



COWES POWER STATION



An **RWE** company

FLEXIBLE POWER FROM OIL

Cowes Power Station is an open cycle gas turbine (OCGT) power plant, owned and operated by RWE npower. It helps to provide a reliable supply of electricity to the south of England.

Cowes Power Station was opened in 1982, on the site of a former coal fired power station. It is the only major power station on the Isle of Wight, and is capable of generating up to 140MW of electricity. Open cycle gas turbine plants have the advantage of being able to produce large amounts of power very quickly. The station is integrated into the National Grid transmission system, enabling it to export electricity to the mainland as well as provide a greater security of supply on the island.

RWE npower, part of the RWE Group, is a leading integrated UK energy company. We operate and manage a diverse portfolio of flexible coal-, oil-, biomass- and gas-fired power stations, with the capacity to produce over 11,000MW of electricity.

npower, one of the UK's leading energy suppliers, serves around 6.5 million residential and business customers.

We are also committed to developing innovative products which allow our customers to improve their energy efficiency and make sustainable energy choices.

RWE npower renewables is the UK subsidiary of RWE Innogy and is one of the UK's leading renewable energy developers and operators, committed to developing and operating wind farms and hydro plant to produce sustainable electricity. Our current operational wind farms have a combined capacity of over 500MW, with many other projects at various stages of development.

NPOWER BRIGHTER FUTURES

The aim of our npower Brighter Futures programme is to inspire young people, from their first day at school to their first day at work. We develop their skills and knowledge to help make their own choices, and empower them to reach their vision of a 'brighter future' for themselves and for the environment.

npower Brighter Futures brings together npower's education programmes – from primary schools through to universities. This includes our Power Technician Traineeship and Graduate recruitment schemes.

Our programmes focus on environmental education – energy generation, energy efficiency, climate change and sustainability – and includes our award winning npower Climate Cops programme.

We are committed to increasing the pool of Science, Technology, Engineering and Maths talent and meeting the recruitment challenges we face in the energy industry. To find out more about our education commitment and initiatives visit www.npower.com/education. Young children can visit www.npower.com/climatecops to play our interactive energy saving games.



CARING FOR THE COMMUNITY AND THE ENVIRONMENT

The Isle of Wight has had an electricity supply since 1899, when the first generating plant was switched on at Ventnor to light up the town hall and a nearby hostelry.

In the mid-1920s, the Isle of Wight Electric Company concentrated generation at East Cowes.

A coal-fired power station was built adjacent to the Royal Navy steam engineering works for cadets. The power station began operating in 1928, and was closed in 1976 to make way for today's plant.

The current plant is built on a site adjacent to the former power station on the river Medina at East Cowes. It was completed in 1982 at a cost of £30 million and, at the time, was the largest single investment ever made on a project on the Isle of Wight.

Great care is taken to minimise the impact on the environment through continuous improvement in all aspects of the company's activities.

A team of specialists ensure that at all times Cowes Power Station operates in compliance with the conditions set by the Environment Agency.

The station is surrounded by a number of extremely environmentally sensitive areas and we work closely with a number of specialist organisations – including the Hampshire and Isle of Wight Wildlife Trust, Natural England and the Isle of Wight County Council Countryside Service – to ensure we conserve and enhance the rich biodiversity that surrounds the power station.

