Wind Farms

Dr W. Richard J. Dean

We're all familiar with wind turbines – we see them at various places around the Western Cape – the Roggeveld, the Hopefield and Darling area, for example, and probably more to come. They are expensive. We have no idea what they cost per tower and fan, but should imagine the money involved would be similar to the gross national product (GNP) of a small country. They must generate a lot of electricity per unit Rand to justify the monetary and environmental costs. The infrastructure is complex, and you might have wondered why these giant fans do not fall over? Well, their foundations are strong, requiring quite a bit in the way of design and expertise and materials (and damage to the environment) and a large amount of $$. The whole operation, what with building the infrastructure, clearing the lay down area, where the towers, fan blades, machinery and personnel are housed, does quite a lot of irreversible damage to the environment.

The base of a wind turbine. A large hole excavated in soil and bed rock by heavy-duty diggers, and then a carefully constructed frame using tons of re-bar is built, and tons and tons of concrete around the frame, and then filled to ground level with rubble over the concrete. Needless to say that getting to this point has meant heavy-duty excavators, trucks bringing ready-mixed concrete, personnel carriers bringing the workers, and bakkies bringing the site engineer, all driving over what might have been (and most likely was) pristine rangeland.

Ready for the tower. There is no sign that under this is a large amount of steel and concrete.

Placing a tower in position prior to lifting the hub with the fan blades already in place. A special crane is used to take the hub to the top of the tower, where it will be lined up and fitted under the guidance of a perched engineer, wearing a hard hat and a parachute, we hope.

Wind generating towers and fans along a ridge near Hopefield on the West Coast.●