ENERGY · PAPER 06

Fracking Research and Private Development

A lawful route to private shale appraisal and development where the evidence supports it.

27 min read · October 2026

Households and industry remain exposed to gas supply and price shocks. Britain should establish whether another domestic source can be developed at acceptable cost and risk, retaining useful engineering skills and giving host communities a funded stake in compliant projects.

We will reopen a lawful route to private shale exploration, hydraulic fracturing and commercial development. A time-limited university and industry programme, supported by open engineering prizes, will test recovery and solve defined barriers under British conditions.

Publish the production-consent criteria before appraisal begins so that a successful test can progress to a predictable development decision.

The problems and the proposed remedies

PROBLEM	PROPOSED REMEDY
A moratorium prevents practical appraisal	Replace the blanket restriction with a statutory route for compliant projects.
Resource estimates are mistaken for usable supply	Test recovery, repeatable well performance and full costs; commission engineering solutions where a specific barrier can be overcome.
Success in a pilot may still leave development blocked	Publish the route and evidence required for production before appraisal begins.
Seismic controls can be politically arbitrary or technically inadequate	Use independently justified risk targets and enforceable operating rules.
National benefits and local burdens fall on different people	Fund host benefits, direct loss compensation and independent monitoring.
Public research can turn into a private rescue	Cap public commitments and leave commercial losses and closure with operators.

Implementation begins on taking office, with a first term through year five. England is the initial operating jurisdiction. Other jurisdictions require their own lawful route. Fracking remains outside the generation mutual; foreign investment is welcome subject to ordinary licensing and security controls. The other essays provide the electricity market, generation, North Sea and infrastructure framework.

1 The current position and the economic case

Separate the policy prohibition from the underlying evidence

In the parliamentary debate of 15 September 2026, the Government maintained its effective moratorium on shale gas fracturing and its intention to stop new onshore licences in England. It distinguished lower-volume stimulation in conventional operations from shale fracturing. The announced Energy Independence Bill forms part of that legislative direction; an announcement is not proof of enacted provisions. Implementation must address the legislation and licences actually inherited. [1–2]

The North Sea Transition Authority (NSTA) regulates England's onshore petroleum licensing. A petroleum licence confers resource rights, not every permission needed to operate. The Environment Agency (EA), Health and Safety Executive (HSE), planning authorities and ministers have distinct functions. Wales has devolved licensing powers and a policy against new petroleum licensing and fracturing consents. Scotland does not support unconventional oil and gas development. An English reform cannot silently displace those arrangements. [3–5]

The strategic case is an option on domestic supply

Additional production could reduce imported volumes, support skilled work and create another source of gas for industry, heating and generation. Its value depends on the quantity delivered, timing, network access and performance under stress. Imported gas remains an alternative, so comparisons must include its delivered cost and security characteristics. Domestic origin alone does not establish lower emissions or lower cost.

The British Geological Survey's 2013 Bowland study estimated gas in place, expressly distinguishing it from recoverable reserves. It did not establish an economic recovery factor. A large underground resource is insufficient evidence for a production forecast, a tax-receipt forecast or a promise of cheap power. [6]

Test prices and resilience separately

A producer can sell domestically without selling at production cost. More connected UK supply could nevertheless affect marginal imports, scarcity premiums or regional prices if its volume is material. Model those effects; do not assume either a US price transformation or no possible price effect. A cheaper regional gas market would reach electricity users through generation and procurement arrangements, rather than through the act of licensing a well.

Keep unproven shale outside the baseline adequacy plan. It enters supply scenarios with explicit probabilities and becomes dependable supply only when delivery is demonstrated. North Sea development, replacement gas generation, storage and imports must remain financeable while appraisal proceeds.

2 Research investment and the route to production

Run shared research and private appraisal in parallel

Commission a time-limited programme through existing geological and research institutions, explicitly bringing universities, private operators, oilfield service companies and engineering firms together. Its mission is to establish whether viable recovery can be achieved under British geological and operating conditions, and to develop solutions to identifiable barriers. Shared research covers fault characterisation, comparative well performance, monitoring and environmental baselines; engineering work must progress towards laboratory validation and justified field demonstration.

Select university and industry consortia competitively, allowing several approaches and operators rather than giving one venture control over the national programme. A research joint venture is available where it secures better results than grants or commissioned work. Define ownership, contributions, intellectual property and exit before funding. Operators supply meaningful capital, expertise and lawful test access. Public money buys specified learning and shared outputs; the funding terms exclude open-ended overruns, guaranteed returns and an obligation to finance a production industry.

Private operators may seek appraisal and development permission alongside the programme. They do not have to await a national research conclusion if they can establish the required evidence for their project. Publicly supported demonstration sites are useful where they resolve shared uncertainty; they are not an exclusive gateway controlled by one favoured operator.

