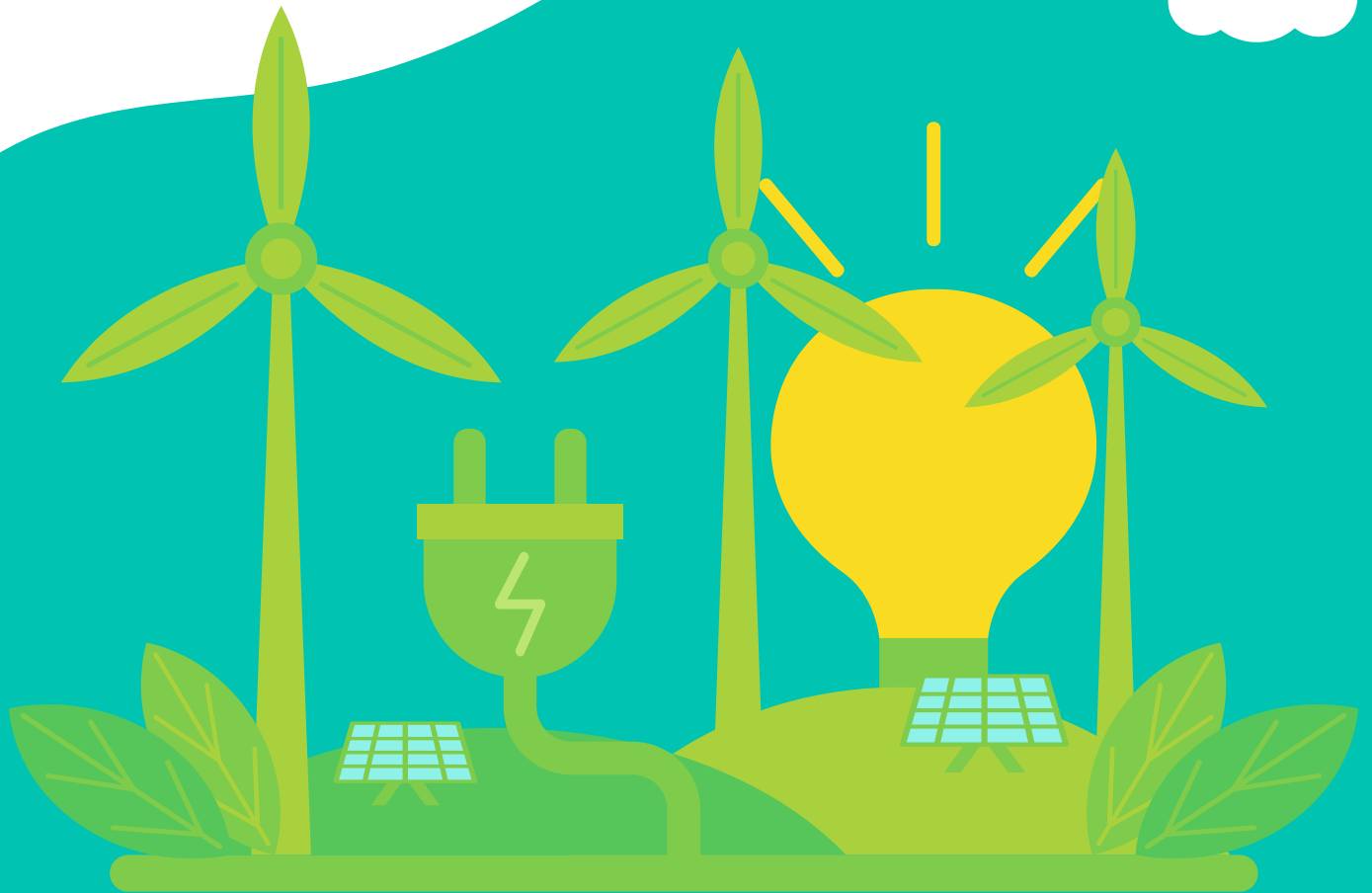# Zagazig University

Performance