VOL GHG Reduction Action Plan FY 2026-27 to FY 2032-33

The planned actions are estimated to cut VOL's Scope 1 + 2 emissions (location-based) by 8,800–12,300 tCO2e a year by FY 2032-33, 22–31% below the FY 2025-26 baseline of 40,246 tCO2e. The upper end meets the draft science-based target of −29.4%. On the market-based method, the solar plant adds a further ~5,600 tCO2e a year.

1. Document control, baseline and targets

Field	Details
Document no.	VOL/ESG/GHG/RAP/2026/01, Rev 00
Date	05-10-2026
Period	FY 2026-27 to FY 2032-33
Boundary	Operational control: Corporate Office and Units I–VI (7 of 7 sites, 100%)
Basis	GHG Inventory FY 2025-26 (ISO 14064-1, GHG Protocol); Integrated Energy Audit FY 2025-26 (VOL/EnMS/EA/2026/01); Product LCA FY 2025-26 (VOL/EHS/LCA/2026/01)
Prepared by	B. Vasantha Kumar, Sr. Manager-EHS
Reviewed & approved by	K. Sandeep Reddy, Director / Dy. CEO

Baseline, FY 2025-26 (tCO2e)

Scope	Location-based	Market-based
Scope 1	23,864	23,864
Scope 2	16,383	8,830
Scope 1 + 2	40,246	32,693
Scope 3	87,503	87,503
Intensity, Scope 1 + 2	13.4 t per t of product	10.9 t per t of product

Targets

Target	Value	Status
Scope 1 + 2 absolute	−29.4% by FY 2032-33 vs FY 2025-26	Draft, SBTi commitment letter signed; subject to Board approval
Scope 3 absolute	−17.5% by FY 2032-33 vs FY 2025-26	Draft; subject to Board approval
Energy intensity	At least 5% lower each year	Adopted (ISO 50001 objective)

The targets are absolute: growth in production must be met with further cuts. Once the Board approves the targets, they will state whether Scope 2 is measured location-based or market-based. This plan tracks both.

2. Where the emissions come from

Coal-fired steam is 57% of VOL's Scope 1 + 2 emissions, so fuel switching and steam efficiency lead the plan. Electricity is the second lever, and purchased raw materials drive Scope 3.

Source	tCO2e, FY 2025-26	Share	Plan actions
Coal in process-steam boilers	23,126	96.9% of Scope 1; 57.5% of Scope 1 + 2	A1, A2, A3
Grid electricity (location-based)	16,383	40.7% of Scope 1 + 2	A1, A6
Diesel (DG sets, vehicles),	492	2.1% of Scope 1	A4

Source	tCO2e, FY 2025-26	Share	Plan actions
petrol, LPG			
Refrigerants (HFCs)	145	0.6% of Scope 1	A5
Biomass CH4 and N2O	102	0.4% of Scope 1	–
Purchased goods and services (Scope 3 Cat 1)	62,211	71.1% of Scope 3	A7, A8
Capital goods, fuel and energy upstream, transport (Cat 2–4)	23,952	27.4% of Scope 3	A1–A3 (Cat 3), A9

By site, Units I and II produce 64% of total emissions. Units V and VI burn only coal today, so they gain the most from biomass co-firing.

3. Action plan

Nine actions, each with a timeline, owner and estimated reduction, make up the plan. The Scope 1 + 2 estimates come from VOL's FY 2025-26 unit energy audits and GHG inventory. They are annual reductions at full implementation, against the FY 2025-26 baseline.

3.1 Scope 1 and 2: operations

#	Action	Sites	Start	Full by	Owner	Estimated reduction (tCO2e/yr)	Basis of estimate
A1	Energy efficiency: 76 energy conservation measures, including sub-metering, steam-trap and condensate-return programmes, insulation repair, boiler combustion control, chiller and brine optimisation, compressed-air leak	All units	Q4 FY 2026-27	FY 2028-29	Engineering, unit heads	2,630–6,129	Energy audit potential 5,739–9,238, less the biomass co-firing counted in A2