Choose tests that establish repeatability

Select sites using existing well records, seismic surveys, hydrogeology, land access and connection prospects. A first well should be followed, where justified, by tests sufficient to distinguish a repeatable prospect from an exceptional result. Publish why each test is needed and the maximum public contribution. A site may be rejected without treating that result as a verdict on every British basin.

Require operators to measure sustained flow, pressure behaviour, recovery, decline and the cost of maintaining output. Appraise the drilling and stimulation programme needed for a whole field, including replacement wells, unsuccessful wells, water treatment, gas processing, connections, finance, community payments and closure. An initial flow rate or a subsidised test cost cannot establish commercial scale.

Set the production decision before testing starts

Publish the safety and environmental evidence, financial capacity and development plan needed for production consent. Passing those tests should trigger a decision under the statutory presumption of approval; additional wells within a genuinely assessed envelope should use the repeat-project route. Changed geology, cumulative impacts or an expanded envelope require targeted further examination.

Publish safety-critical information promptly and research-funded datasets after agreed quality assurance. Preserve invention rights, with publication duties, research access and bounded confidentiality periods agreed before funding. Privately financed technical data may receive a justified embargo, followed by required disclosure. Public co-funding must not create a permanently proprietary national evidence base. Failed and stopped tests remain available to evaluators; publication is not confined to successful results.

3 Engineering challenges for British shale

Define the bottlenecks and the evidence needed

The programme should optimise sustained saleable recovery, full cost and controllable risk together. Some problems are common to shale production internationally; their importance and feasible solutions must be established for the specific British formation. Engineering cannot manufacture a recoverable resource or make every faulted site usable.

Heriot-Watt research on the Craven Basin identifies faults and steep bedding as constraints on long horizontal wells and examines shorter stacked wells as an alternative, with possible interference between them. This is a site-informed research result, not proof that stacked wells will produce a commercial field. British Geological Survey and University of Bristol work has tested injection-linked seismic forecasting on Preston New Road data; wider predictive reliability still requires evaluation. [24–25]

ENGINEERING PROBLEM	REQUIRED DEMONSTRATION
Fault and stress characterisation	Better detection and uncertainty estimates on unseen data, followed by validation against independent observations.
Well layout in faulted formations	Compare landing zones, shorter or stacked wells and spacing; test recovery, drilling cost and interference.
Fracture growth and containment	Validate models against measurements; show controlled growth and avoid material fault activation and unwanted well interaction.
Stimulation within the risk envelope	Test pressure, rate, volume and sequencing, including delayed seismicity, while measuring sustained recovery.
Durable gas flow	Test fluids and proppants, the particles holding fractures open, in representative cores under pressure; measure conductivity and decline.
Water and waste economics	Demonstrate water reuse and treatment, compliant disposal and lower total cost under realistic flowback conditions.

Each work package must specify its baseline, numerical target, validation method, cost and stopping rule before award. Laboratory and simulation results earn progression to the next test; they do not establish commercial reserves. Integrated field economics must include unsuccessful and replacement wells, interruption, monitoring, methane control, community payments and closure.

4 Open challenge prizes for engineering solutions

Widen the search beyond established suppliers

Add open challenge prizes to the research programme. They reward demonstrated outcomes and allow independent engineers, start-ups and teams from software, instrumentation, materials and water treatment to compete without first winning a university or operator procurement contract. International expertise may participate under published terms supporting British deployment and access to the resulting knowledge.

Start with three to five measurable challenges, prioritising fault detection, seismic forecasting, lower-cost reliable monitoring, fracture conductivity or water treatment after the initial bottleneck assessment. Avoid a single prize for making British fracking commercially viable: geology, permissions, gas prices and finance would confound attribution and repeatability.

Fund access as well as the final reward

Provide licensed datasets, representative samples, benchmark methods and affordable access to testing. Use low-burden entry, milestone awards for validated progress, laboratory vouchers for promising prototypes and larger rewards for independently verified performance. Field trials run through qualified operators with the required permissions. A winner-only prize after an expensive well test would exclude many of the outside teams the policy is intended to attract.

The United States provides related precedents. Its September 2026 Geologic Enhanced Mapping System prize offers $300,000 for fault-mapping algorithms. Its earlier three-phase Geothermal Geophone Prize combined cash awards with expert and laboratory vouchers. These demonstrate relevant competition structures; they do not establish that geothermal technology will solve British shale economics. [26–27]

Make verification and deployment part of the offer

Publish performance thresholds, independent judging, conflict rules, appeals and payment terms before entry; reserve the award funding when the competition launches. Use unseen test data and repeatable laboratory or field measurements. Evaluate missed events, false alarms and forecast calibration as well as headline accuracy. A short trial without a damaging earthquake cannot establish general safety. Cost improvements must not be obtained by weakening another required standard.

