

DENZEL HANKINSON

Energy Economics, Regulation, and Damages Expert
Chief Executive Officer and Founder, DHInfrastructure LLC

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PROFILE

Denzel Hankinson is an energy economist with nearly three decades of experience in utility regulation, ratemaking, and the economics of electricity and natural gas markets. He is retained as an expert in arbitration, litigation, and regulatory proceedings, and has worked for claimants and respondents alike: EPC contractors, project sponsors, utilities, ratepayer advocates, regulators, and public agencies. His work covers damages and quantum, cost of capital and discount rate selection, power purchase and availability contracts, delay and penalty analysis, wholesale market and dispatch modeling, and the economics of gas and LNG supply. He also reviews and rebuts opposing expert analysis.

In 2026 he filed direct testimony before the Massachusetts Department of Public Utilities, on behalf of the Department of Energy Resources, in the Boston Gas Company (National Grid) base distribution rate case. He has worked on the Brazilian power sector since 1998, advising ANEEL and Brazilian distribution utilities on tariff methodology, rate base, cost of capital, and revenue-cap design, and more recently analyzing power purchase agreement penalties and damages in a Brazilian generation dispute. He founded DHInfrastructure in 2007 and is its Chief Executive Officer. He previously held positions at Castalia, Econ One Research, and NERA.

EXPERT WITNESS PROFILE

Forums	Massachusetts Department of Public Utilities · U.S. federal court · international commercial arbitration · Dominican Republic courts · FERC.
Appointing parties	Claimants and respondents: EPC contractors, project sponsors and developers, utilities, regulators, public agencies, development finance institutions, and their counsel.
Languages	English. Spanish: fluent, including expert reports prepared in Spanish.
Sectors	Thermal and renewable power generation · transmission and distribution · natural gas and LNG · district heating · water · telecoms.
Based in	Northampton, Massachusetts (United States).

AREAS OF EXPERTISE

- Damages and quantum in energy disputes
- Power purchase and availability contracts
- Wholesale market and dispatch simulation
- Brazilian power sector regulation (ANEEL)
- Natural gas and LNG supply economics
- Generation asset and project due diligence
- Cost of capital and allowed returns
- Economic and financial modeling
- Counterfactual and but-for modeling
- Delay, disruption, and penalty analysis
- Merit order, marginal cost, and price formation
- Tariffs, revenue requirement, and cost of capital
- Take-or-pay, hedging, and fuel cost recovery
- Construction performance and completion review
- Discount rate selection and present-value analysis
- Review of opposing expert analysis

DISPUTE AND ARBITRATION EXPERIENCE

The list includes arbitral, judicial, and regulatory proceedings. Party names are withheld where the engagement is confidential. The DHInfrastructure team also advises on regulatory, contractual, and valuation questions in the power, gas, water, and telecoms sectors.

Matter	Forum / venue	Role & appointing party	Year
Boston Gas Company d/b/a National Grid, 2026 base distribution rate case: return on equity, accelerated depreciation, shared-savings incentive design, and affordability	Massachusetts Department of Public Utilities, D.P.U. 26-50	Testifying expert, Massachusetts Department of Energy Resources	2026
Brazilian thermal power plant: power purchase agreement breach, availability penalties, and damages (confidential)	International arbitration, Brazil	Consulting expert, EPC contractor	2019–2021

