Carbon Neutrality in Petrochemical: The Missing Piece is Full-Chain Collaboration

Each segment accounts separately, yet data cannot flow across links

Upstream: Oil & Gas / Power
Power factors covered; weak data on crude oil & gas process

→

Mid-stream: Refining / Process
Group standards have been implemented; LCI still relies on overseas DBs

→

Downstream: Materials
SMEs unaccounted; inconsistent boundaries

→

Export: CBAM 2027
No measured data = EU default values tax



Existing Foundations

Methodology	National & group standards
Tools	Mature LCA software (GaBi)
Database	576 factors in National DB v2

RIPP has released the International Petrochemical Carbon footprint Database (IPCD)!

Key Gaps

- Measured data from SMEs hard to collect
- Upstream/downstream boundaries not unified
- No unified downgrade rules for missing data
- Cross-enterprise data not mutually recognized

Need not a single DB, but a chain: association templates → leading enterprises guide SMEs → national DB calibration → EU verification mutual recognition.

VISPRO+IPCD: From Look-up Tables to Unit-level Measured Modelling

VISPRO：Unit-level Measured Modelling

- 138 typical unit models; material / energy / carbon flows
- On-site measured data replaces look-up factors; linked with IPCD (International Petrochemical Carbon footprint Database)
- Sep 2026 TÜV Rheinland certified




Validation and Verification Statement
审定与核查声明


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Implications for Accounting Results

- Reflects real process, not industry average
- Retrofit / CCUS reductions quantifiable
- Third-party verified; avoids EU default over-estimation

Implications for Green Performance

- Green performance visible and monetizable
- Shift from ex-post accounting to ex-ante optimization
- Measured data feeds IPCD; positive feedback loop

Three Questions, Three Answers

Q1

How do guidelines, databases, and tools connect?

Guidelines set rules （methodology）
↓
IPCD provides local factors （DB）
↓
VISPRO encapsulates into models
（Calculation tool）

Q2

What tools do enterprises need most?

Not generic carbon software, but internationally-benchmarked tools like VISPRO: local factors + unit-level modelling + TÜV verification.

Q3

What is the next priority internationally?

Mutual recognition.
TfS methodology mutual recognition initiative launching soon — Chinese results accepted directly in Europe, no duplicate accounting.