Entrants normally retain invention rights. Agree research access, disclosure and commercial licensing terms upfront, without compulsory assignment or an undefined future obligation. Publish independent validation and provide a route to further operator trials and commercial adoption. Incumbents may advise and host tests but cannot control admission, judging or access to validation facilities. Prize payments, grants and commercial contracts must not pay twice for the same deliverable.

5 Funding procurement and domestic capability

Authorise a bounded first programme

Within six months of taking office, publish a costed first procurement covering a shared data and testing platform, at least three engineering work packages and the first open competitions. Select up to two initial field demonstration sites where they answer distinct shared questions; further sites require a published evidence case. This defines the first programme without promising a production fleet before appraisal.

Use an indicative public ceiling of £30 million in prices at the start of the programme over the first term: £20 million for competitively commissioned research and co-funded demonstrations, £5 million for shared testing access and £5 million for challenge awards. These are proposed spending limits, not a cost estimate for establishing an industry. Validate the allocations against priced bids and a published business case before appropriation and contracting. Record the final voted ceiling and expiry; no automatic enlargement follows a cost overrun.

For operator-specific demonstrations, test a candidate minimum 50% additional private cash contribution to eligible project costs; it is a provisional parameter, not a settled tender condition. Publish the final ratio and cost boundary before procurement, excluding double-counted grants and ordinary tax deductions. Value other contributions separately. Shared data and open testing may be fully publicly funded where justified. Commercial development, compliance, host payments and closure security remain operator costs outside the research ceiling.

Release money against evidence

Stage awards around an approved data and baseline plan, reproducible laboratory or modelling results, an independently justified field test and a published repeatability and full-cost assessment. Stop or redesign a work package when a target fails or the evidence no longer justifies the next tranche. Independent evaluation and testing administration must be funded within the authorised programme, separately from the advertised prize purse.

Award the full programme through existing research machinery, with the energy minister accountable for delivery and an independent panel for technical evaluation. Bidders must disclose related-party interests and identify which outputs become shared. Successful private development applications continue on their own evidence; neither a consortium nor the research panel acquires a veto over compliant competitors. Before relevant awards, apply the market paper's transaction schedule to research contracts, grants, prizes and joint ventures.

Retain engineering skills and create routes into industry

Require proportionate training and knowledge-transfer plans in funded partnerships: university placements, operator secondments, technical apprenticeships and access for smaller suppliers. Draw on North Sea expertise while measuring displacement of scarce staff from other energy projects. Report sustained UK employment, usable skills, supplier capability and deployment of resulting technology rather than promising a gross jobs figure. Validated monitoring, drilling and water technologies may find other markets, but those benefits need evidence and do not justify indefinite support for unsuccessful extraction.

University and industry cooperation has precedents. UK Research and Innovation funded an £8 million unconventional-hydrocarbons programme in 2018–2022 focused on scientific evidence and impacts. The US Hydraulic Fracturing Test Site 2 brings industry and research institutions into field work. Our addition is an explicit, time-limited engineering mission linked to repeatable recovery and costs, with an open route for outside solvers. [22–23]

6 A consent route that can deliver an industry

Make permission predictable across the whole project

Replace the English moratorium and conflicting licensing restrictions with legislation permitting exploration, appraisal and development under published criteria. Resource rights, surface access, planning consent, drilling, stimulation, environmental permits and gas connection must form a mapped sequence. A ministerial invitation to invest is inadequate if another authority can still prohibit the proposed activity on an unresolved policy ground.

Apply the UK Build Reform framework to designated appraisal programmes and qualifying production clusters. A strategic assessment can settle the national need, a defined development area and common impacts. The integrated consent should incorporate the scheduled permissions within that scope. A single application record and named delivery owner should replace repeated submission of the same evidence.

Use the agreed burden shift and decision deadlines

Once an operator demonstrates conformity with an approved standard, the authority must establish a material uncovered risk, new evidence undermining approval or a defect in application before requiring more. It must show the incremental benefit, cost including delay, and feasible alternatives. A requirement failing the statutory necessity and proportionality test cannot be imposed. A binding technical merits appeal can remove or substitute conditions.

Use the programme's proposed standards: 30 calendar days for validation and ordinary consultee responses, six months for qualifying repeat-project consent and twelve months for other designated projects. Overdue consent decisions transfer to the national decision-maker for determination within 60 calendar days. Essential missing evidence can justify a limited, independently certified extension. These clocks concern decisions, not a fictional promise that field measurements take no time.

