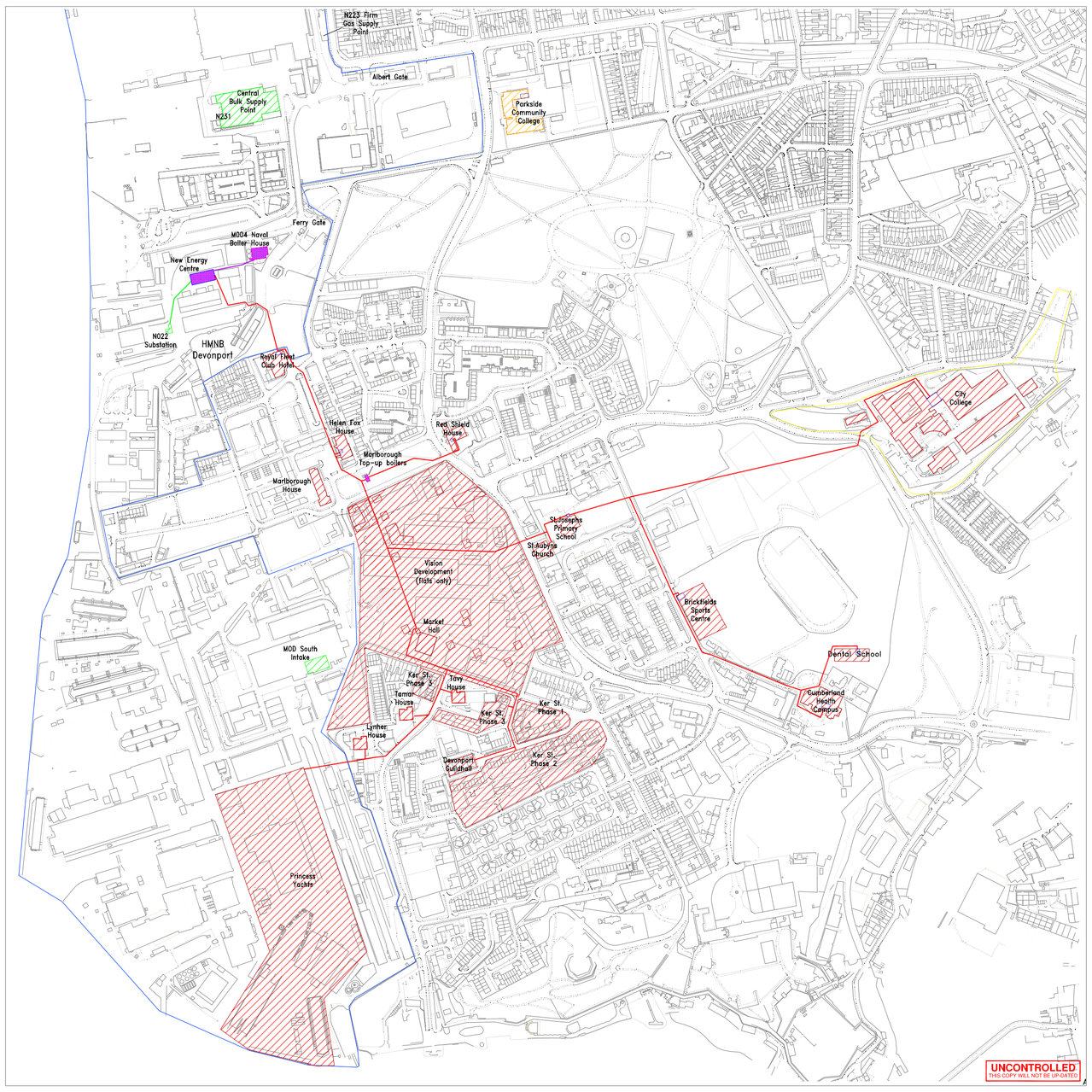
- MVV will employ a full time Community Liaison Manager to work with the local community on recycling and waste reduction
- MVV will work with local colleges and organisations to support local employment

District Heating

MVV is one of Germany's leading owners and operators of District Heating systems

District heating involves laying specialised hot water pipes in the streets and connecting houses, blocks of flats and offices, and other large buildings to the system. These premises are then all heated from one external source such as an energy from waste plant. In Europe there are many examples of district heating and MVV is a leading operator in both Germany and the Czech Republic.