Matter	Forum / venue	Role & appointing party	Year
Road concession arbitration: toll adjustment clause and alleged lost revenues (confidential)	International arbitration, Peru	Consulting expert, project director	2019
Public construction contractor: de facto debarment and contractor evaluation criteria (confidential)	U.S. federal court, Massachusetts	Testifying expert (report and deposition), contractor	2023–2024
Build-own-operate power plant tender: rebuttal of damages claim (confidential)	Courts of the Dominican Republic	Consulting expert, respondent utility	2018–2019
Internet-of-Things reseller agreement cross-complaint (confidential)	U.S. litigation	Consulting expert	2023–2024
California electricity crisis: tariff violations, competitive benchmark prices, and refunds	FERC	Consulting expert, Pacific Gas and Electric	2011–2012
California electricity crisis refund proceedings: power marketer cost offsets	FERC	Consulting expert, Pacific Gas and Electric	2005–2006
Damages for alleged breach of power supply contracts (confidential)	Arbitration, United States	Consulting expert	2002
West-wide power market price mitigation hearings	FERC	Consulting expert, FERC	2001–2002
Market power analysis supporting a market-based rates application	FERC	Consulting analyst	1999
Acquisition premium in tariffs: merger of two U.S. utilities	U.S. state regulatory commission	Consulting analyst	1999
Congestion management and transmission pricing dispute between two U.S. energy companies	U.S. litigation	Consulting analyst	1998–1999

SELECTED MATTERS IN DETAIL

Opinions delivered as a testifying expert.

- Boston Gas Company d/b/a National Grid, 2026 base distribution rate case (Massachusetts Department of Public Utilities, D.P.U. 26-50, 2026).** The Massachusetts Department of Energy Resources retained Hankinson to review a filing that sought a USD 342 million annual revenue increase. His direct testimony addressed five subjects: return on equity, accelerated depreciation, a proposed non-pipeline alternative shared-savings mechanism, climate compliance performance metrics, and the low-income discount program. On return on equity, he argued that the company had confused rate base with allowed return, so that its capital-expenditure rationale would compensate investors twice for the same capital. He treated the five-year rate stay-out and the historical earnings shortfall as features of a plan the company itself designed and benchmarked the request against the two most recent Massachusetts gas authorizations, both of which sit well below it. He estimated the annual revenue impact of the requested increase at about USD 22 million. He further argued that the requested regulatory risk premium and the proposed switch to Equal Life Group depreciation hedge the same transition risk, and that approving both would pay shareholders twice for one exposure. On the shared-savings mechanism, he rebuilt the company's present-value comparison. Discounting future carrying charges at the company's own weighted average cost of capital, the same rate it earns on those charges, removed about USD 985,977 of cost per project; at a discount rate appropriate to ratepayers, the option the company presented as cheapest became the most expensive. He put the breakeven discount rate at 7.30 percent and recomputed the comparison using currently authorized cost-of-capital inputs. His affordability analysis, based on American Community Survey data for the service territory, estimated about 495,000 persons in energy-burdened households, of whom some 217,000 would remain above the affordability target after the proposed discounts.
- Public construction contractor evaluation and de facto debarment (U.S. federal court, 2023–2024).** A Massachusetts construction contractor sued the Commonwealth's Division of Capital Asset Management and Maintenance. It claimed the agency had denied it a liberty interest in bidding for public construction contracts and had debarred it, in fact or in effect, without due process. Hankinson submitted an expert report and was deposed on the evaluation form used in the agency's contractor certification system, and on the criteria the agency applies to deny or revoke certification.

Consulting expert engagements.

- Brazilian thermal power plant: PPA breach, availability penalties, and damages (2019–2021).** An EPC contractor engaged Mr. Hankinson, in anticipation of arbitration, to examine the damages that might be alleged for breach of a power purchase agreement at a Brazilian generation plant, how those damages and penalties are calculated, and how much control a plant operator has over the level of operational obligation it accepts. He reviewed the PPA, the market rules, and the contractual and regulatory provisions governing plant reliability, together with Brazilian legislation on energy and capacity auctions and the bids other participants had made in comparable auctions. Combining the plant's operational history with regulatory financial data, he concluded that rainfall and hydropower reservoir levels, rather than the operator's own performance, drove the penalties imposed. He also advised on the

damages available when an operator fails to deliver energy, capacity, and ancillary services, and traced how the operator's auction strategy had set the level of its operational commitments and therefore its exposure to penalties.