The Secretary of State for Infrastructure and Delivery resolves designated consent disputes within statutory powers. The energy minister owns the licensing policy and programme. Technical authorities retain evidence-based safety enforcement, including immediate stop powers. The appeal route cannot order operation where an intolerable technical risk remains unresolved.

Before opening the licensing offer, publish a regulator capacity plan covering staffing, specialist recruitment, laboratories, monitoring review and technical appeals. Fund start-up capacity explicitly, then use transparent cost-recovery fees for operator-specific work. Ring-fence assessment capacity so decisions do not wait indefinitely for an unfunded specialist. Performance reporting must distinguish an incomplete application from regulator delay, without financial incentives to waive necessary scrutiny.

Coordinate baselines land and connections early

Current EA guidance requires twelve months of groundwater methane monitoring before relevant fracturing. Schedule monitoring in parallel with design and consent work and reuse valid existing data; do not restart a baseline solely because an institutional name changes. Any change to a statutory measurement requirement needs an express amendment and a justified substitute. [7]

Publish the treatment of subsurface rights separately from surface acquisition, access and compensation. Secure water supply, wastewater capacity, gas specification, processing and connection terms before assuming saleable output. A licence does not supply those facilities. Larger production clusters need cumulative transport, water and network assessments so a successful first pad is not later stranded by foreseeable shared constraints.

7 Seismic rules based on consequences and control

Replace an arbitrary argument with a published risk standard

The historic traffic-light regime required a pause at local magnitude 0.5. Preston New Road subsequently experienced a magnitude 2.9 event in August 2019. The British Geological Survey's 2022 review identified continuing forecasting limitations and research on risk-based control thresholds. It does not establish that monitoring makes every site manageable. [8–9]

Parliament should establish the framework for acceptable risk and require ministers to publish consequence tolerances through an affirmative statutory instrument, subject to parliamentary approval. Distinguish disturbance, property damage and critical-infrastructure risk, specifying both severity and probability measures. Ministers must explain the supply benefit sought, the risk accepted and the costs of stricter alternatives. Independent technical authorities then translate those democratically accountable tolerances into operating standards; they neither choose the national investment target nor quietly determine the political risk bargain.

Publish the first tolerances and technical standards within six months of the relevant Energy Objectives Repeal and Replacement Act provisions commencing, with funded capacity for the review. Use existing evidence and expose material uncertainty. If evidence cannot support a workable revision by that deadline, publish the unresolved question and a bounded decision timetable; no automatic relaxation follows delay. Apply consistent consequence objectives across induced-seismicity activities, with different operating triggers where geology, exposure or controllability requires them.

Magnitude alone is an inadequate universal decision rule. Depth, distance, local amplification, building vulnerability and the possibility of further events after injection stops affect the consequences. Operational triggers may remain magnitude-based; justify their values against the consequence targets. A threshold from another country or industry cannot be adopted solely because it would make British wells easier to complete. [20]

Approve a site specific operating envelope

Before stimulation, require adequate fault and stress characterisation, a baseline network capable of locating relevant events, an independently examined hazard model and explicit treatment of uncertainty. Specify injection pressure and rate limits, volumes, sequencing and exclusions near material faults. Show how the monitoring and controls meet the national risk standard; the absence of a mapped fault is not proof that none exists.

Publish the amber and red triggers, pressure-reduction response, monitoring period after stopping and the evidence required to restart. Account conservatively for delayed events and possible jumps in magnitude; stopping injection is not proof that further seismicity has ended. Restart should follow a defined technical decision and timetable once the required evidence exists, not an open-ended political negotiation. A material unexpected event may require a revised envelope or permanent cessation at that site. [21]

Keep rule making independent of the investment target

Technical standards should be commissioned and reviewed independently of the team promoting the programme. Regulators must publish their reasons for a threshold, including the risk accepted and the cost of stricter alternatives. Operators cannot select the standard that makes their investment profitable; authorities cannot impose a prohibitive requirement without establishing its necessity.

The 0.5 threshold remains the inherited control unless lawfully revised on evidence. A review is neither a commitment to raise it nor a veto on revision. If a materially different threshold meets the approved risk objectives, permit it with monitoring and enforcement. If an economically viable operating envelope cannot satisfy those objectives, the project fails the test and private capital bears the result.