Evaluation of PV System
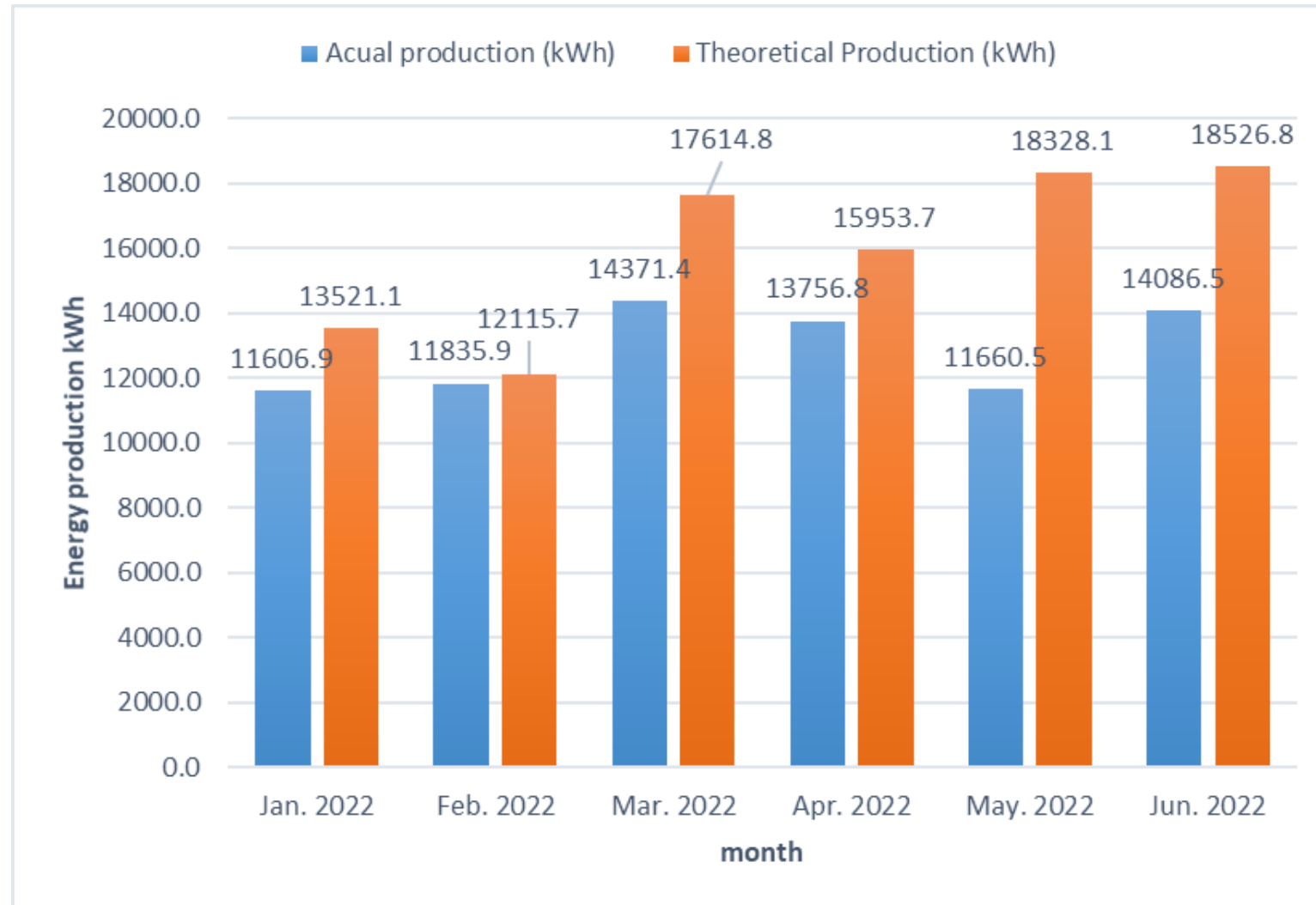
Semi-Annual Report