#	Action	Sites	Start	Full by	Owner	Estimated reduction (tCO2e/yr)	Basis of estimate
	control, VFDs and efficient motors						
A2	Biomass co-firing raised to Unit-I's 29.1% share of boiler heat at Units II, IV, V and VI (about 1,669 t coal a year replaced by about 2,100 t briquettes)	Units II, IV, V, VI	FY 2026-27	FY 2027-28	Engineering, Purchase	3,109	Integrated Energy Audit
A3	Biomass to 40% of boiler heat group-wide, plus a feasibility study for full coal phase-out at one unit	All coal-fired units	FY 2028-29	FY 2030-31	Engineering, Purchase	about 2,970	About 10.5 percentage points more of boiler heat moved from coal (≈ 1,570 t coal)
A4	Mobile and standby fuels: electric vehicles for company cars and in-plant movement; fewer DG run-hours	All sites	FY 2026-27	FY 2029-30	Administration, Engineering	about 60	Half the vehicle fuel (182 t), net of charging
A5	Refrigerants: R-22 equipment phase-out; leak checks and a refrigerant log at every site; low-GWP gases for new equipment	All sites	FY 2026-27	FY 2028-29	Engineering	about 70	Half the FY 2025-26 HFC top-ups (145 t); R-22 (117.6 t, reported

#	Action	Sites	Start	Full by	Owner	Estimated reduction (tCO2e/yr)	Basis of estimate
							separately) eliminated
A6	Renewable electricity: supply from the ~5 MW solar plant acquired in 2025; extend wind/solar wheeling beyond Unit-VI; keep buying I-RECs until on-site and contracted supply covers demand	All units	FY 2026-27	FY 2028-29	Director / Dy. CEO, Engineering	about 5,600 (market-based)	About 8.3 GWh a year at a 19% capacity factor (to confirm from actual generation) × 0.675 kg/kWh

3.2 Scope 3: value chain

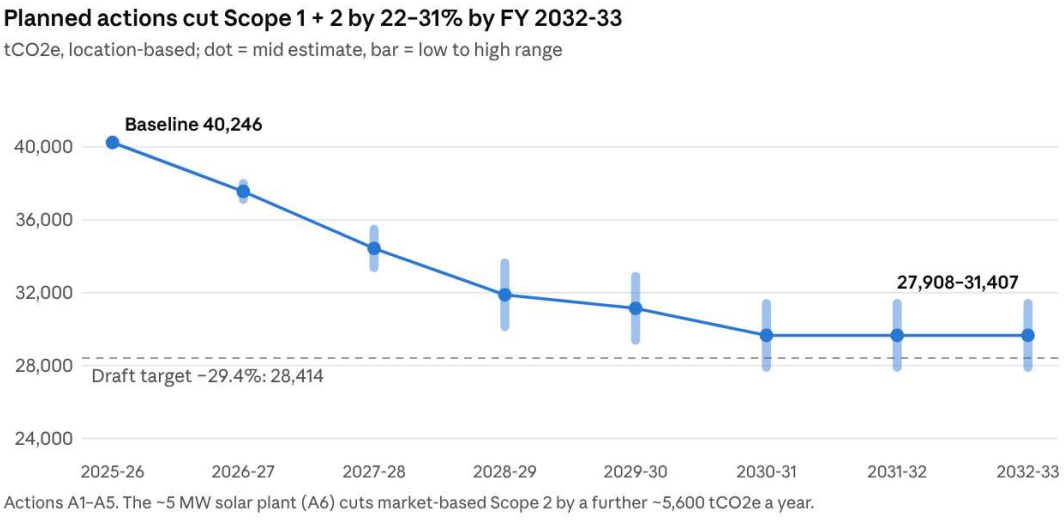
#	Action	Start	Full by	Owner	Expected effect
A7	Supplier engagement: carbon footprint data (PCFs) from the top 5 raw-material and solvent suppliers; carbon criteria in supplier selection under the sustainable procurement procedure	FY 2026-27	FY 2032-33	Purchase	Replaces average factors with supplier data; each 10% cut in Category 1 intensity saves about 6,200 tCO2e a year
A8	Green chemistry: route redesign, higher yields, less	FY 2026-27	FY 2032-33	R&D, Production	Lowers Category 1

#	Action	Start	Full by	Owner	Expected effect
	solvent per kg and more solvent recovery, prioritised by the product LCA hotspots				and Scope 1 together
A9	Logistics: full truck loads, road-to-rail or sea where possible, and less air freight for inbound and outbound goods	FY 2026-27	FY 2029-30	Logistics	Lowers Category 4 (1,799 t) and Category 9 (790 t)

Total, Scope 1 + 2 (location-based), at full implementation: 8,839–12,338 tCO2e a year (A1–A5), 22–31% below baseline. A6 cuts market-based Scope 2 by a further ~5,600 tCO2e a year. Estimates will be replaced with measured savings as each action is completed.

4. Emissions trajectory to FY 2032-33

Most of the reduction comes in the first three years, from efficiency and biomass co-firing. The second biomass step (A3) completes it by FY 2030-31.