District Heating in Plymouth

There are few examples of district heating in the UK; Sheffield and Nottingham have systems which date from the 1990s and 1970s. Plymouth City Council has already embarked on a study of setting up a number of district heating systems in different part of the city, including the city centre and Devonport.

MVV is committed to working with the council to explore the potential for district heating in Plymouth. It is possible that in the future such a system could be built in a public-private partnership with some of the heat coming from the proposed Energy from Waste plant in North Yard.

This would further increase the sustainability of energy use in Plymouth.

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Past and future consultation

MVV has held several exhibitions since 2010 to hear people's views. As a result, we have changed some aspects of our plans. Even though we have submitted a detailed planning application to Plymouth City Council, we are still keen to get your views on certain areas. These are described below.

How we have responded to your views

- We changed the orientation of the plant so that the operational side of the facility was moved away from residential properties. The plant was also re-located within the site to lessen the visual impact.
- To address concerns expressed about visual impact, noise and dust we decided to re-locate the incinerator bottom ash recycling plant off-site.
- We changed the design of the building to take into account your suggestions and those of Plymouth City Council.
- The main concerns raised by people were about emissions, traffic and health impacts – MVV is committed to make as much information as possible available in these areas.

What can I influence?

There are some areas where you could suggest changes and gives us your ideas, for example:

- The appearance of the building (colours, lighting, patterns, artwork) but not its location, size or shape.
- The landscaping and possible locations of tree planting on and off the site.
- The potential for using Blackies Wood as a managed nature conservation area or playground for children.
- The sort of benefits that might be useful to the local community, such as the potential use of the community area.
- The use of the community fund for local organisations, projects or events.
- Local employment opportunities, including apprenticeships, employment of young people and internships.
- Any further information that the community would like to have to give them more confidence in the plans