January – June 2022 2022

System Capacity
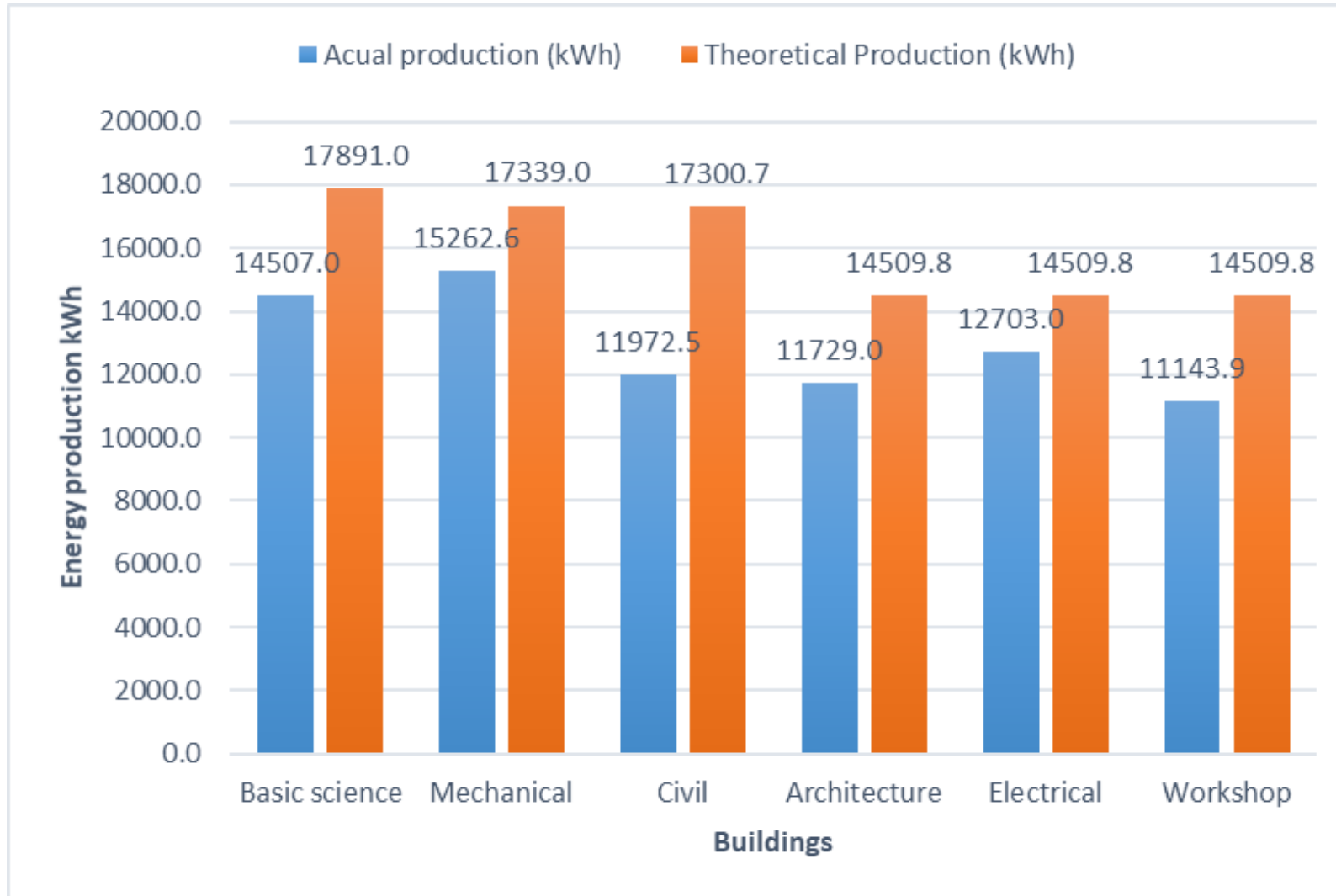
Building	Capacity (kW)
Basic science	20
Mechanical	20
Civil	20
Architecture	15
Electrical	15
Workshop	15
Overall System	105

