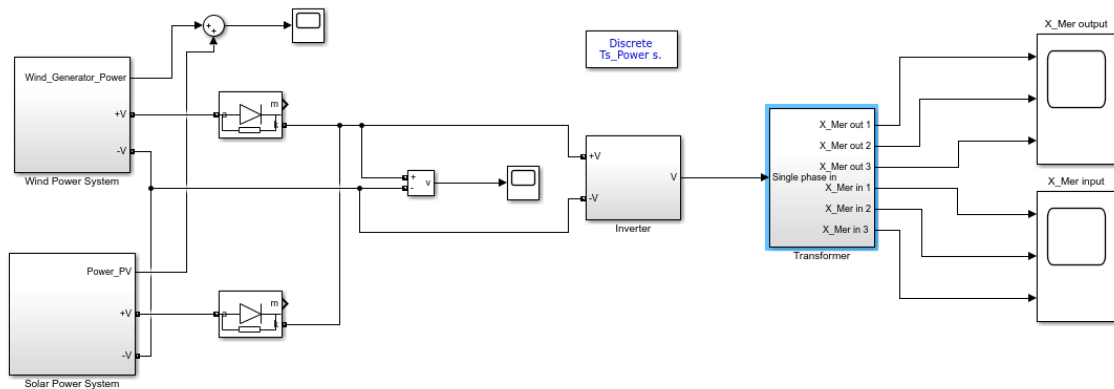
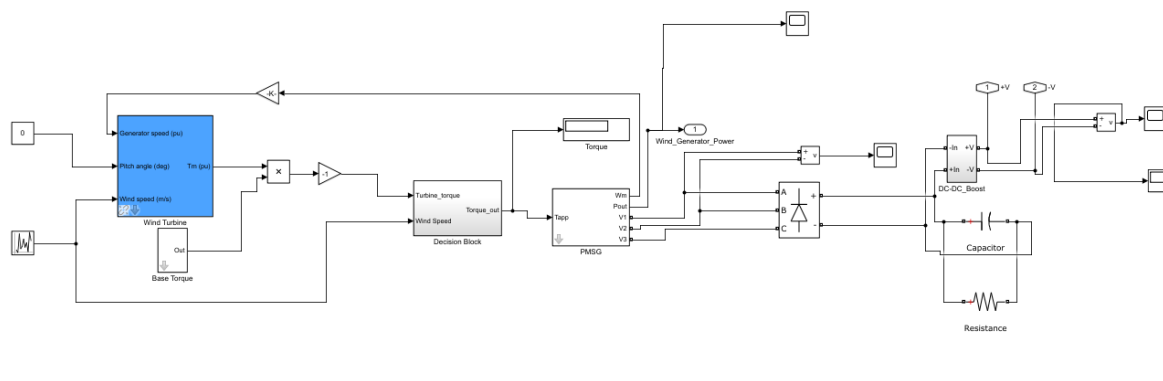


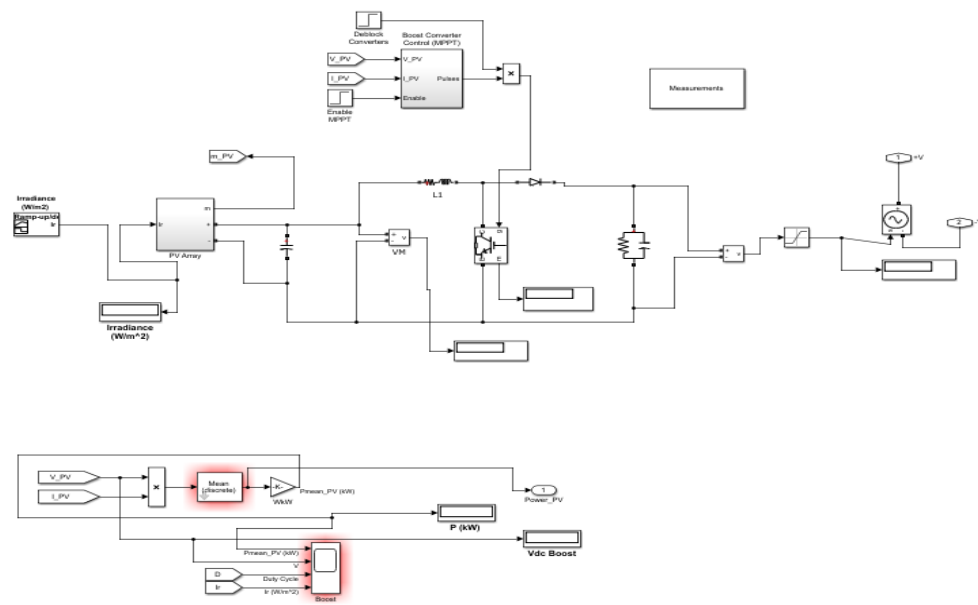
Solar - Wind Hybrid Power System Simulation