8 Water methane closure and host communities

Control the mechanisms that can cause harm

Retain life-cycle well integrity, independent examination, groundwater protection and site containment. HSE already requires an independent well examination scheme; our change strengthens assurance and access to evidence rather than claiming to invent it. Operators fund examination, while appointment and reporting arrangements must prevent immediate operational management from suppressing adverse findings. [10]

Require a credible water balance covering supply during drought, reuse, flowback storage, treatment and lawful disposal. Assess chemicals and recovered fluids against the actual pathways to water receptors. Surface spills, well failure and waste handling need their own controls. A general claim that fractures occur deep underground is insufficient protection against those different mechanisms. Existing EA permit guidance provides the baseline. [11]

Measure methane before, during and after operations, with independently checked leak detection and repair, auditable quantities and enforcement triggers. Allow only specifically authorised testing or emergency flaring within a bounded plan. Compare measured life-cycle emissions with the imports actually displaced, including transport and methane uncertainty. Domestic gas does not receive an environmental exemption by being domestic.

Fund the local bargain without purchasing immunity

Require statutory operator-funded host benefits. Proposed rates for validation are £100,000 per well site before first stimulation, in 2013 prices uprated by the Consumer Prices Index, plus 1% of attributable gross production revenue paid quarterly. The historical industry offer used £100,000 per exploratory well site and 1% of production revenues. Mandatory payment is the policy; these amounts remain provisional until tested in field economics and published in the final schedule before consent. [28]

Use auditable arm's-length sales or equivalent related-party reference values without cost, loss or tax deductions. The proposed equal split between affected households and a community trust is also provisional. Publish final rates, distribution, exposure boundaries and cumulative-site eligibility before

consent; operators cannot select recipients. This shale schedule implements the common host tariff, with equivalent-payment credits to prevent duplicate charges for the same exposure. Require independent administration, audit and debt recovery; direct damage compensation remains separate.

Benefits supplement compensation for attributable damage and specific losses. Establish baseline property surveys where exposure warrants them, an accessible claims process, independent causation assessment and an appeal. Fund noise, traffic and air monitoring with resident access to results. Consultation should test site facts and mitigation; it should not reopen a national strategic question already lawfully settled. Payment cannot excuse a breached operating standard.

Secure liabilities before revenues are distributed

Require costed plugging, restoration and post-closure monitoring, with initial security before first drilling even if stimulation never occurs. Increase it before stimulation and as cumulative liabilities grow. Use standard cash escrow or callable surety terms with regulator-controlled drawdown and replacement. Parent guarantees and insurance count only where effective through failure. Reassess costs annually and require top-ups before further work or distributions. No automatic offshore relief or guarantee applies.

Release security only after independently verified closure milestones, retaining provision for residual liabilities. Changes of control and asset transfers require continuous enforceable security; dividends cannot extract the resources backing it. Publish residual public exposure, including any uninsurable tail. Standard instruments make approval predictable without accepting nominal protection. If security and enforceable liabilities remain inadequate, change the structure or decline consent.

9 Private finance taxation and the gas market

Keep commercial extraction outside the generation mutual

The mutual generation group buys and operates participating power assets; it does not absorb shale geology, drilling losses or producer debt. Private equity, industry joint ventures and commercial lenders finance extraction. Overseas capital and expertise may participate. Licensing, competence checks and proportionate security scrutiny protect critical assets without requiring British-only financing or a generation-style ownership lock.

Authorise and disclose public research separately. Record the provisional £30 million envelope in UK Energy Reform Programme Annex Appendix E, alongside regulator start-up, net fee recovery and other public costs; do not treat those additional costs as included or zero. Publish grants, joint-venture exposure and liabilities without automatic follow-on funding. Private closure security begins at drilling. A security contract buys a demonstrated service and cannot disguise a production rescue. Preserve inherited rights; new contracts apply the shared compensation boundary without a blanket policy-risk indemnity. Release relevant funded project or research tranches against their dependencies and aggregate authorised public limits; unrelated incomplete register entries do not suspend compliant private applications.

Apply the agreed ordinary rate settlement

Extend the North Sea essay's proposed ordinary corporation-tax treatment to qualifying onshore extraction, with explicit legislation for the upstream ring fence. Preserve usable deductions for qualifying exploration, appraisal and development, appropriate loss carryforward and genuine upstream group relief. Test companies with no existing taxable production separately from established producers; a deduction is not a cash grant to a new explorer.

Retain the Ring Fence Expenditure Supplement initially, including the current 10% uplift for up to ten qualifying accounting periods, and rewrite eligibility where required for the ordinary-rate regime. Preserve valid accrued rights and prevent duplicate use. Maintain private closure responsibility and map any actual historical relief rights individually. HM Revenue and Customs guidance confirms the supplement's role for pre-production expenditure. [12]

Compare the proposed tax settlement with the inherited regime and a stable higher-rate alternative using project cashflows, financing costs and additional output. Distinguish a benefit to investment that would have occurred anyway from a change that makes a viable prospect financeable. The published July 2026 proposal for an Oil and Gas Revenue Levy must also be addressed if inherited; it should not reappear as an unnoticed sector levy under the ordinary-rate policy. [13]

Contract for supply without guaranteeing an industry

Producers sell gas under commercial arrangements. Creditworthy industrial customers, traders or generators may support development through purchase agreements. Such contracts should allocate quantity, quality, price and delivery risk expressly. The central electricity purchaser has no automatic right to fuel at production cost and no duty to finance every shale project.