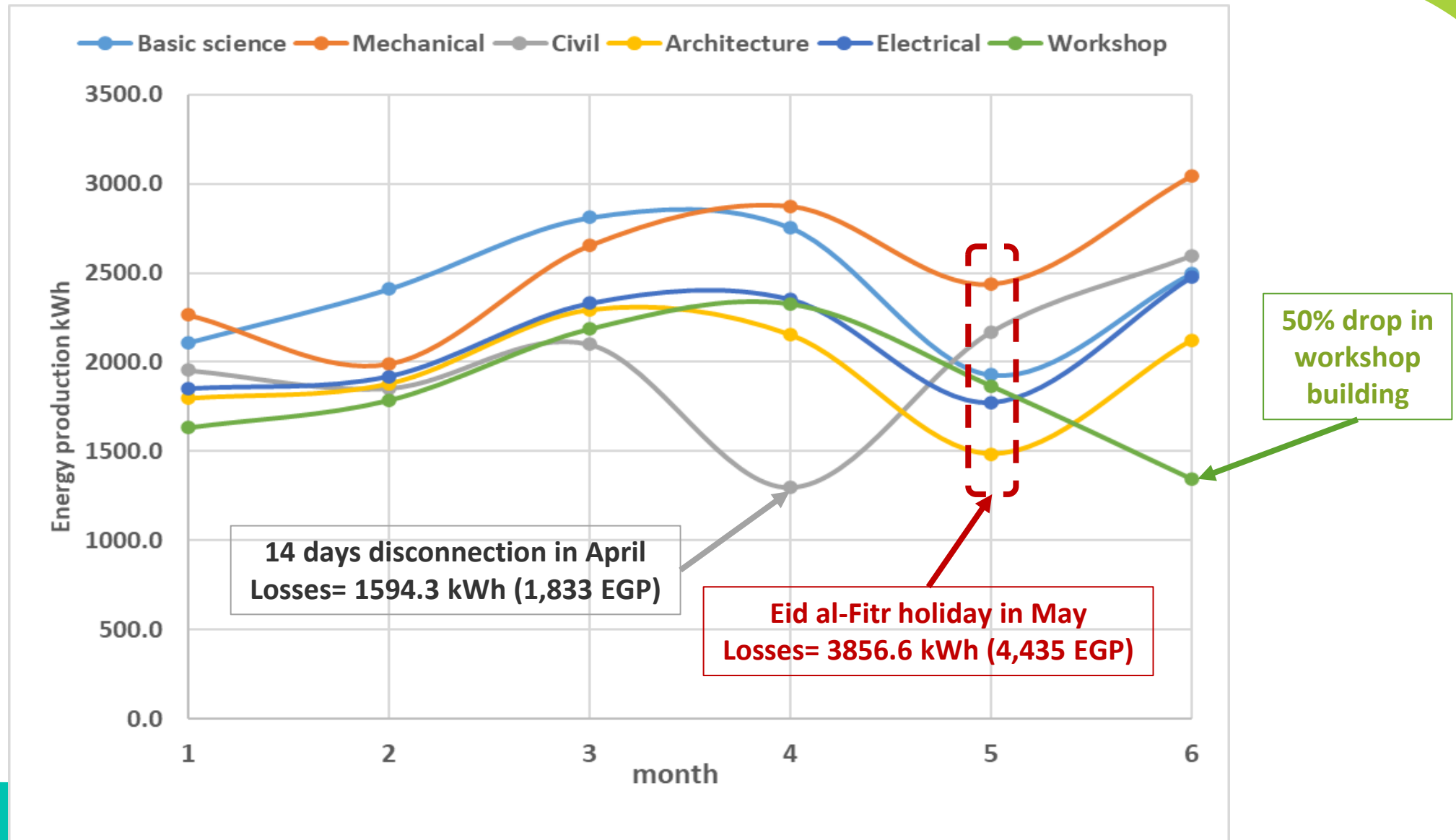# Production over last 6 months (Jan. – Jun. 2022)

Theoretical production is calculated using SAM software

Production from each building (Jan. – Jun. 2022)

Theoretical production is calculated using SAM software

Production from each building (Jan. – Jun. 2022)

Overall Production (Jan. – Jun. 2022)

Overall system production	77.3	MWh
Revenue	88,916	EGP
CO_2 reduction	34.7	Ton
overall energy losses	18.7	MWh
losses due to system disconnection	11.4	MWh