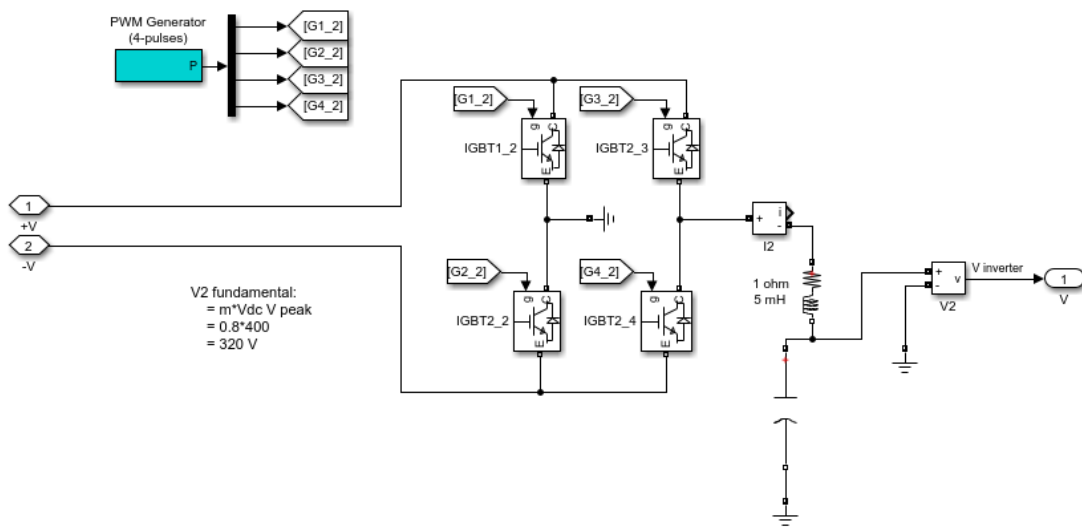
Wind Power Equivalent subsystem:



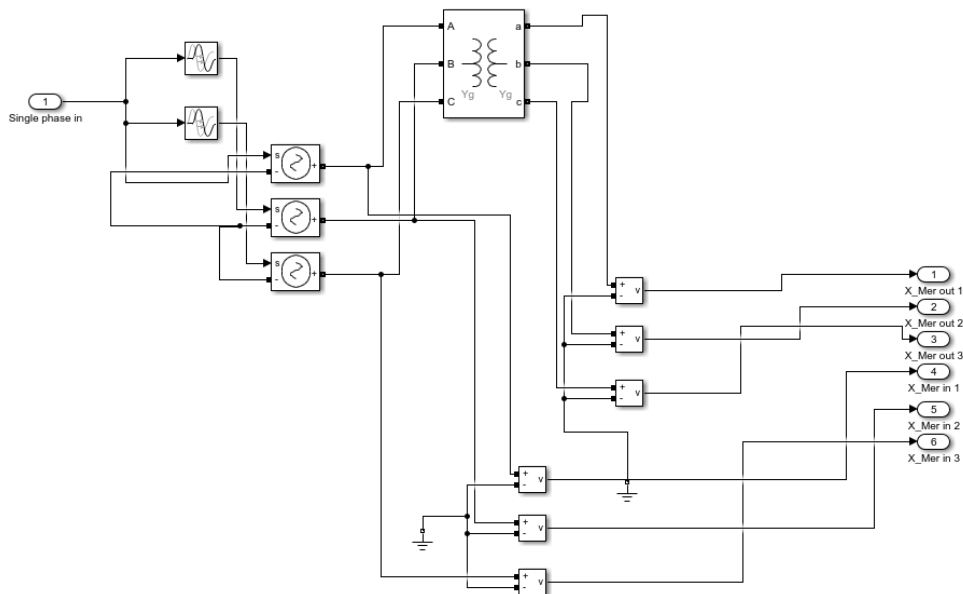
Solar power equivalent subsystem:



Inverter circuit design:



Transformer Equivalent system:



Input Parameters code:

```

clc;
clear;
close all;
%'SunPower SPR-305-WHT';

nCells= 96; % Number of cells in series
Pmp= 305.2; % Maximum power (W)
Vmp= 54.70; % Maximum power voltage (V)
Imp= 5.58; % Maximum power current (A)
Voc= 64.20; % Open circuit voltage (V)
Isc= 5.96; % Short circuit current (A)
TempC_Pmp= -1.154e+000; % Maximum power temp. coefficient (W/deg.C)
TempC_Vmp= -1.860e-001; % Maximum power voltage temp. coefficient (V/deg.C)
TempC_Imp= -2.120e-003; % Maximum power current temp. coefficient (A/deg.C)

```

```

TempC_Voc= -1.770e-001; % Open circuit voltage temp. coefficient (V/deg.C)
TempC_Isc= 3.516e-003; % Short circuit current temp. coefficient
(A/deg.C)
Rs= 0.037998; % Series resistance of PV model (ohms)
Rp= 993.51; % Parallel resistance of PV model (ohms)
Isat= 1.1753e-08; % Diode saturation current of PV model (A)
Iph= 5.9602; % Light-generated photo-current of PV model (A)
Qd= 1.3; % Diode quality factor of PV model
k= 1.3806e-23; % Boltzman constant (J.K^-1)
q=1.6022e-19; % electron charge (C)
T=273+25;
Npar =5
Nser=1
Ts_Power = 1e-6;
Ts_Control = 100e-6;
Ts = Ts_Power;

```

```

Vm=Vmp;
Im=Imp;

```

```

VT=k*T/q*nCells*Qd;

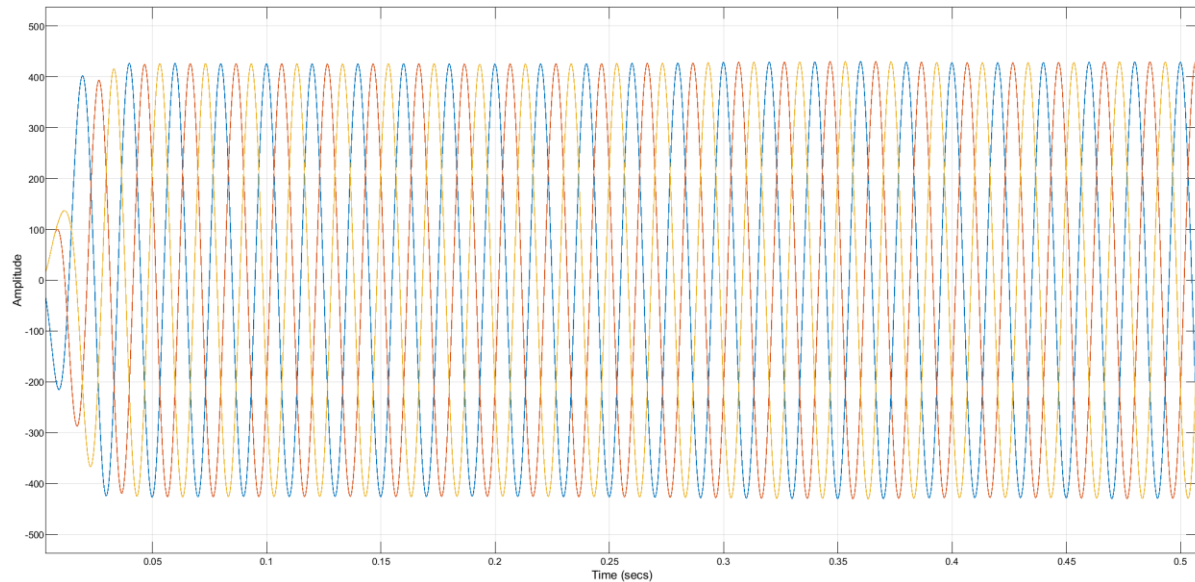
```

```

Iph_array=Iph*Npar;
Isat_array=Isat*Npar;
VT_array=VT*Nser;
Rs_array=Rs*Nser/Npar;
Rp_array=Rp*Nser/Npar;

```

INPUT OF SYSTEM:



Output OF SYSTEM:

