

AI-assisted renewable energy origination

Making AI-generated renewable energy offers commercially trustworthy.

An AI proposal can read perfectly and still be commercially wrong. In origination, that is not a typo — it is a mispriced position.

Blackdown Energy worked with a European energy company involved in power trading and renewable origination. Together, we developed an internal tool that helps commercial teams prepare proposals for renewable assets, PPAs, and direct-marketing opportunities, using large language models, retrieval, and internal data.

The hard part was not getting the AI to write a polished document. It was making sure the economics underneath could be trusted.

In origination, an offer is more than a document. It is a priced position. Mistakes in generation profiles, forward curves, balancing costs, imbalance exposure, regulatory treatment, or PPA valuation feed straight through to the commercial result.

ROLE

AI consulting

DOMAIN

Renewable assets · PPAs · direct-marketing opportunities

PATTERN

Retrieval-grounded generation reconciled with analyst pricing

CLIENT

A European power-trading and renewable-origination business

SCOPE

Pricing accuracy, evaluation, governance and human review

VALIDATION

Pilot set of 24 historical origination opportunities

In short

Blackdown Energy helped a European power-trading and renewable-origination business move a promising internal AI tool towards a commercial decision-support workflow its desk could trust.

We focused on the layer beneath the interface: pricing accuracy, evaluation, governance, and human review. The goal was not simply to make the AI write a better proposal, but to ensure every proposal could be reconciled with the pricing logic analysts already use.

Against a pilot set of 24 historical deals, 78% of AI-generated proposals reconciled to analyst pricing within $\pm 3\%$ with no intervention; the system flagged 91% of the proposals needing scrutiny before they reached an originator, and first-draft proposal time fell by 38%.

The challenge

Fluency is not correctness

Most LLM tools work on the visible layer: drafting, summarising, searching, and formatting.

That was not the real risk here.

The risk lived in the commercial logic behind the proposal: generation profiles, PPA pricing, direct-marketing fees, forward-curve interpretation, balancing and imbalance exposure, counterparty profiling, and regulatory constraints.

The dangerous failure mode is a proposal that sounds fluent, is well-cited, and is quietly wrong. It reads as authoritative while carrying assumptions an experienced originator would reject. Because nothing on the page looks broken, the error goes unnoticed.

A mispriced offer can leave value on the table, lose deals that could have been won, or book risk nobody intended at the point of submission.

DIAGRAM

The key risk in AI-generated energy offers

Our approach

Blackdown Energy brought quantitative, technical, and energy-domain expertise to the project, rather than treating it as a generic AI-agent build.

We worked on the decision layer beneath the interface: how the system handled pricing, how its assumptions could be tested, and how the business could trust the result.

This combined AI engineering — orchestration, retrieval, grounding, citations, evaluation — origination domain knowledge — asset type, route-to-market, balancing exposure, contractual shape — and the quantitative pricing discipline to keep the numbers commercially honest.

Four principles shaped the work.

1 Start from the analyst workflow, not the prototype

The real business logic is often found in spreadsheets, pricing calculators, market-data workflows, and analyst judgement. These reflect years of experience more faithfully than any written specification.

We started there to answer one question:

What does correct mean here?

The benchmark was not a better-looking AI draft. It was the pricing logic the business already trusts.

2 Keep drafting separate from pricing

LLMs are excellent at creating fluent documents. Pricing is a different problem.

It needs controlled assumptions, consistent numbers, traceable calculations, and domain review. The system can help draft, but it should never become the sole source of a number.

Every figure it generates or explains must trace back to approved data, be checked against existing tools, and be reconciled with past deals.

3 Build a real evaluation baseline

Output that looks good is not the same as an offer that is commercially reliable.

We tested the system against historical, previously priced opportunities — checking whether it used the right inputs, applied assumptions consistently, produced explainable pricing deltas, separated evidence from inference, supported its regulatory claims, and landed where an experienced originator would expect.

That makes evaluation a commercial control rather than a surface-level review.

4 Treat governance and regulatory grounding as controls, not features

Origination workflows touch sensitive data: counterparties, assets, deal context, and commercial assumptions.

When external research or third-party tools are involved, the design must clearly state what is shared, where it is processed, and whether it meets information security, privacy, and procurement standards.

A model that misstates a regulatory rule in a live offer can misrepresent the commercial basis of the deal. In this context, retrieval and citations are not presentation features. They are controls.

DIAGRAM

AI-assisted renewable origination workflow

Results

We validated the system against a pilot set of 24 historical origination opportunities, reconciling each AI-generated proposal against the pricing logic analysts already use.

78%

reconciled to within $\pm 3\%$ of the analyst-priced value with no intervention

91%

of proposals needing further scrutiny correctly flagged for analyst review

–38%

first-draft proposal time, from 16 to roughly 10 hours per proposal

Read together, that is defence in depth: the system prices most proposals correctly on its own, routes the ones that need a closer look to the right analyst, and treats originator review as the final backstop — never fluency as a proxy for correctness.

Alongside the evaluation baseline, we defined the control points needed for production: traceable assumptions, approved data sources, regulatory grounding, human review of commercial logic, and a data-governance review of the third-party research tooling.

This gave the business a practical basis for deciding when an AI-generated proposal is ready for originator review and when it needs further analyst input.

The takeaway

The most valuable part of an AI origination tool is not the polished proposal. It is the trusted commercial judgement behind it.

The question is not whether the AI can write an offer. It is whether the system can help produce one an experienced originator would stake their name on.

That takes pricing discipline, evaluation, traceable assumptions, approved data, and human review — not just LLM orchestration.

Capabilities demonstrated

AI-assisted origination workflow design

Retrieval-grounded proposal generation

PPA and direct-marketing pricing review

Historical-deal benchmarking

Regulatory-risk identification

LLM application evaluation

Renewable energy commercial modelling

Quantitative validation of AI-generated outputs

Data-governance and third-party tooling review

Traceability and citation design for business-facing AI outputs

Working on something similar?

If your trading or origination team is moving AI from prototype towards the commercial desk — and the blocker is trusting the economics, not the drafting — that is the work Blackdown Energy does.

Get in touch / book a call →

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This case study covers work delivered in an AI consulting role for an anonymised European energy firm. Commercially sensitive details, internal systems, pricing methods, and confidential information have been omitted or generalised.