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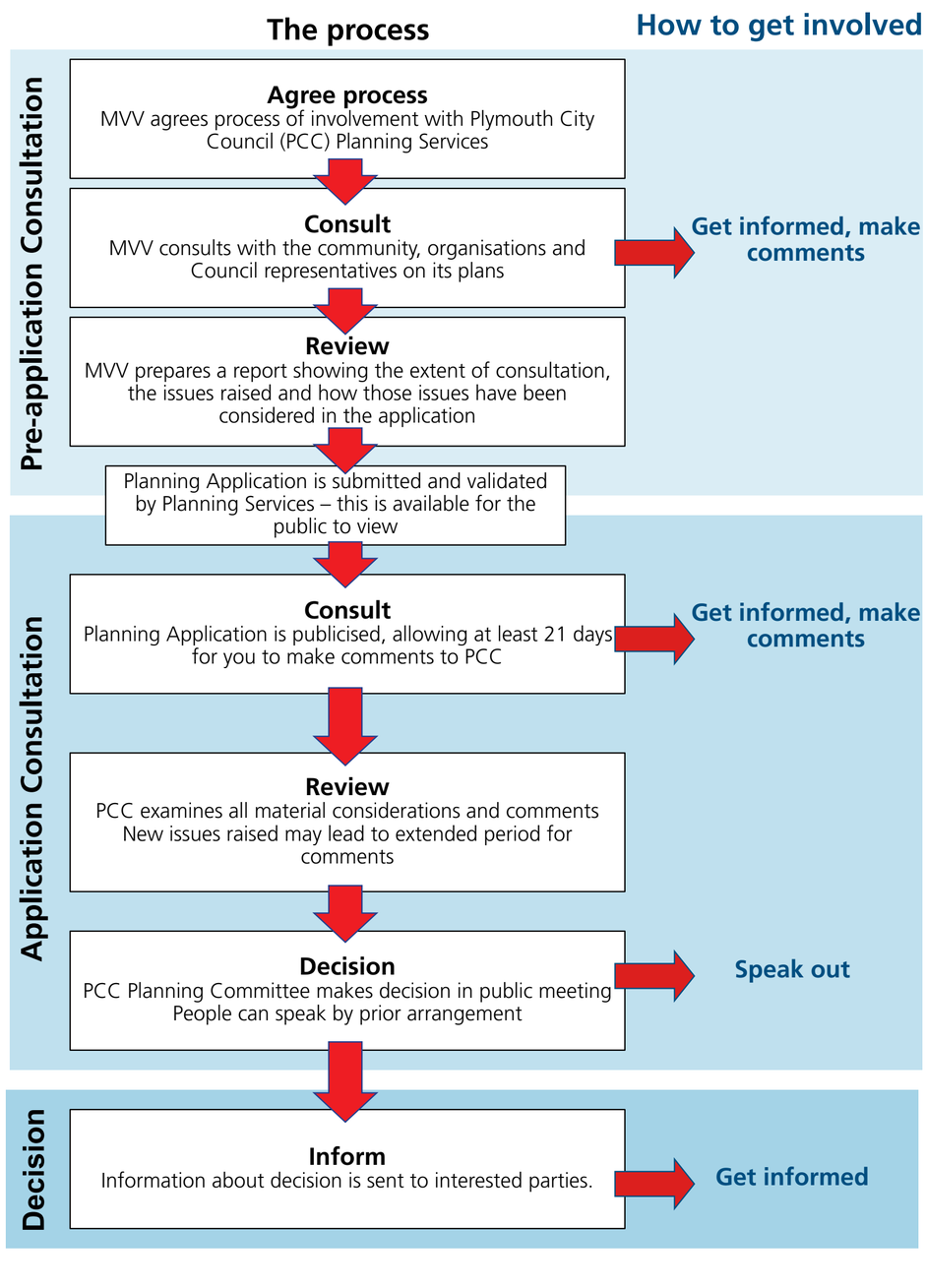
What happens next



Planning consultation flow chart

MVV has now submitted a planning application and Environmental Statement to Plymouth City Council. This tells you what the next stages are before the EfW CHP plant can be built.

MVV submitted a detailed planning application to Plymouth City Council in May 2011. This will be considered in due course by the Council's Planning Committee, which is completely independent from SWDWP. As part of the application an Environmental Impact Assessment of the proposals was carried out and a full Environmental Statement accompanied the application.

MVV will also have to get permission from the Environment Agency before the plant can start working. This is called an Environmental Permit.

This exhibition forms part of the consultation activities being carried out by MVV. MVV will continue to consider fully people's views.

Now that the planning application has been submitted, Plymouth City Council will also ask people for their views. Please look at their website: www.plymouth.gov.uk

Local Liaison Committee

MVV has set up a Local Liaison Committee. The aim is to encourage discussion between representatives of the local community, MVV and SWDWP on issues relating to the design, construction and operation of the EfW facility.

The LLC contains a broad cross-section of representatives with a total membership of 20. There are about a dozen representatives from the local community, with approximately 5 coming from MVV, SWDWP and other bodies such as the Environment Agency.

Details of the LLC meetings will be published on MVV's website

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Tell us what you think

We welcome questions and comments from local residents about our scheme. If you would like to comment you can let us know what you think by:

- Filling in the form provided
- Email us at info@mvvuk.co.uk
- Write to us: MVV Environment Devonport Ltd, Unit 10, Scott Business Park, Beacon Park Road, Plymouth PL2 2PQ or
- Phone the office on 01752 565412

All comments will be reviewed by the project team.

Copies of the exhibition boards will be available on our website: www.mvvuk.co.uk together with an online response form. The planning application can be viewed and downloaded from the website.

These boards can also be viewed at our office after the exhibitions.

For further information on MVV Environment Devonport Ltd, please see www.mvvuk.co.uk. For further information on the South West Devon Waste Partnership, please see www.swdwp.co.uk. Please also look at the website of Plymouth City Council: www.plymouth.gov.uk.

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