Many renewable energy systems have developed into valuable alternatives to earlier technologies in certain applications and environments. Integrating solar and solar/wind-hybrid technology into your existing industrial installations can result in higher efficiency, easier maintenance and increased reliability. Examples of such applications are: stand-alone energy supply (off-grid, remote, onshore and offshore), cathodic protection e.g. of oil & gas pipelines, hazardous areas (ATEX compliant), telecommunications, signalling and warning, monitoring and instrumentation.

The advantage of a hybrid power system is that when one power source is at low levels the other source is usually at higher levels. On a cloudy, windy day when solar panels produce lower outputs, a wind generator may provide more energy. In contrast, on a bright cloudless day the solar panels will usually outproduce wind generators. Effective windgenerator use requires selecting a location with the night wind conditions. Balancing the power sources to achieve the highest level of system performance takes some experience. Each location must be assessed to determine sizing for optimum performance.

Meteorological data from the proposed CP location is analysed and computerised design is used to optimise the solar array, wind generator and battery storage capacity, external circuit and anode groundbed parameters.

The components

The main components for a hybrid power system for a cathodic protection system are the solar array, the wind generator, the battery charge controller, the battery storage and the output regulator.

The entire system is modular and can be adapted to enduser requirements.

- **Solar modules**
- **Module support structure**
- **Wind generator with support structure**
- **Charge controller**
- **Battery and battery housing**
- **CP-output regulator**
  CORROCONTROL OUTPUT REGULATOR (CCOR)
  Further technical details can be found in Chapter 10 Document 10-100-R0

Advantages of hybrid power systems:

- **More consistent power supply**
- **Lower total system cost**
- **Compensation of weather fluctuations**
- **Reduced deepcycling of batteries**
- **Extended battery life**

Further technical details can be found in:
Document No.: 03-100-R1 (Solar power units)
Document No.: 03-300-R1 (Wind generators)