Template for Evidence(s)
UI GreenMetric Questionnaire

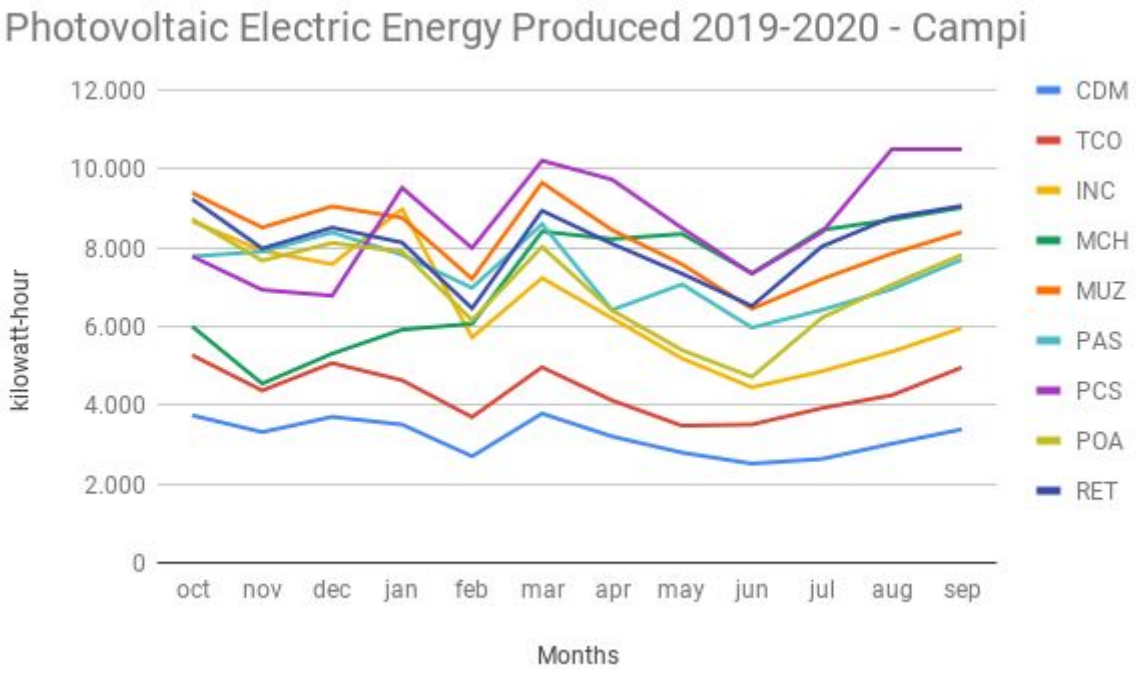
University : IFSULDEMINAS
Country : BRAZIL
Web Address : https://www.ifsuldeminas.edu.br/index.php

[2] Energy and Climate Change (EC)

[2.5] Renewable energy produce inside campus

IFSULDEMINAS Photovoltaic Electric Energy Production (kWh)											
Year	Months	Total	CDM	TCO	INC	MCH	MUZ	PAS	PCS	POA	RET
2019	oct	66.583	3.743	5.270	8.670	6.000	9.390	7.780	7.780	8.720	9.230
	nov	59.152	3.318	4.374	7.920	4.550	8.510	7.900	6.930	7.670	7.980
	dec	62.515	3.705	5.070	7.580	5.310	9.050	8.390	6.780	8.120	8.510
2020	jan	65.173	3.509	4.634	8.980	5.920	8.760	7.820	9.520	7.900	8.130
	feb	52.991	2.704	3.699	5.720	6.068	7.210	6.980	7.990	6.160	6.460
	mar	69.816	3.790	4.966	7.230	8.410	9.650	8.600	10.210	8.020	8.940
	apr	60.871	3.208	4.123	6.210	8.220	8.450	6.420	9.730	6.410	8.100
	may	55.708	2.798	3.480	5.190	8.350	7.580	7.070	8.500	5.400	7.340
	jun	48.834	2.518	3.512	4.455	7.350	6.450	5.970	7.340	4.719	6.520
	jul	56.136	2.636	3.925	4.862	8.450	7.202	6.420	8.390	6.220	8.030
	aug	62.479	3.024	4.255	5.360	8.710	7.850	6.950	10.500	7.060	8.770
	sep	66.807	3.389	4.959	5.960	9.020	8.400	7.700	10.500	7.820	9.060
	Total	**727.064**	**38.342**	**52.267**	**78.137**	**86.358**	**98.502**	**88.000**	**104.170**	**84.219**	**97.070**
	Average	**60.589**	**3.195**	**4.356**	**6.511**	**7.197**	**8.209**	**7.333**	**8.681**	**7.018**	**8.089**

Table 1: Photovoltaic energy production of all units of IFSULDEMINAS in the last 12 months. Source: Fronius System. Available at: https://www.solarweb.com/.



Graphic 1: Photovoltaic energy production of all units of IFSULDEMINAS in the last 12 months.