System Energy losses (Jan. – Jun. 2022)
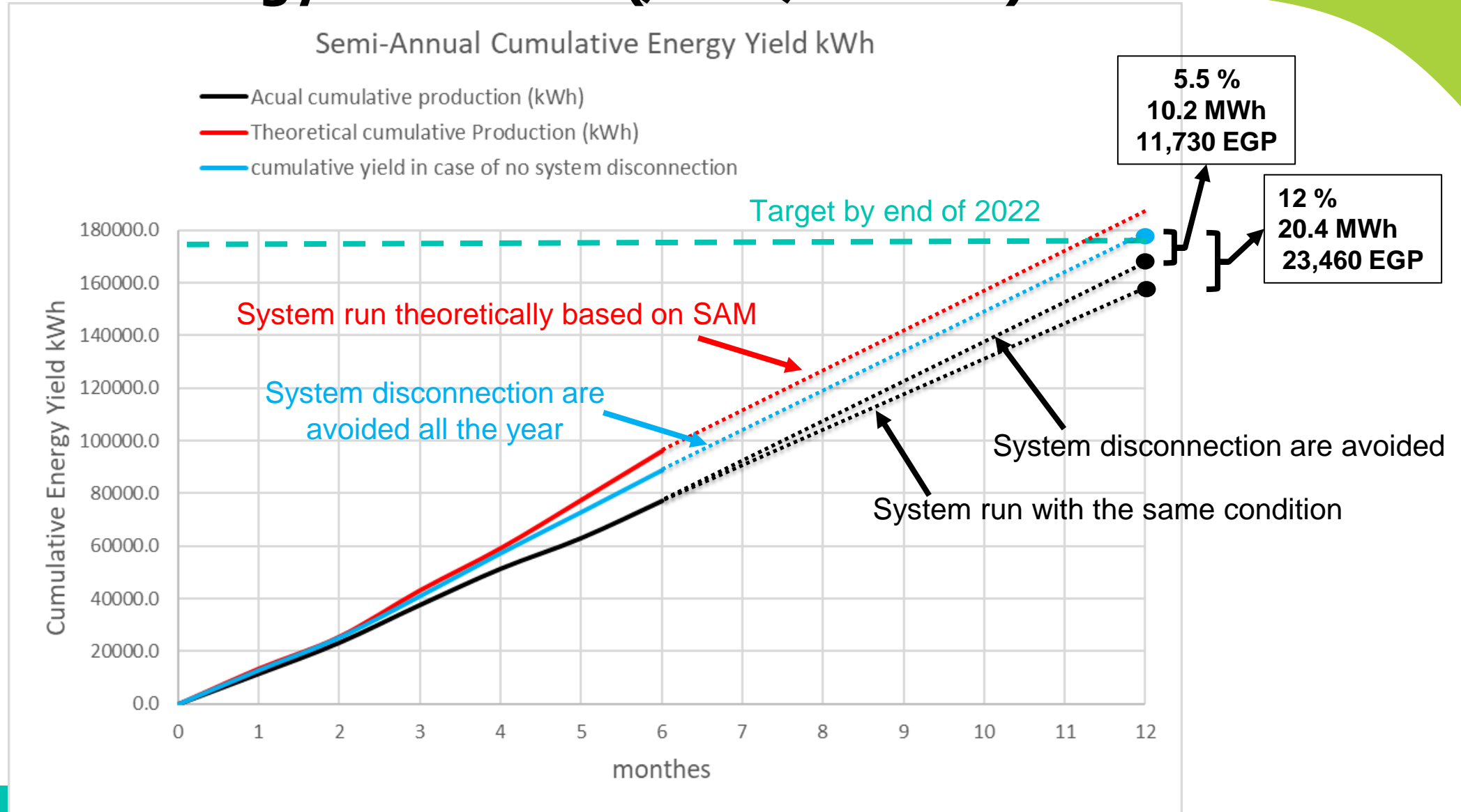

Miscellaneous losses includes the difference between Actual yield and SAM software results

Estimated Annual Yield

Annual target of system yield	175	MWh
Percentage of semi-annual yield	44.2	%
Estimated annual yield if system continue at the same condition	154.6	MWh
Percentage from annual target	88	%
Estimated annual yield if system disconnection are avoided	164.8	MWh
Percentage from annual target	94.2	%

Cumulative Energy Production (Jan. – Jun. 2022)

Semi-Annual Cumulative Energy Yield kWh

— Acual cumulative production (kWh)
— Theoretical cumulative Production (kWh)
— cumulative yield in case of no system disconnection

Target by end of 2022

5.5 %
10.2 MWh
11,730 EGP

12 %
20.4 MWh
23,460 EGP

System run theoretically based on SAM

System disconnection are avoided all the year

System disconnection are avoided

System run with the same condition

Recommendations

The following some recommendation to improve PV system performance

❖ The issue of disconnecting the buildings' energy during the holidays must be considered.

❖ Continuous cleaning of solar cells improves system efficiency (at least once a week).

❖ Monitor the system performance, continuously, in order to solve issues as they emerge.

❖ Avoid interruptions on the system's internet connection, as these interruptions makes online system monitoring difficult.