- **Road concession arbitration (Peru, 2019).** A municipal government and an international investor disputed the toll adjustment clause in a build-operate-transfer concession, and the lost revenues the investor claimed followed from it. As project director, Mr. Hankinson reviewed the concession contract, related legal instruments, and the parties' correspondence, and examined the concessionaire's revenue-loss model. He then built an independent model from ridership figures, macroeconomic parameters, and the contractual interpretation, which exposed flaws in the nature and quantum of the claim. The resulting report went to the tribunal in English and Spanish. The tribunal found the claimed revenue shortfall baseless and held that the claimant had over-collected revenues.
- **Build-own-operate power plant tender (Dominican Republic, 2018–2019).** A large U.S. investor-owned utility requested Mr. Hankinson's team to review an opposing expert report alleging damages from a build-own-operate transaction. He found errors in the nature and quantum of the damages claimed, as well as further defects in the claim. His analysis went into a rebuttal report filed in the Dominican courts.
- **California electricity crisis: tariff violations and competitive benchmark prices (FERC, 2011–2012).** Pacific Gas and Electric sought to establish that sellers in the California markets had violated CAISO-PX tariffs in the summer of 2000. Mr. Hankinson supported the expert testimony. He assembled a database of market bid prices and production costs, simulated market participants' dispatch over the period, calculated economic withholding by power marketers, and analyzed the bidding behavior of individual sellers. The work isolated anomalous bidding strategies that amounted to tariff violations, the prices that would have prevailed without them, and the refunds owed.
- **California electricity crisis refund proceedings (FERC, 2005–2006).** Power marketers claimed costs that would offset the refunds owed to Pacific Gas and Electric. Mr. Hankinson helped prepare testimony contesting that claim. He analyzed power purchase cost submissions from a range of marketers and utilities, worked through their trading books, and simulated dispatch by resource stacking to determine which resources served native load and which were sold into the CAISO-PX.
- **Damages for alleged breach of power supply contracts (United States, 2002).** Mr. Hankinson built a database model to quantify damages for alleged breach of power supply contracts between a power marketer and a utility in the SERC region. The work included a detailed analysis of the marketer's trading books to establish its forward purchasing strategy.
- **West-wide power market price mitigation hearings (FERC, 2001–2002).** Mr. Hankinson built a database and analyzed CAISO dispatch, meter, and price data for testimony filed in FERC's west-wide price mitigation proceedings.

PROFESSIONAL EXPERIENCE

DHInfrastructure LLC | Northampton, Massachusetts

2007 – Present

Chief Executive Officer and Founder

Founded and leads an economic and regulatory advisory firm working for governments, regulators, utilities, private investors, development finance institutions, and counsel in the power, gas, water, and telecoms sectors. Directs the firm's dispute work: damages and quantum, contract and tariff interpretation, market and dispatch analysis, and review of opposing expert reports. Also directs its regulatory, market design, and project evaluation practice.

Castalia

2004 – 2007

Manager

Advised governments, regulators, and development finance institutions on infrastructure regulation, public-private partnerships, tariff design, and sector reform.

Econ One Research, Inc.

2003 – 2004

Consultant

Economic analysis and litigation support in electricity and gas markets, including regulatory filings and analysis of generation and market performance.

JITEA, Energy Analytics

2000 – 2003

Independent Consultant

Power market analysis for utilities, regulators, and FERC: dispatch simulation, bid and trading book analysis, market power assessment, and damages quantification.

National Economic Research Associates (NERA) | Washington, DC

1997 – 2000

Senior Consultant

Regulatory economics for electricity utilities and regulators in Brazil, India, and the United States. Estimated cost of equity, determined revenue requirements and rate base, designed efficiency factor (X-factor) methodologies, and supported expert testimony before regulatory commissions.

Salzburg Global Seminar | Salzburg, Austria

1994 – 1996

Program Assistant

EDUCATION

- M.A., International Economics, with a specialization in Energy, Environment, Science and Technology, Johns Hopkins School of Advanced International Studies (SAIS), Washington, DC, 1998.
- B.A., International Relations (Political Economy track), The College of William & Mary, Williamsburg, Virginia, 1994.