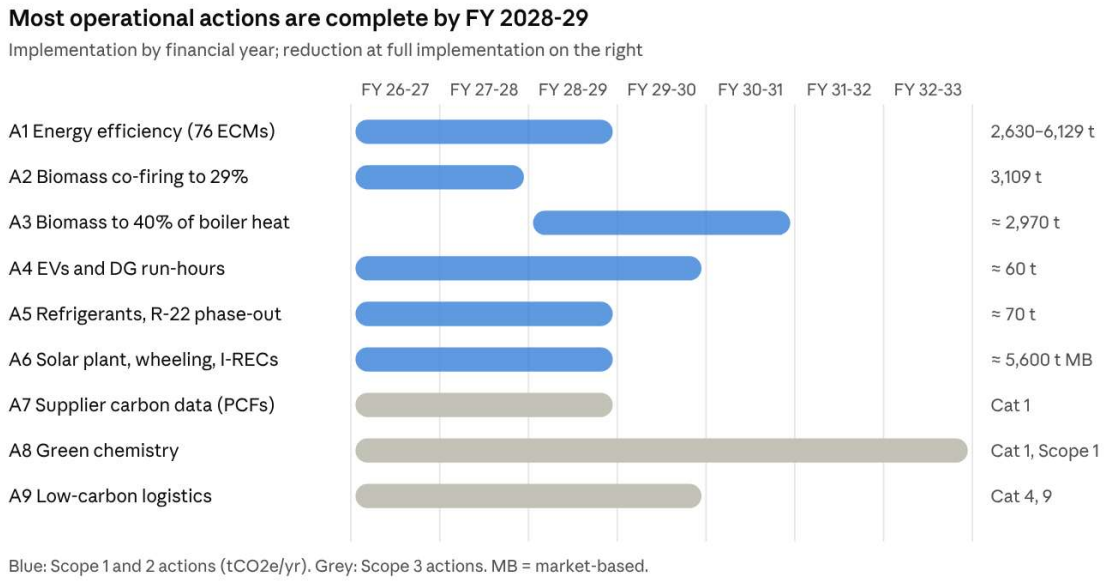


VOL GHG inventory FY 2025-26 baseline; reductions phased as in Section 3

The mid estimate ends 1,243 tCO2e above the draft target. A1 at its high end, or the solar plant counted on a market-based target, closes that gap. The phasing assumes 25%, 60% and 100% of A1 in the first three years, and A2 complete by FY 2027-28.

5. Implementation timeline

All nine actions start in FY 2026-27, except the second biomass step (A3), which follows once co-firing is proven at Units II, IV, V and VI.



Implementation timeline · actions A1–A9, FY 2026-27 to FY 2032-33

Milestones

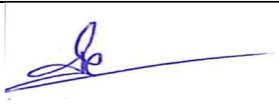
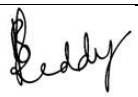
- FY 2026-27: sub-metering at Units I, II and V; boiler efficiency tests; steam-trap and compressed-air programmes at all units; biomass co-firing begins at Units V and VI; solar plant supplies VOL; R-22 phase-out plan; supplier PCF requests sent.
- FY 2027-28: co-firing at 29.1% at Units II, IV, V and VI; 60% of energy conservation measures done; supplier carbon criteria in use.
- FY 2028-29: all energy conservation measures and refrigerant actions complete; biomass expansion (A3) starts.
- FY 2030-31: biomass at 40% of boiler heat; Scope 1 + 2 at 28,000–31,400 tCO2e.
- FY 2032-33: target year for −29.4% Scope 1 + 2 and −17.5% Scope 3.

6. Governance, monitoring, budget and approval

The Director / Dy. CEO owns this plan and reports progress to the Board's Risk Management Committee every year. Each action has an owner, and progress is measured through the annual GHG inventory.

Element	Arrangement
Accountability	Director / Dy. CEO (ESG & Sustainability); action owners as in Section 3; unit heads for site delivery
Monthly	Energy KPIs per unit (specific energy, coal and biomass use, kWh) reviewed under ISO 50001
Quarterly	Action status (not started, in progress, done) and measured savings reported to the ESG committee
Yearly	GHG inventory to ISO 14064-1; reductions measured against the FY 2025-26 baseline; independent verification; progress published in the sustainability report, CDP and EcoVadis
Recalculation	Baseline recalculated if a structural change (such as the Vivin Laboratories merger) or a method change moves emissions by more than 5%
Budget	Capex and opex for each action approved through VOL's capex process. Amounts and approval references to be entered: A1 ____; A2 ____; A3 ____; A4 ____; A5 ____; A6 ____

Approval

Role	Name	Signature	Date
Prepared by	B. Vasantha Kumar, Sr. Manager-EHS		05-10-2026
Reviewed & approved by	K. Sandeep Reddy, Director / Dy. CEO		05-10-2026