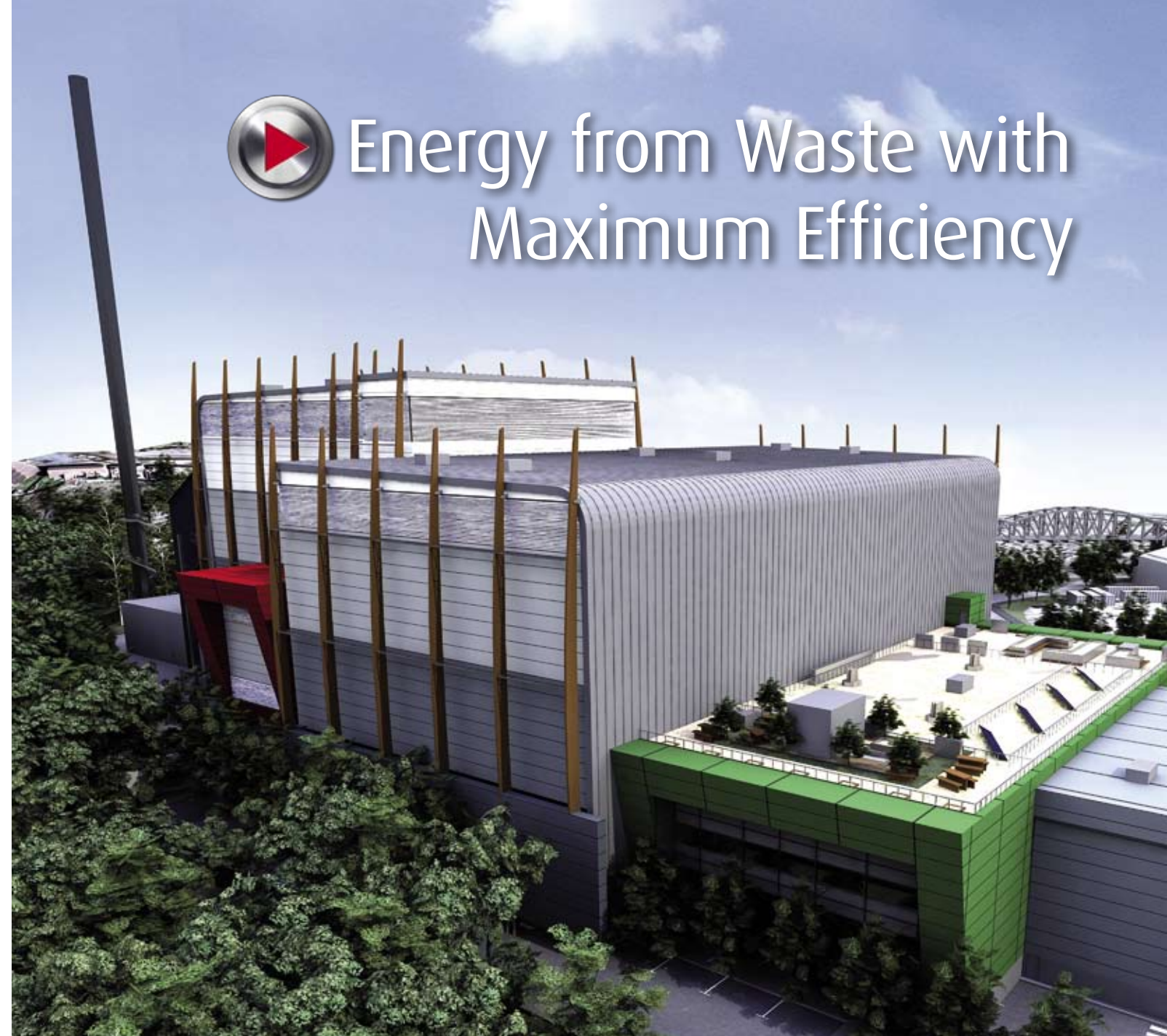




# Energy from Waste with Maximum Efficiency



## Plymouth Energy from Waste Plant

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Resources  Innovation.

 **MVV** Umwelt





# Resources Innovation.

## MVV Umwelt

### Responsible waste disposal Energy with added value

Ensuring reliable, safe waste disposal and extracting valuable energy from domestic and commercial non-recyclable waste – with around 50 years' experience MVV Umwelt, under the umbrella of German utility company MVV Energie, is a technological leader in the field of biomass power plants, waste fired power plants and high-efficiency cogeneration. In Germany, power plants with an annual waste incineration capacity of around 1.6 million tons are currently in operation at four sites. In the interests of sustainable waste management, the aim here is to utilise all non-recyclable waste components as fuel. As well as planning, building and operating power plants, MVV Umwelt carries out comprehensive resource management for its clients. Treatment and power plants are always planned and built to state of the art standards, with individual strategies for different types of waste and treatment processes – for both public sector waste management services and industrial and commercial partners. Today, in addition to industrial and commercial waste, non-recyclable waste from 19 local authorities with a total catchment area of around four million people is thermally processed and disposed of. For us, generating heat and electricity from waste in a recycling strategy that protects the climate and saves resources is a major contribution to sustainable environmental protection: **Resources. Innovation.**

## MVV Environment Devonport Ltd.

### A combined heat & power plant in Plymouth – a benchmark for the UK

MVV Environment Devonport, a subsidiary of MVV Umwelt, was awarded the contract for financing, planning, building and operating a waste incineration facility in south west England. Construction is due to commence in 2012, and the plant is planned to go into operation at the end of 2014. The contract for operating the plant will run for 25 years.

#### An interesting market for waste management

In the UK, the total amount of municipal waste is 35 million tonnes a year. Of this, 40 % is recycled, 48 % goes to landfill – and only 11 % is thermally processed (source: EUROSTAT 2009). However, under new EU waste legislation, UK local authorities are being saddled with expensive landfill taxes. Conversely, the construction of waste incineration plants is being actively encouraged under the Private Finance Initiative scheme.

#### A location with particular advantages

Devonport Royal Dockyard in Plymouth is the oldest and largest naval base in Europe. It offers ideal conditions for the establishment of a high-efficiency cogeneration plant: as the region's largest consumer of energy, the Royal Navy will save 20 % on its energy costs by obtaining heat and electricity directly from the combined heat and power plant. On the other hand, the local authorities benefit from lower waste management costs, which will considerably lessen the burden on taxpayers.

The plant will have an annual incineration capacity of 245,000 tons and will achieve an overall net efficiency of up to 49 % – more than twice as much energy as is usually the case in UK plants at this time.

#### Technological leadership wins the day

In three and a half years of planning, not only have all technological challenges been overcome, but all the hurdles of the complex UK planning permission system have been cleared as well. MVV has asserted itself amongst the competition – as a fair partner for all, with the goal of achieving maximum energy efficiency.



#### Facts and figures

Planning permission	Granted February 2012
Operational date	November 2014 (planned)
Types of waste	Mixed municipal waste and industrial and commercial waste
Firing	Moving grate
Number of boilers	1
Waste bunker capacity	10 days plus additional bale storage capacity
Annual throughput	245,000 Tonnes
Waste calorific value	9,500 kJ/kg
Live steam output	Approximately 800,000 Tonnes/year at 60 bar / 420 °C
Electricity output	190,000 MWh/year
Residues	Bottom ash, approximately 60,000 Tonnes/year APC, approximately 8,500 Tonnes/year
Personnel	33 employees