



# Return of investment rate

## Return of investment rate

**A chalet located at an isolated area, requires Electrical Energy of 2 KWH per Day, 365 Day per Year.**

Present Solution

Buy a small Diesel Generator with price of \$2500 + operating cost of 1.56 \$/KWH including maintenance cost.

Another Solution

Install 1000-Watt Windmill, complete with batteries of 220 Ah capacity at the cost of =

\$3000 Windmill + \$1000 Batteries + \$500 Installation = \$4500

Add 5% for changing batteries every 5 years =  $4000 \times 5\% = \$200$

Total investment in 5 years =  $4500 + 200 = \$4700$

Cost deference between Windmill installed verses Diesel Generator =

$4500 - 2500 = \$2000$

Annual operation cost of Diesel Generator =

$1.56 \text{ \$/KWH} \times 2 \text{ KWH/Day} \times 365 \text{ Days} = \$1139$  (Minus 5% maintenance \$200)

$1139 - 200 = \$939$

Return of investment rate

$\$2000 / 939 = 2.13 \text{ Years}$

.....  
**A chalet located at an isolated area, requires Electrical Energy of 4 KWH per day, 3 Day per Week, 52 Weeks per Year**

Assume 4 KWH per Day of Electrical Energy are required for a Chalet during weekend only, 3 days/week x 52 weeks/year = 156 day/year

Annual operation cost of Diesel Generator =

$1.56 \text{ \$/KWH} \times 4 \text{ KWH/Day} \times 156 \text{ Days} = \$973$  (Minus 5% maintenance \$200)

$973 - 200 = \$739$

Return of investment rate

$\$2000 / 739 = 2.7 \text{ Years}$