PROFESSIONAL AFFILIATIONS AND LANGUAGES

- American Evaluation Association (AEA).
- English (mother tongue); Spanish (excellent, spoken and written); German (fair).

ANNEX: SELECTED REGULATORY, ECONOMIC, AND ADVISORY ASSIGNMENTS

Non-dispute engagements relevant to the issues in this matter: Brazilian power sector regulation, thermal generation and gas supply economics, wholesale market and dispatch analysis, and the evaluation of construction delay and project performance.

United States: utility regulation and ratemaking

- **Massachusetts Department of Energy Resources, natural gas rate cases and supply contract proceedings (2026–2027).** Standing engagement supporting DOER's intervention before the Department of Public Utilities. Reviews company filings, prepares information requests and expert testimony, responds to record requests, appears at evidentiary hearings, and develops policy positions for briefs.
- **Massachusetts Office of the Attorney General, Gas System Enhancement Program reconciliation filings (2018 and 2024).** Reviewed annual GSEP reconciliation filings in four dockets for the Energy and Ratepayer Advocacy Division and identified issues warranting further inquiry.
- **California utility incentive reform, Net Zero California (2026).** Directed an analysis of how rate-of-return regulation shapes investor-owned utility decisions, and of how performance-based mechanisms could better align utility incentives with affordability and clean energy objectives.
- **Financing options for new transmission lines in California, Net Zero California (2023–2024).** Directed revenue requirement modeling that compared investor-owned utility, public sector, and public-private partnership ownership. The models covered rate base, capital structure, cost of capital, depreciation, and operations and maintenance.
- **Cost allocation at cogeneration facilities, Ukraine, USAID (2021).** Directed work helping the national energy regulator revise cost allocation between thermal and electric generation at cogeneration facilities, including depreciation treatment, using case studies from several countries.

Brazil: power sector regulation

- **Tariff concepts and procedures, ANEEL (2000).** Advised Brazil's national electricity regulator on the tariff approach best suited to Brazilian distributors under a revenue-cap regime. Proposed regulatory treatments for rate base, cost of capital, and the efficiency factor (X-factor), and drafted the explanatory paper issued to distribution licensees.
- **AES Sul tariff revision, ANEEL (2003).** Estimated the utility's proposed rate base, cost of capital, and X-factor in one of the first Brazilian distribution tariff revisions.
- **Eletropaulo revenue requirement (2000).** Calculated the revenue requirement for the first ANEEL filing by Brazil's largest distribution company. Collected and assessed the data, built a model for alternative test years, and ran sensitivities on test year, O&M cost methodology, cost of capital methodology, capital structure, rate base valuation, and the treatment of non-concession activities. Assessed the results from the regulator's perspective.
- **Cost of capital for a Brazilian distribution utility (2000).** Estimated return on equity for a first tariff revision before ANEEL using the capital asset pricing model, discounted cash flow modeling, and the comparable earnings method.
- **Distribution utility revenue requirement, Brazil (2001).** Determined the revenue requirement of a newly privatized distributor for its first tariff review, including the rate base calculation.
- **Escelsa tariff revision, ANEEL (1998).** Helped ANEEL calculate return on equity for its first tariff revision of a newly privatized distributor, and drafted guidance on estimating the components of the revenue requirement.

Thermal generation, natural gas, and LNG

- **Talimarjan combined-cycle power plant, Uzbekistan, project completion report (2020–2021).** Evaluated a USD 350 million project for two 450 MW combined-cycle gas turbine units for the Asian Development Bank. Reviewed project preparation, design, appraisal, and implementation arrangements; the performance of the borrower, the executing agency, consultants, contractors, and suppliers on procurement, supply, delivery, construction, and installation; and the plant's initial operation and the sustainability of its benefits. Recalculated FIRR, WACC, and EIRR.
- **National Integrated Power Project generation transaction advisory, Nigeria (2022).** Conducted commercial, financial, and regulatory due diligence for a private investor bidding for thermal power plants. Reviewed the Nigerian power and gas markets, the power purchase agreements and gas supply arrangements at each plant, and the viability of alternative gas supply.