Figure 1: Campus Inconfidentes solar power plant.

Figure 2: Campus Machado solar power plant.

Figure 3: Campus Muzambinho solar power plant.

Figure 4: Campus Passos solar power plant.

Figure 5: Campus Poços de Caldas solar power plant.

Figure 6: Campus Pouso Alegre solar power plant.

Figure 7: Campus Carmo de Minas solar power plant.

Figure 8: Campus Três Corações solar power plant.

Figure 9: Rectory solar power plant.

Figure 10: Solar Seal, certification awarded to IFSULDEMINAS

Figure 11. Small Hydro Power Plant - PCH

Figure 12. PCH Generators.

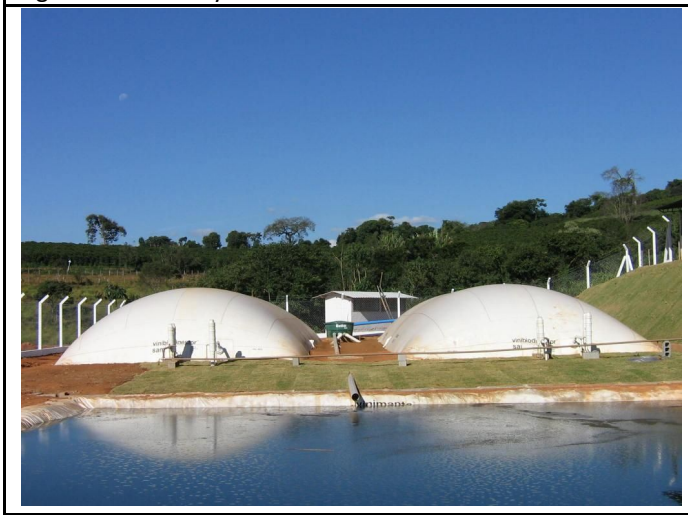


Figure 13. Swine waste treatment unit for biogas production.

Figure 14. Swine waste treatment unit for biogas production.

Figure 15. Inconfidentes Campus Solar water heating system.

Figure 16. Inconfidentes Campus Solar water heating system.

Figure 17.Machado Campus Solar water heating system.

Figure 18. Muzambinho Campus Solar water heating system.

Figure 19. Muzambinho Campus CeCAES Solar water heating

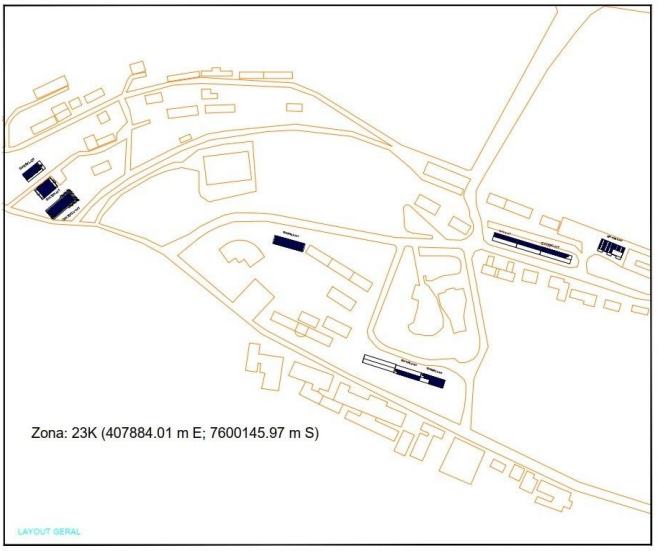


Figure 20. Muzambinho Campus new photovoltaic modules

system.	to be installed in 2020/2021.

Description

IFSULDEMINAS have nine (9) solar photovoltaic power plants who generated **727,064 kWh** in the last 12 months. This result represents an approximate savings of US$ 85,340. Each power plant installed cost US$ 114,405 and is expected to be paid in approximately 8 years. The plants have a useful life of 25 years (Figures 1 to 9).
Muzambinho Campus has a Hydropower / Hydroelectric Power plant who generated **301,350 kWh** in the last 12 months (Figures 11 and 12).
Muzambinho Campus has a Clean Biomass / Biogas plant which generated **57,714 kWh** in the last 12 months (Figures 13 and 14).
Muzambinho (400 m²), Machado (60 m²) and Inconfidentes (70 m²) Campi have solar water heating systems that generated the equivalent of **305,280 kWh** in the last 12 months (Figures 15 to 19).
IFSULDEMINAS will install 77 modules of photovoltaic solar panels in all units, expected to generate more 2,010 MWh annually (Figure 20).
The Solar Seal is a certification awarded to IFSULDEMINAS by the Institute for the Development of Alternative Energies in Latin America - Ideal Institute (Figure 10). Available at: https://portal.ifsuldeminas.edu.br/index.php/institucional-geral/76-acontece-nos-campus/2238-sustentavel-instituto-federal-do-sul-de-minas-recebe-selo-solar.

Source: IFSULDEMINAS.