

Wind/Diesel Power System for High Wind Penetration

Precondition

Wind speed 7.7 m/s
 Wind Penetration 78-87%
 Fuel Saving 78-87%
 depending on wind conditions

Basis in general

- WD gen.set. must cover max consumer when no wind
 - WT capacity must cover average consumer with average wind speed
 WT capacity 120-150% of consumer max load






Wind Turbines (WT)

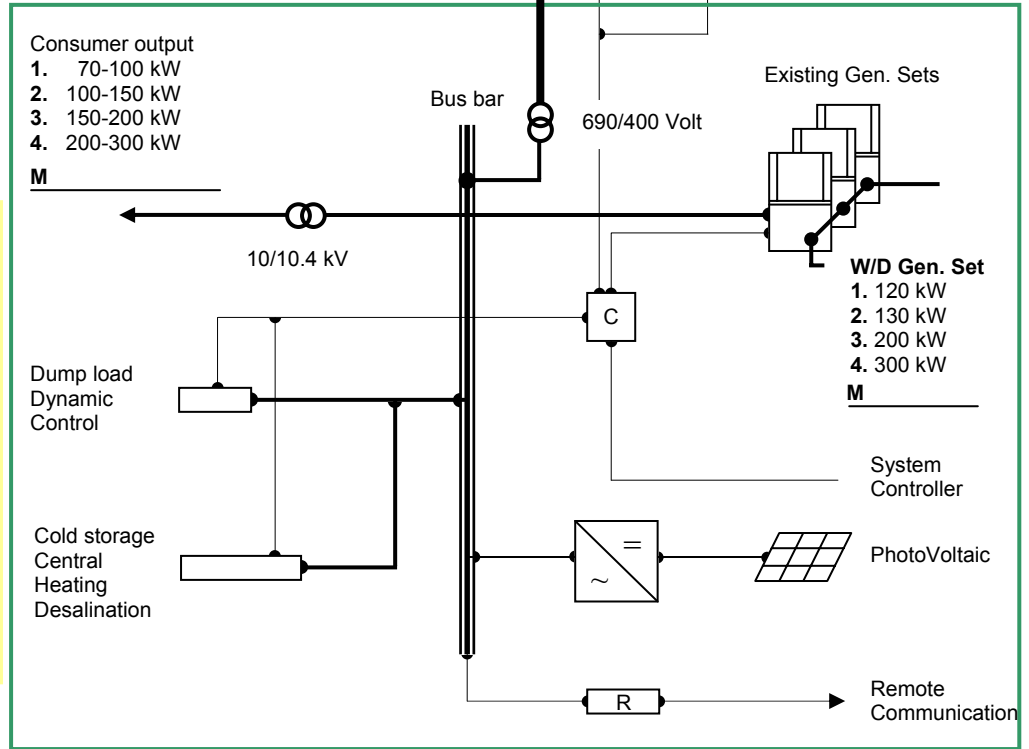
1. 1 x 150-225 = 150-225 kW
2. 1 x 225 = 225 kW
3. 1 x 250 = 250 kW
4. 2 x 225 = 450 kW

Project model

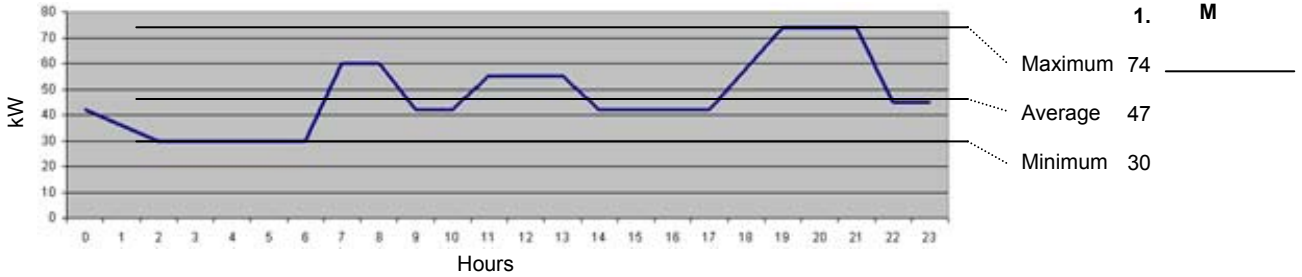
M _____
 Consumer load
 Max kW

SYMBOLS

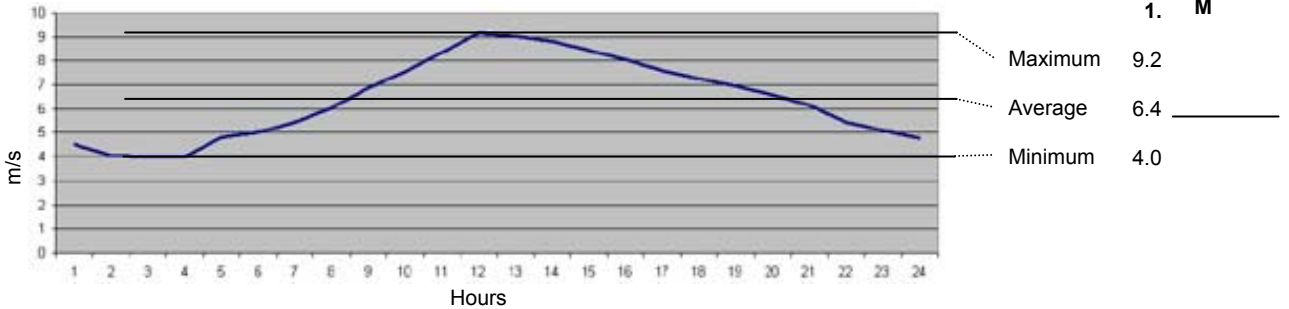
-  690 Volt
-  110/380 Volt
-  Power, small
-  Signal
-  Rectifier



POWER CONSUMPTION PATTERN



WIND SPEED PATTERN



Power and Wind Pattern

Calculation program for optimal combination between wind and diesel power

Waste energy and surplus wind energy can be utilised obtaining the highest Plant efficiency

Drw. General
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No 002-0-0000
 Project Number - Place

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Wind Diesel Power System
 Basis capacity for wind and diesel combination