Assess peak-day deliverability against the Supply paper's high-demand, slower-nuclear cases, alongside heating, storage, imports and infrastructure outages. Emergency contracts must specify stock or flow, term, performance, payment ceiling and exit, and compete against alternatives. Unproven shale remains outside the baseline security provision.

10 The legislation required for a durable settlement

Reopen onshore licensing and stimulation expressly

Amend the Petroleum Act 1998 onshore licensing and consent provisions, relevant model clauses, directions and planning policy. Replace any inherited statutory prohibition on new licences or shale activity, including provisions subsequently enacted from the Energy Independence Bill. Preserve valid existing licences and permissions while applying published transition rules. Regulations and departmental guidance cannot override a prohibition in primary legislation. [1–3]

Review sections 4A and 4B and the connected Infrastructure Act 2015 provisions for fracturing consent, safeguards and definitions. Use requirements that track the activity and its risks, preventing operators from escaping equivalent scrutiny by splitting injections or changing labels. Preserve proportionate distinctions between shale stimulation, conventional well treatments and geothermal activity. Protected-area, depth and land-access provisions need individual decisions in the legislative schedule. [14]

Give onshore decision makers the replacement objectives

Repeal the Climate Change Act 2008 national target and carbon-budget duties under the shared programme. Amend or replace Infrastructure Act 2015 section 49, which specifically requires advice on the impact of onshore petroleum against those duties. Retain emissions measurement, impact disclosure and climate-risk analysis through named existing bodies. Removing the committee and budgets without changing this cross-reference would leave a defective statutory instruction. [14–15]

Put the new affordability, supply-resilience, domestic-capability and responsible-closure objectives into the powers actually governing onshore decisions. Petroleum Act Part 1A defines its UK petroleum framework by reference to relevant UK waters; our North Sea amendment is not a substitute for expressly legislating the onshore mandate and territorial scope. Avoid extending offshore machinery to onshore projects without examining its fit. [16]

Preserve assessment through the carbon tax transition

Retain necessary environmental assessment, safety, water and waste duties, with the targeted amendments required for integrated consent. The Finch judgment requires assessment of relevant downstream combustion emissions under separate assessment law; Climate Change Act repeal does not remove that requirement. Assess impacts and state the trade-off under the replacement objectives rather than treating disclosure itself as a prohibition. [17]

Apply Programme Annex Appendix C's carbon tax settlement, replacing the UK ETS with a £10 per tonne CO2e carbon tax and abolishing UK CBAM from the start of year two. Assess actual installation coverage and pre-closure costs and the replacement £10 carbon tax, with delay and reversal sensitivities. Imported natural gas is outside the initial UK CBAM scope: abolition removes no direct protective tariff for shale producers. Retain emissions measurement and the separate safety and environmental duties. [18–19]

Map England, Wales, Scotland and Northern Ireland separately. The initial programme proceeds in England; participation elsewhere requires the relevant legislative and governmental settlement. Domestic repeal does not itself withdraw Britain from treaties or repeal devolved climate statutes.

11 First term delivery and the decision to expand

Use a timetable for decisions and evidence

PERIOD	REQUIRED DELIVERY
First months in office	Introduce the Energy Objectives Repeal and Replacement Bill to reopen the lawful route (Programme Annex Appendix F); publish regulator capacity, costed procurement and the voted funding ceiling. Consequence tolerances and technical standards follow within six months of the relevant Act provisions commencing. Begin baselines, private bids and open challenges.
Years one to two	After the lawful appraisal route and technical standards commence, determine qualifying consents; validate engineering results and conduct justified field tests when conditions are met. Publish prize verification, private co-funding and closure security.
Years two to four	Test repeatability and full field economics; deploy successful innovations, determine production applications and commission privately financed connections.

PERIOD	REQUIRED DELIVERY
By year five	Publish independently examined results, public cost, output and skills retained. Scale viable private prospects, close failed tests and end or expressly reauthorise public support.

These are proposed programme windows, not a production forecast. Existing evidence may allow earlier progress; essential baseline collection, geology or physical work may take longer. Publish a critical path for each site showing administrative waiting separately from evidence collection, drilling, testing and connection.

Make the expansion test inspectable

A development case must establish repeatable recovery under an acceptable operating envelope, a credible full-cost field plan, private capital capable of absorbing losses, funded water and closure obligations, and saleable gas with an executable connection route. Publish scenarios for well performance, prices, drilling intensity and interruption. A single favourable test cannot carry all those conditions.

