for handling voltages in the kV range, frequencies in the kHz range and power levels in the kW range.

SUMMARY OF THE INVENTION

According to an aspect of the invention, there is provided a method of operating an ozone generating apparatus comprising an ozone generating device connected to a power supply apparatus for supplying electric power from the power supply apparatus to the ozone generating device,
the method comprising:
- supplying a flow of oxygen-containing gas to the ozone generating device,
- controlling the flow of oxygen-containing gas and controlling the power supplied from the power supply apparatus to the ozone generating device so as to obtain a predetermined yield of ozone from the ozone generating device and so as to minimise the combined consumption of resources consisting of oxygen-containing gas and power supplied from the power supply apparatus.

Herein disclosed is ~~The invention provides~~ a power supply apparatus for supplying electric power to a capacitive load having a capacitive load impedance. The apparatus comprises
- a transformer with a first coil and a second coil,
- a positive half-period driver and a negative half-period driver arranged to alternatingly supply positive half-periods of voltage and negative half-periods of voltage, respectively, to the first coil,
the second coil is connectable to the capacitive load so as to form an electric resonance circuit having a resonance frequency, and to supply electric voltage to the load, and
- a device for determining zero crossings of the voltage supplied to the first coil and for causing alternation between positive and negative half-periods of voltage supplied to the first coil at the zero crossings of the voltage supplied to the first coil, wherein the device for determining zero crossings comprises a third coil on the transformer.

An effect of this is that alternation between positive and negative half-periods of voltage supplied to the first coil is controlled by the actual resonance frequency of the resonance circuit formed by the second coil of the transformer and the capacitive load.

Another effect is that electric switching noise from the switching elements is avoided since switching is done at times with no or very low voltage across the switching elements.

Such a power supply apparatus is useful for supplying electric power to a capacitive load having a capacitive load impedance such as an ozone generating device, and in particular an ozone generating device in which a suitable combination of frequencies and voltages that are sufficiently high to produce a corona discharge in the ozone generating device.

Other examples of capacitive loads include, without limiting the invention thereto:
- reactors for the destruction or disintegration of substances or gases. Examples of gases that are considered to have a negative effect on the environment if released are Halon 1301 and other gases having fire extinguishing properties, SF_6 and other gases used e.g. for their electrical properties, and gases used in cooling apparatuses;
- piezo-electric transducers used e.g. for generating ultrasound in a medium for cleaning of objects immersed into the medium;