



SEACPL

Global Innovation. Unified Execution.

Steam Insight Series | Week 2

The Hidden Steam Loss Triangle

This white paper consolidates insights from SEACPL's Steam Insight Series and highlights the three invisible losses inside boiler systems that your logbook never captures.

YOUR BOILER LOGBOOK LIES.

Hidden inside your system are three losses no meter records.

I found the HIDDEN STEAM LOSS TRIANGLE

During an audit at a pharma plant, we found 9% steam loss – with 5% vent, 3% blowdown, and 1% leaks.

Break the Triangle → Save Fuel, Money & the Environment

Recover · Automate · Audit

Contact SEACPL for complimentary expert advice.

1. Why the Boiler Logbook Lies

A boiler logbook captures pressure, temperature, O₂ levels, and blowdown frequency, but it misses the three hidden losses that occur continuously:

- Flash Steam Vent Loss
- Blowdown Heat Loss
- Steam Leak Loss

Together, these can quietly drain 5–10% of your total fuel input.



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2. Real-Plant Findings

During an audit at a regulated pharma plant, the system appeared efficient on paper. Yet, fuel consumption was 7% higher than design. After a detailed study, the hidden Steam Loss Triangle was uncovered: 5% vent, 3% blowdown, 1% leaks.

3. The Steam Loss Triangle Explained

1 Flash Steam Vent Loss

Every vent emitting vapour represents lost latent heat. Most plants underestimate how much energy escapes from flash tanks and open condensate systems.

2 Boiler Blowdown Loss

High TDS blowdown drains fuel-rich hot water directly from the boiler shell. Manual blowdown often leads to over-draining.

3 Steam Leakage

Even a tiny continuous hiss from valves and flanges adds up to massive yearly loss.

4. Breaking the Triangle

SEACPL's recommended strategy:

- ✓ Recover flash steam into feedwater
- ✓ Automate blowdown with TDS controls and heat recovery
- ✓ Run quarterly steam-leak audits
- ✓ Improve condensate return and trapping

5. Conclusion

The Steam Loss Triangle is invisible but not undefeatable. Plants that address these hidden losses typically save 5–10% fuel while reducing emissions.

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[SEACPL × Cheema Boilers Limited — Engineering Partnerships that Power Industry.](#)



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