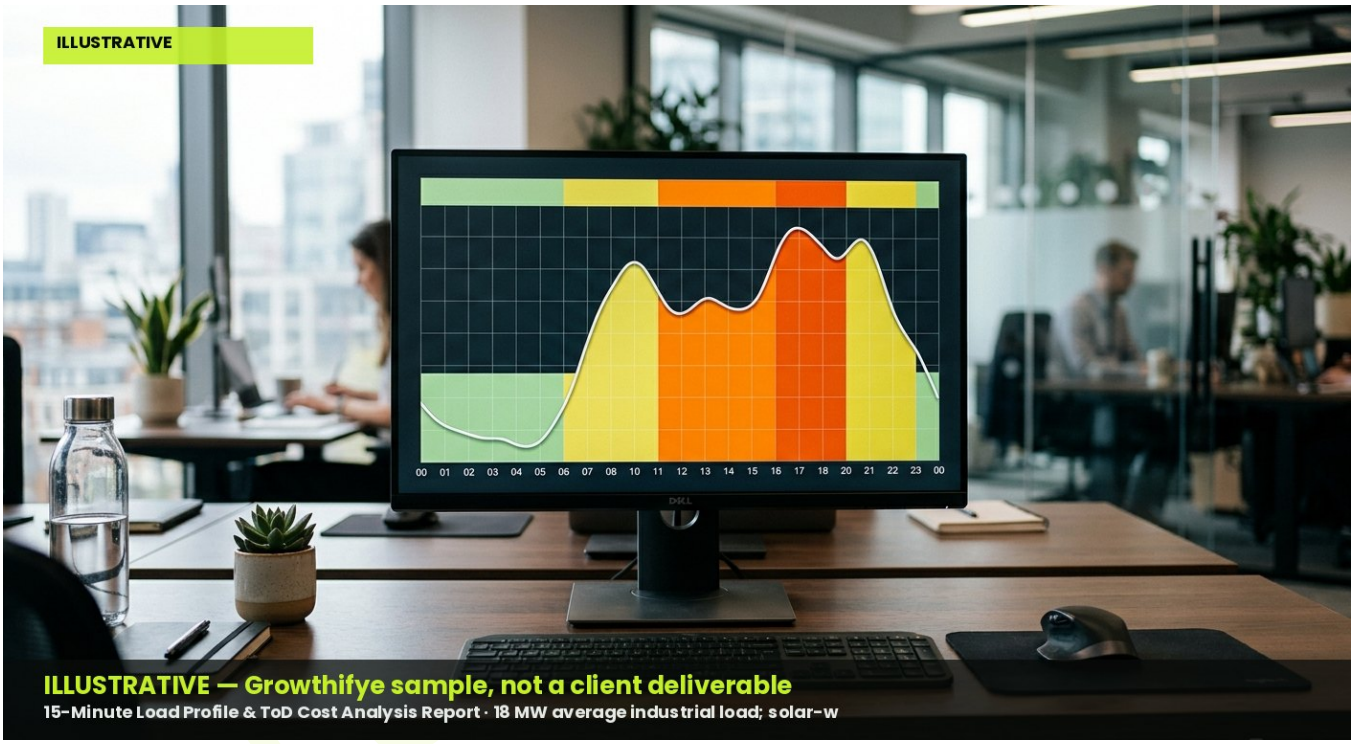
RE & STORAGE ADVISORY · STEP 01 · RESOURCE & LOAD ANALYTICS · REPORT

15-Minute Load Profile & ToD Cost Analysis Report

Statistical breakdown of load behaviour across seasons and tariff slabs, identifying peak-shaving and arbitrage windows with quantified rupee impact.

Worked example (anonymised): Illustrative Study: Industrial Load + Hybrid RE Feasibility · 18 MW average industrial load; solar-wind-storage hybrid under evaluation · Western India. A process manufacturing facility sought to understand whether a hybrid solar-wind-BESS system could offset ToD peak charges and reduce grid dependency, before committing to detailed design.



Illustrative sample image

Sample excerpt · Load Profile Summary (Illustrative)

Parameter	Value
Average Load	18.2 MW
Peak Load (evening ToD)	24.6 MW
Load Factor	0.68
Peak ToD Tariff	Rs 9.80/kWh
Off-peak ToD Tariff	Rs 5.10/kWh
Annual ToD Peak Exposure	Rs 4.3 Cr

Notes

- Based on 15 months of anonymised interval data
- Tariff figures illustrative, mapped to a generic Western India DISCOM ToD order

What happens in this step

1. Collect 12-24 months of 15-minute interval load/generation data from SCADA, smart meters or DISCOM records
2. Clean, validate and profile load data to identify peak/off-peak patterns, seasonality and load factor trends
3. Overlay ToD/ToU tariff structures and demand charges to map real cost-of-energy by time block

4. Assess solar irradiance (satellite + ground pyranometer where available), wind resource (mast data/reanalysis) or small-hydro flow duration as applicable
5. Model P50/P90 generation yield estimates and correlate with load profile for self-consumption/export potential
6. Quantify the addressable opportunity: arbitrage spread, peak-shaving MW, curtailment risk, and contract-structure fit (RTC/FDRE/merchant)
7. Present findings in a data pack with clear go/no-go indicators for the next design stage

Outcomes

- Clear, data-backed view of the actual (not assumed) RE/storage opportunity size
- Quantified ToD arbitrage and peak-shaving potential in rupee terms
- Validated resource yield estimates (P50/P90) ready for bankable sizing
- A defensible go/no-go basis before committing to detailed concept design and CAPEX planning

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