



## Total Energy used for all AAST campuses.

### 1. Energy Density for AAST

The energy consumption of AAST is calculated first for each campus then the total consumption for all AASTMT campuses is computed. Table 1 shows the energy consumption during 2022 for all buildings and all branches in Alexandria.

Table 1 Analysis of Energy consumption/unit area for Alexandria branches

	Abo kir	Maimi	Wabour	Ganekliz	Total Alex
Plan (m <sup>2</sup> )	220000	12000	6000	720	238720
Floor Area (m <sup>2</sup> )	352000	33600	6000	720	392320
Consumption (kw)	9304497	1482312	420060	50389	11257258
Density (kw/m <sup>2</sup> )	26.43323	44.11643	70.01	70.01	28.69409

Similarly, the 2022 total energy consumption in all AAST branches overall Egypt is shown in Table 2. The energy consumption of all AAST branches and the respective energy consumption percentage are shown in Figure 1 and Figure 2, respectively. It is clear that most of energy consumption in AASTMT branches occurs in Alexandria campuses since they include the highest capacity of buildings, students and staff.

Table 2 Analysis of Energy for all AAST campuses

	Alex	Aswan	port Said	Alamin	Sheraton	Smart	Dokki	Total
Plan (m <sup>2</sup> )	3033.3	100000	100000	260000	4571.429	1750	3033.3	
Floor Area (m <sup>2</sup> )	14500	42000	42000	208000	32000	1750	14500	735569.7
Consumption (kw)	642621.2	1023876	939876	3949421	1411962	122540.3	642621.2	20303093
Density (kw/m <sup>2</sup> )	44.3187	24.378	22.378	18.9876	44.1238	70.023	44.3187	27.60186

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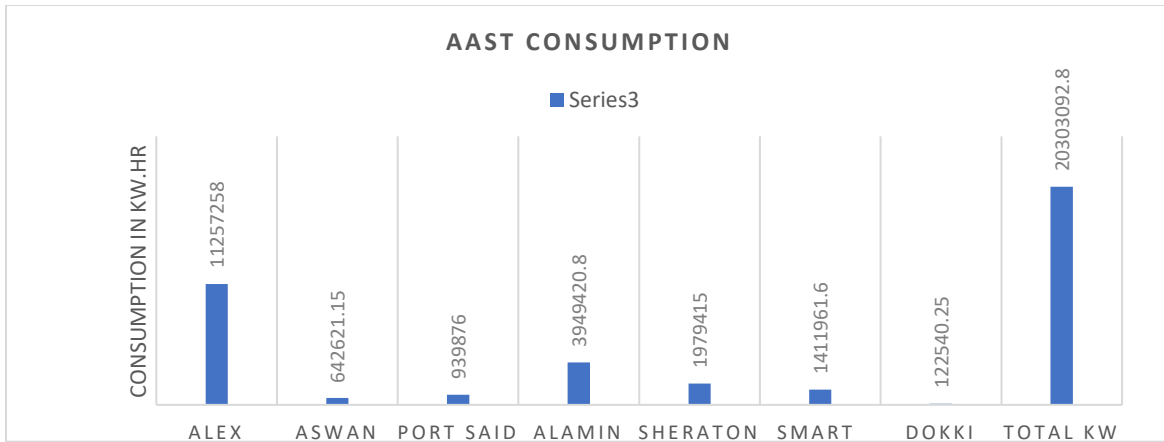


Figure 1 : Energy consumption in all AASTMT campuses

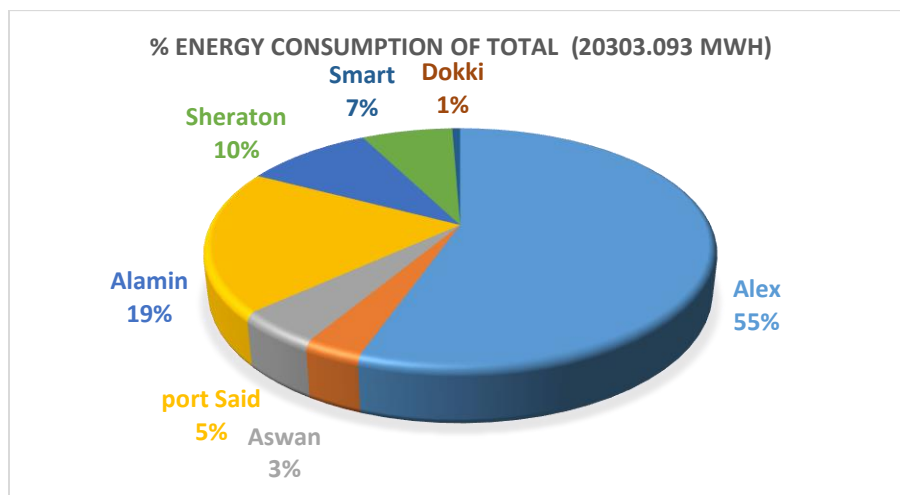


Figure 2 % energy consumption in all AASTMT campuses

Table3 shows the total energy in GJ and energy density in all AASTMT branches all over EGYPT. It is worth noting that more than 267 GJ were supplied from renewable energy resources which realizes AASTMT goals to divert to clean energy, reduce emissions and sustain serving the Environment.

Table 3 Energy Consumption in GJ/m<sup>2</sup> for AAST 2021-2022

total floor area (m <sup>2</sup> )	Consumption from grid (kW)	Consumption from grid (GJ)	Total energy (grid + Renewable energy resources)	Density (GJ/m <sup>2</sup> )
735569.7	20303093	73091.13	73358.25	0.09973

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## 2. Renewable energy sources

The energy supplies mainly from national grid in addition to some PV Plant in average 200kw installed on campus buildings. The national grid has 20% renewable energy according to National renewable energy Authority (NREA report 2022) as illustrated in Figure 3. Hence the total renewable energy resources in AAST consumption represents around 21.38%

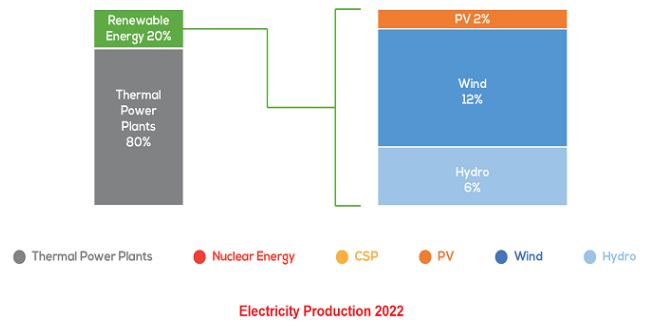


Figure 3 Renewable energy in Egypt (NREA Report 2022)

**Prepared by AASTMT Energy Research Unit**

**2022**