## SCIENCE DIMENSION 1983/6

## **CURRENT LARGE GRID-COUPLED WIND TURBINES**



far exceeds our needs, and wind turbines operate at an efficiency of 40-45 per cent (about twice that of solar devices), why not tap this source in a big way?

One reason is that the strongest winds tend to blow in remote regions where the energy isn't needed, and there



exists no cheap, convenient way of storing and transporting energy. While it may be true that the total energy in wind is large, it is also a diffuse, fluctuating source, unevenly distributed across the land. Remember too, that the initial cost of a wind turbine is high (although you don't have to pay fuel bills to run it!).

Still, the winds will be with us as long as the sun shines, and they qualify at the very least as a power we source to supplement conventional sources like hydro, coal, and nuclear power. To find out how much power can tap from the winds, then, we need a lot more practical experience with windmills, particularly with models as large as ÉOLE. Calculations show that if hundreds of such machines were built where winds are reasonably strong and power lines are nearby, they could provide as much as 5 per cent of Canada's electric power needs. No mean amount, by anyone's measure.

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