Release public research tranches only against completed milestones. Hold an independent programme review within 24 months of the first stimulation, or at the published funding expiry if no stimulation occurs. Continued research requires a specified unanswered question and a bounded extension. Production decisions for compliant private projects continue on their own evidence and timetable; they are not suspended pending that review.

Measure output capability and liabilities

Report sustained production, delivered peak-day contribution, imports displaced, cost per saleable unit, private capital at risk, funded closure, incidents and public commitments. Track UK jobs, apprenticeships and supplier contracts separately from gross spending; assess additional work and displacement from the North Sea or other projects. Skilled labour is a constraint shared across the energy programme.

Retain useful research, personnel and datasets if a prospect fails. Geological knowledge, well-integrity capability and monitoring can have wider applications, but those spillovers need evidence and cannot justify endlessly funding unsuccessful wells. The commercial route remains open wherever projects satisfy the law; public support ends when its authorised purpose has been delivered or no longer justifies its cost.

What this paper does not claim

Resource estimates and early flow tests do not establish commercial reserves. Research does not promise a workable seismic envelope, production scale or cheap gas; private losses and closure remain with operators.

Sources and policy scope

Policy baseline checked on 12 October 2026. References support the factual baseline; proposed tests, institutional changes and delivery dates are our policy. Existing guidance does not establish that shale production is commercially or technically viable. Future commencement must be based on the law then in force.

[1] UK Parliament. Fracking Ban debate, 15 September 2026. Government position on the moratorium, new licensing and conventional low-volume stimulation.

https://hansard.parliament.uk/Commons/2026-09-15/debates/DE5D6B0F-B974-42BC-AB63-7DC34DA64A8A/FrackingBan

[2] Department for Energy Security and Net Zero. North Sea Future Plan government response, 26 November 2025. Onshore policy and existing licences.

https://www.gov.uk/government/consultations/building-the-north-seas-energy-future/outcome/north-sea-future-plan-government-response-accessible-webpage

[3] North Sea Transition Authority. Onshore licensing regime. Current licensing and operator requirements.

https://www.nstauthority.co.uk/regulatory-information/exploration-and-production/onshore/licensing-regime/

[4] Welsh Government. Onshore petroleum licensing guidance. Devolved powers, existing licences and policy against new licensing and fracturing consents.

https://www.gov.wales/onshore-petroleum-licensing-guidance-html

[5] Scottish Government. Unconventional oil and gas policy. Published position of no support for development.

https://www.gov.scot/policies/oil-and-gas/unconventional-oil-and-gas/

[6] British Geological Survey and DECC. The Carboniferous Bowland Shale gas study, 2013. Gas-in-place estimates and the limits on inferring recovery and reserves.

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/226874/BGS_DECC_BowlandShaleGasReport_MAIN_REPORT.pdf

[7] Environment Agency. Onshore oil and gas sector guidance chapter 13. Methane, groundwater and post-closure monitoring.

https://www.gov.uk/guidance/onshore-oil-and-gas-sector-guidance/13-monitoring-emissions-for-onshore-oil-and-gas-activities

[8] British Geological Survey. Recent scientific advances in the understanding of induced seismicity from hydraulic fracturing of shales, 2022, report OR/22/050. Risk, forecasting and traffic-light research.

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1105675/BEISInducedSeismicityReportOR220501A.pdf

[9] North Sea Transition Authority. Hydraulic fracturing operations remain suspended, 2 September 2019. Preston New Road events and the historic pause threshold.

https://www.nstauthority.co.uk/news-publications/hydraulic-fracturing-operations-remain-suspended/

[10] Health and Safety Executive. Role in onshore shale gas and hydraulic fracturing. Well-integrity oversight and independent well examination.

https://www.hse.gov.uk/shale-gas/about.htm

Legislative and operating sources

[11] Environment Agency. Onshore oil and gas sector environmental permits and permissions. Water, waste, emissions and subsurface assessment framework.

https://www.gov.uk/guidance/onshore-oil-and-gas-sector-guidance

[12] HM Revenue and Customs. Oil Taxation Manual OT26106, updated 30 July 2026. Ring Fence Expenditure Supplement, current rate and qualifying periods.

https://www.gov.uk/hmrc-internal-manuals/oil-taxation-manual/ot26106

[13] HM Revenue and Customs. Oil and Gas Revenue Levy policy paper, 13 July 2026. Draft legislation and intended replacement of the Energy Profits Levy.

https://www.gov.uk/government/publications/oil-and-gas-taxation-oil-and-gas-revenue-levy/oil-and-gas-revenue-levy-ogrl

