

Shiv Nadar University Energy Consumption Analysis and Energy Conservation Plan

Shiv Nadar University is committed to judicious energy usage and energy optimization through the use of energy-efficient equipment and practices in its operations. Energy conservation targets are agreed upon with the university management each year and the performance against the agreed targets are tracked throughout the year and performance is reported to the management at periodic reports.

Cross-functional teams across various functions including teaching staff, non-teaching staff, faculty, and students are formed and they are encouraged to identify the opportunities for energy optimization.

Multiple projects, including Zero Cost Improvements (ZCI), are identified and teams are encouraged to execute the same to drive tangible gains.

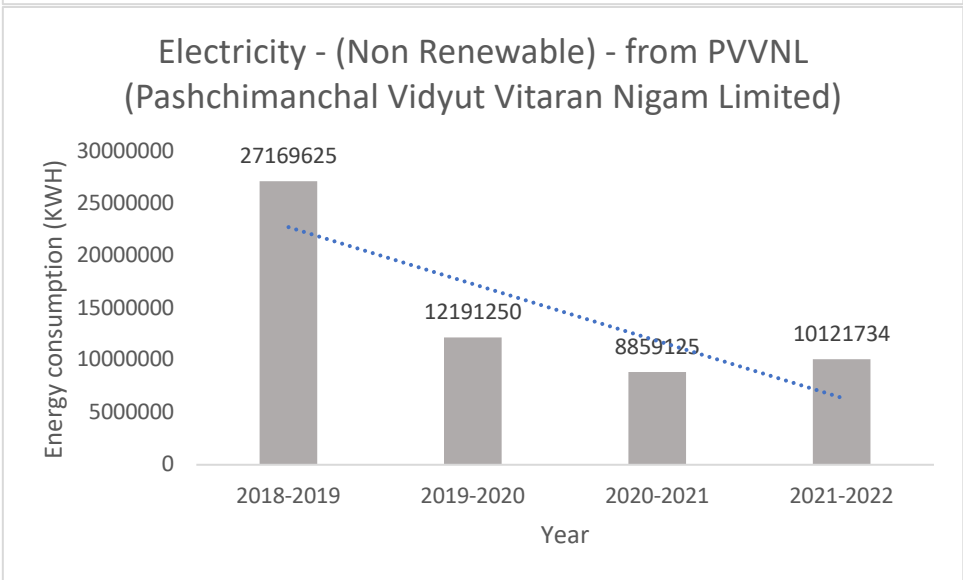
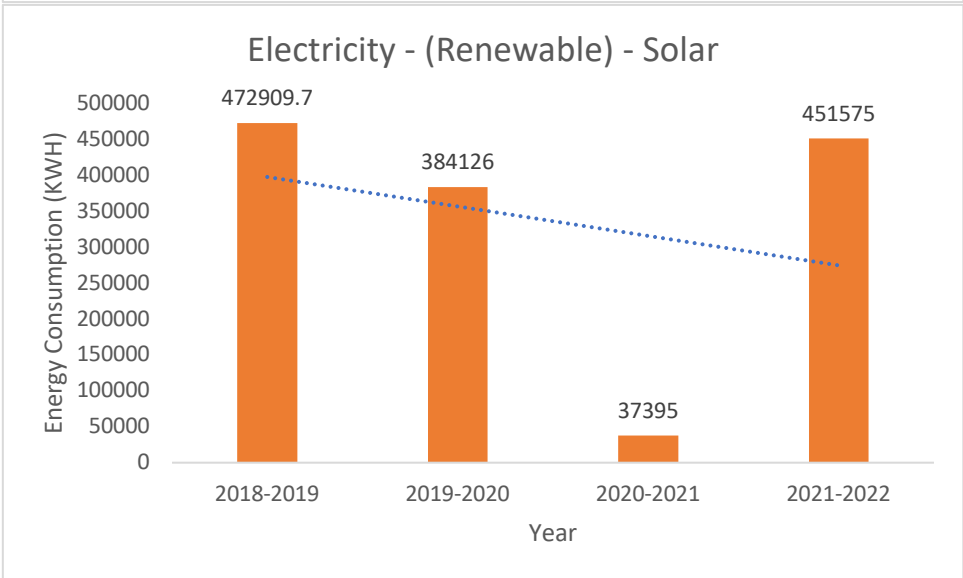
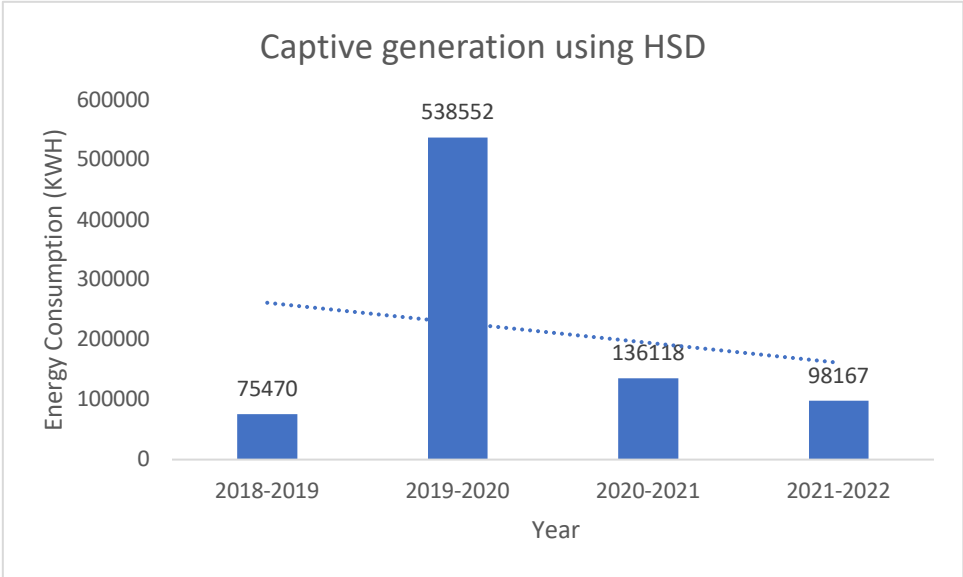
Technological and Process interventions are undertaken including, a transition to low energy-consuming types of equipment across functions to help achieve the agreed targets.