- **Fuel hedging in Pacific small island states, ADB (2022–2023).** Analyzed fuel supply chains, storage, and the commercial and financial arrangements of state-owned utilities, fuel supply companies, and governments. Measured fuel consumption and direct and indirect subsidies, and projected fuel cost and subsidy scenarios to 2030.
- **Future of gas in Illinois (2024–2025).** Analyzed the financial effect of gas utility investment plans on Illinois customers by service area and customer class for the Illinois Citizens Utility Board, and projected timelines for customer transition to electric alternatives.
- **World demand for gas turbines (1999).** Estimated supply and demand in the gas turbine market for the government of a large Latin American country. Evaluated forecasts of world electricity demand and installed capacity growth, and assembled the data deck for a least-cost optimization model.
- **Due diligence for a new hydropower plant, Sierra Leone (2020).** Acted as independent sector adviser to a power plant developer. Reviewed existing market studies and the developer's market model, and assessed the project agreements against domestic and regional electricity sector regulation.

Wholesale market design, dispatch, and price formation

- **Power supply planning for Georgia, World Bank (2019–2020).** Directed modeling with an in-house dispatch and optimization model to test alternative generation plans to 2047, with sensitivities on demand, import and export costs, and energy efficiency.
- **Least economic cost planning of new supply, Georgia, World Bank (2014–2015).** Built an electricity demand model and demand scenarios, measured existing supply capacity and the supply-demand gap, and assembled supply portfolios spanning hydropower, natural gas, renewables, efficiency, and imports. Simulated dispatch for each portfolio, calculated long-run average incremental cost, and ran sensitivities on demand, gas price, and financing to find the end-user tariff effect of the least-cost plan.
- **Electricity demand forecasting and market reform, Saudi Arabia, World Bank (2020–2021).** Advised on the contractual, legal, and regulatory arrangements for a transition to a single-buyer model and then to a wholesale market. Reviewed options for managing existing and pipeline take-or-pay power purchase agreements, the use of vesting contracts, and the design of energy, capacity, and ancillary services products. Prepared a taxonomy of demand forecasting methods by forecast horizon and application, including methods that support economic dispatch.
- **Interim generation contract options, Timor-Leste, ADB (2015).** Analyzed the operations and maintenance arrangements for the country's main thermal plants and its transmission and dispatch system, agreed evaluation criteria with government, and evaluated interim and future commercial options.
- **Regulatory filing on capacity margins and reliability (2002).** Analyzed historical trends in electricity capacity margins, supply reliability, and prices for a Midwestern utility's FERC filing.

Delay, construction performance, and project completion

- **California transmission delay analysis (2026).** Built an economic and financial model, with sensitivity analysis, to quantify the cost of permitting and regulatory delay in California transmission development and to estimate the savings from faster approval under alternative lead-time scenarios. Translated the results into ratepayer effects for Net Zero California.
- **Uzbekistan Power Transmission Improvement Project, completion report (2025–2026).** Prepared an account of project design and implementation for the Asian Development Bank, with findings on cost deviations and compliance with loan covenants. Assessed relevance, effectiveness, efficiency, sustainability, and the performance of the borrower, the executing agency, and ADB, and recalculated FIRR and EIRR with sensitivities.
- **Turkmenistan National Power Grid Strengthening Project, completion report (2026).** Assessed project outcomes and likely impacts, financial and economic performance, monitoring activities, and covenant compliance, and recommended changes to future project design and implementation arrangements.
- **Abengoa KaXu concentrated solar power plant, South Africa, IFC (2016–2017).** Advised the team evaluating a 100 MW concentrated solar power plant with storage through design, construction, and its first year of operation, including the project's theory of change and the lessons for continued operation and future projects.
- **Zorlu Enerji power project, Pakistan, ADB (2017).** Prepared the validation report for an independent evaluation of the project and tested the evidence supporting its performance ratings.