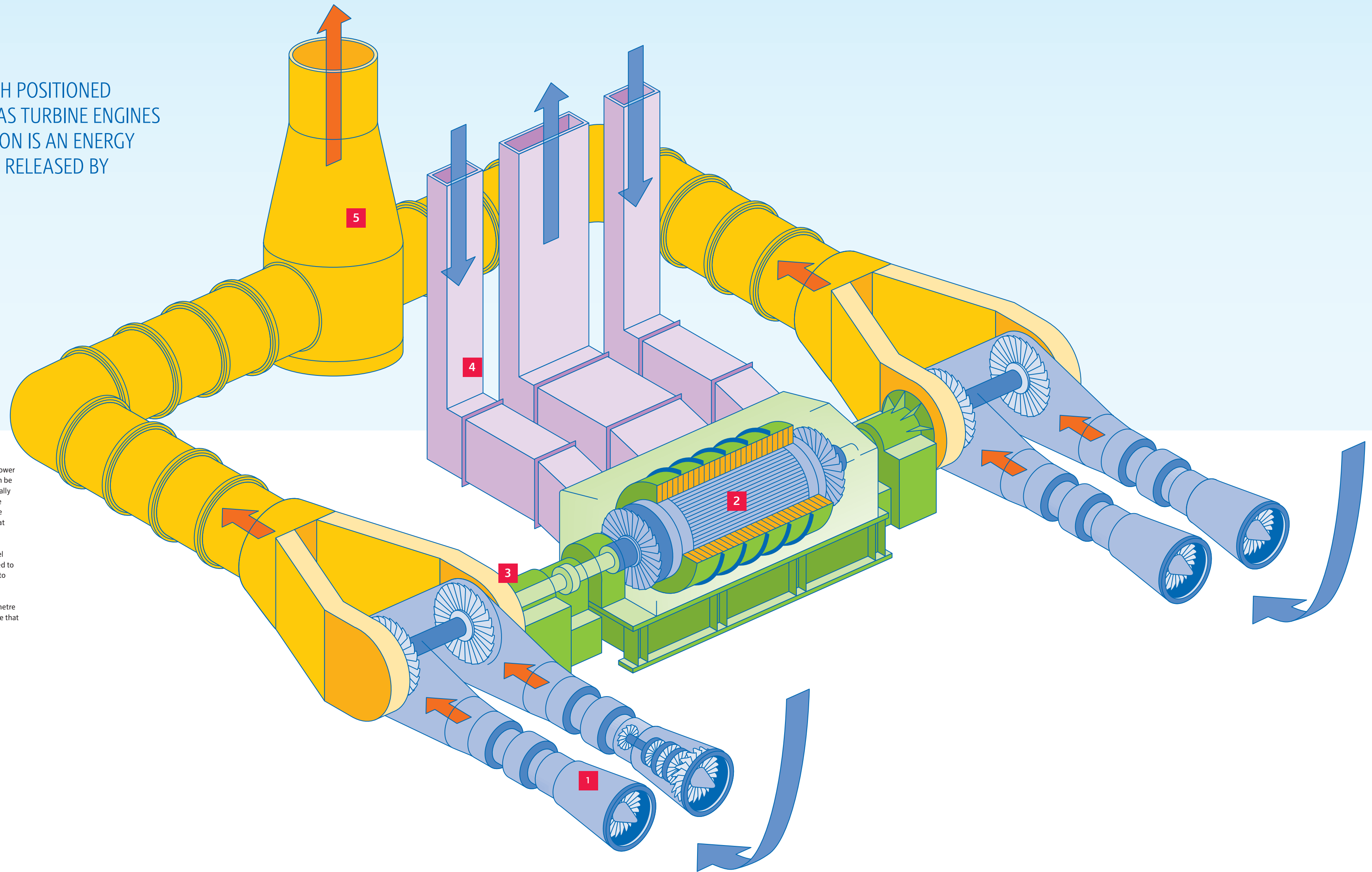
We take our responsibilities to the communities in which we operate extremely seriously. We support local environmental initiatives, charitable causes and educational projects. Solent Middle School has hosted npower Climate Cop Academies, part of our Brighter Futures programme. We are also proud sponsors of the Newclose Community Cricket Ground on the Isle of Wight.







AT COWES, TWO 70MW GENERATORS ARE EACH POSITIONED BETWEEN PAIRS OF ROLLS ROYCE OLYMPUS GAS TURBINE ENGINES WHICH USE LIGHT FUEL OIL. THE POWER STATION IS AN ENERGY CONVERTER, TURNING THE CHEMICAL ENERGY RELEASED BY BURNING OIL INTO ELECTRICITY.



Oil is usually delivered to Cowes by seagoing tankers. Fuel may also be delivered by road tankers and stored in four storage tanks. The power station generates 140MW of electricity from its two 70MW generators, using eight Rolls Royce Olympus engines (01) – an industrial version of the aero engine.

A motor starts the turbine shaft rotating; air is drawn into the combustion chamber, compressed, mixed with atomised light fuel oil and then ignited. The expanding hot gases continue to drive the turbine and the compressor within the engine.

The hot exhaust gases produced are used to drive the power turbine. This is coupled by a fully automatic clutch to the generator, which produces electricity. (02)

Each engine has its own power turbine (03).

The engines are grouped in pairs, as are the power turbines. Any one or all of the four engines can be used to drive the turbine/generator, but normally all four are used. The gas turbine engines have a total output of 200,000 horse power and use 762 litres of fuel oil per minute when running at maximum output.

Dust-free air (which is drawn through roof-level intakes equipped with special filters) is required to cool the generators and the (04) engines and to provide the air for combustion.

(05) Exhaust gases are discharged up the 80 metre chimneys, which have been designed to ensure that the gases are adequately dispersed.

HOW TO FIND US

Cowes Power Station is just off the A3021, about 1 kilometre from East Cowes.

By rail and ferry

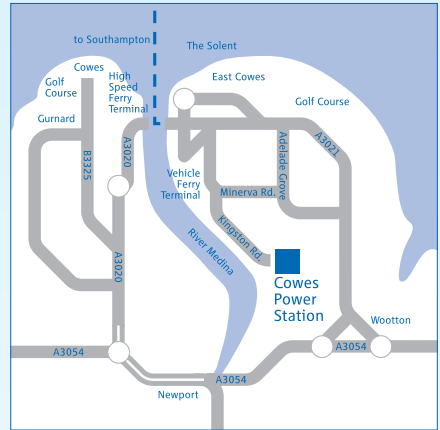
Southampton Central railway station has a link bus to Southampton Town Quay ferry terminal. Take the Red Funnel 'high speed' ferry from Town Quay terminal 2 to West Cowes.

Vehicle ferries

Wightlink Portsmouth to Fishbourne, Lymington to Yarmouth or Red Funnel Southampton Town Quay terminal 1 to East Cowes.

From East Cowes

Continue from the terminal over the first roundabout, continue up the hill – bear left, then turn right into Adelaide Grove. Turn right just before left-hand bend into Minerva Road, then take the first left into Kingston Road. At end of Kingston Road turn left. The power station gates are then on the right. Operate the bell push or use the telephone for access.



RWE npower

Cowes Power Station
Kingston Road
East Cowes
Isle of Wight
PO32 6JS

T +44 (0)1983 292911
F +44 (0)1983 290224
E cowes@rwenpower.com
I www.rwenpower.com