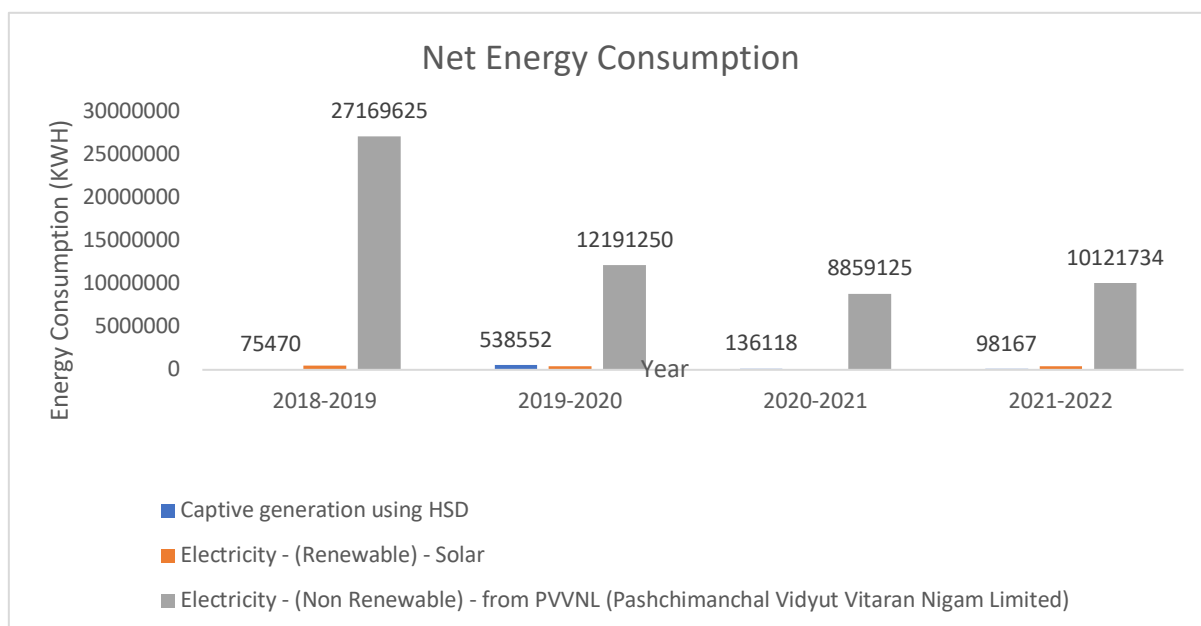
Further, strategic initiatives are also undertaken with the approval and support of the management to transition to “Clean Power” and reduce the dependence on “fossil fuel” to create energy on campus.

