

**Title of Article :** *Design of an Inline Power Supply System for Remote Oil and Gas Installations.*

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**Abstract:** This disclosure is for the design of an inline power generating system using fluid flow in pipelines or flow lines (Crude oil or water). The system involves the use of special turbines to convert the kinetic energy in fluid flow into rotational energy in the turbine and into electrical energy in from the DC or AC generator. The inline power supply system comprises of a turbine system installed in a branch pipe. The system is inserted on a flow line from the wellhead so that it utilizes the fluid flow to provide the required kinetic energy to turn the turbine which is direct coupled to a gear and a DC generator. The output of the generator is fed to an electronic board which comprises of a regulator and a DC/DC converter. The DC/DC converter is responsible for providing the required DC level for wellhead instruments and communication devices. The system comprises of two identical installations in branched pipes providing 100% redundancy. The main application for this technology is in the provision of safe and vandalization proof power supply to remote oil and gas production installations especially at the wellheads. No oil or gas preprocessing is required as the turbine requires only the kinetic energy in the fluid. The use of an active flow line also guarantees the system protection against vandalization. The 100% redundancy guarantees that the system has negligible impact on the production process once deployed. The system provides a safe and cost effective safe power supply system for wellhead locations and reduces the OPEX required to keep the production facility powered