[14] UK Government. Guidance on developing shale gas. Explains Infrastructure Act 2015 sections 43–50 and Petroleum Act consent safeguards. Historical institutional names must be read with current regulator guidance.

https://www.gov.uk/government/publications/about-shale-gas-and-hydraulic-fracturing-fracking/developing-shale-oil-and-gas-in-the-uk

[15] UK Parliament. Infrastructure Act 2015 section 49. Onshore petroleum advice against Climate Change Act duties; check subsequent territorial amendments at implementation.

https://www.legislation.gov.uk/ukpga/2015/7/section/49

[16] UK Parliament. Petroleum Act 1998 Part 1A, particularly section 9I. Defined offshore resource scope of the economic-recovery framework.

https://www.legislation.gov.uk/ukpga/1998/17/part/1A

[17] UK Supreme Court. Finch v Surrey County Council [2024] UKSC 20, judgment 20 June 2024, press summary. Downstream emissions and environmental assessment.

https://www.supremecourt.uk/cases/press-summary/uksc-2022-0064

[18] HM Revenue and Customs. CBAM policy summary, updated 9 September 2026. Initial product scope, domestic pricing interaction and January 2027 commencement.

https://www.gov.uk/government/publications/carbon-border-adjustment-mechanism-cbam-policy-summary/carbon-border-adjustment-mechanism-cbam-policy-summary

[19] UK Government. Legislation for a UK Emissions Trading System. Primary powers and auctioning legislation.

https://www.gov.uk/government/publications/legislation-for-a-uk-emissions-trading-system/legislation-for-a-uk-emissions-trading-system

[20] Schultz, Beroza and Ellsworth. A strategy for choosing red-light thresholds to manage hydraulic fracturing induced seismicity in North America. Journal of Geophysical Research Solid Earth, 2021. Consequence-based threshold research, not a validated UK operating standard.

https://agupubs.onlinelibrary.wiley.com/doi/10.1029/2021JB022340

[21] Verdon and Bommer. Green, yellow, red, or out of the blue. Journal of Seismology 25, 301–326, 2021. Magnitude jumps and trailing events in traffic-light schemes.

https://link.springer.com/article/10.1007/s10950-020-09966-9

Research engineering and community benefit sources

[22] UK Research and Innovation. Unconventional hydrocarbons in the UK energy system. £8 million programme, 2018–2022; independent scientific evidence and impacts.

https://www.ukri.org/what-we-do/browse-our-areas-of-investment-and-support/unconventional-hydrocarbons-in-the-uk-energy-system/

[23] US National Energy Technology Laboratory. Hydraulic Fracturing Test Site 2. Industry and research partnerships for field characterisation and completion design.

https://www.netl.doe.gov/node/3712

[24] Anderson and colleagues. Bowland Shale well placement strategy Part 1. Marine and Petroleum Geology 133, 105277, 2021. Craven Basin constraints and potential landing intervals; commercial performance is not established.

https://doi.org/10.1016/j.marpetgeo.2021.105277

[25] British Geological Survey. Scientists test a new model to understand and forecast seismicity induced by hydraulic fracturing operations, 2 July 2021. BGS and University of Bristol research using Preston New Road data.

https://www.bgs.ac.uk/news/scientists-test-a-new-model-to-understand-and-forecast-seismicity-induced-by-hydraulic-fracturing-operations/

[26] US Department of Energy. Geologic Enhanced Mapping System Prize announcement, 10 September 2026. $300,000 fault-mapping algorithm competition.

https://www.energy.gov/hgeo/geothermal/articles/office-geothermal-announces-geologic-enhanced-mapping-system-gems-prize

[27] US Department of Energy. Geophone Prize semifinalists, 2 December 2022. Three-phase $3.65 million competition with cash and expert or laboratory vouchers.

https://www.energy.gov/hgeo/geothermal/articles/hear-ye-hear-ye-gto-announces-geophone-prize-semifinalists

[28] UK Government response to the Energy and Climate Change Committee, 2013. Historical industry community benefits of £100,000 per exploratory well site and 1% of production revenues.

https://publications.parliament.uk/pa/cm201314/cmselect/cmenergy/609/60904.htm

Companion papers

UK Electricity Market Reform, Legacy Renewable Commitments, Generation Expansion and Mutual Finance, Domestic Fuel Supply Oil Gas and Coal and UK Build Reform provide the market, contract, ownership, extraction and infrastructure framework. UK Energy Reform Programme Annex holds the shared legislative, fiscal and funding rules; Electricity Supply through the Transition provides the supply and fuel-security scenarios. Other Energy Sources and Storage covers wider resource appraisal. This paper supplies the onshore discovery and development route.