Data is available to reflect the transition in the desired direction.

Energy consumption data analysis:

Financial Year	Captive generation using HSD (KWH)	Electricity - (Renewable) – Solar (KWH)	Electricity - (Non Renewable) - from PVVNL (Pashchimanchal Vidyut Vitaran Nigam Limited) (KWH)
2018-2019	75470	472909.7	27169625
2019-2020	538552	384126	12191250
2020-2021	136118	37395	8859125
2021-2022	98167	451575	10121734





Current achievements for increasing energy efficiency

1. The university undergoes energy consumption reviews to identify further opportunities for improvement to conserve energy.
2. Currently we are paying approx. Rs 16 Cr. Per annum as electricity. To reduce the cost, we are taking the following initiatives:
3. 33kV substation installed in Sept 2017. As the power uptime is above 99%, this initiative saves approx. Rs 2.5 Cr per annum from procurement of HSD.
4. Installed Motion sensors in all the toilets in Acad and Hostel.
5. Conversation of conventional CFL/T5 light fixture to LED fixture. The hostel area is almost completed.
6. Battery-operated Urinal sensor is converted into an electrical-operated sensor. Which saves the consumption of Battery.
7. In the hostel, solar water heaters are installed in selective hostels.
8. Timer/ daylight photo sensor is used in external lighting operation.
9. Trial run of BLDC (Brass Less Direct Current) Ceiling fan is ongoing. The wattage of this fan is 30W W.R.T 70Watt of the conventional fan.
10. We installed 3 different make BLDC (Brass Less Direct Current) ceiling fans at DH2 for a performance test.
 - 10.1 Total of 4 fans of similar make are fixed in each row with one row of existing conventional Fan. Single switch is triggered to all 16 fans and each make of fans are separately metered. Last 3 months we tested the performance.
11. The university buildings are IGBC LEED Certified and measures have been taken to:
 - 11.1 Increase energy efficiency
 - 11.2 Install solar power plants
 - 11.3 Ensure appropriate natural lighting and ventilation

Plans for energy efficiency in new buildings and renovations in buildings:

1. Addition of energy-efficient lighting in new buildings
2. Installation of lean occupancy sensors in washrooms is planned.
3. PNG connections for all Residents, Dining Halls, Club, etc. is in progress. Completion by this year end.
4. Solar Power enhancement. Current capacity only 400KW. It can be enhanced to 2000KW. Huge savings on electricity and huge reduction in Carbon Footprint.
5. Review, analysis and refurbishment of Labs for safety of operations and environmental conservation.
6. Carbon Neutral efforts and computation.

Energy saving

We managed to contain the electricity consumption within 5% incremental value, due to increased awareness, Stringent Checks during site rounds, Posters displayed, Save Energy stickers, substitution of lights to LED etc.

FY 2018-19: 1,17,90,724 KWH

FY 2019-20: 1,28,24,525 KWH

In spite of Increase in the

- Sq. feet area ((F Block/B school/DH3)
- Campus housing
- Student Head count Increase
- Chiller operational Increase
- In hostels AC operation has started
- In FY18-19 Chiller was not operational in Night shift but FY 19-20 it is operating 24 hrs basis

