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EDUCATION

2019 *MBA*, Warwick Business School, Coventry, UK

2005 *M.Sc. (Dipl.-Ing.) in Mechanical & Industrial Engineering*, Vienna University of Technology, Vienna, Austria

CERTIFICATIONS

2020 *Chartered Financial Analyst (CFA)*, CFA Institute

2016 *Energy Risk Professional (ERP)* certification, Global Association of Risk Professionals

PROFESSIONAL EXPERIENCE

2022 – Present *Vice President*, Compass Lexecon, Paris & Berlin

2020 – 2022 *Senior Economist*, Compass Lexecon, Paris & Berlin

2005 – 2020 *Managing Consultant*, Wagner, Elbling & Company, Vienna

LANGUAGE SKILLS

- German (native)
- English (fluent)
- French (intermediate)

SELECTED CONSULTING EXPERIENCE

Note: The experience listed below includes projects with former employers

Hydrogen and clean gases

- **European Clean Hydrogen Alliance: Support to the Production Round Table (PRT).** Support to develop clean hydrogen production project archetypes, key project attributes describing projects and their impact towards the fulfilment of the strategic targets, co-organising several sherpa meetings the meeting of 50+ CEOs and heads of institutions to discuss and align the PRT results. ([link](#) to the results document of all round tables)
- **Major EU utility: Decarbonised Methanol Market Study.** Assessment of the market potential, competition and regulatory framework for methanol produced from electrolytic hydrogen for various end-usages in Germany and France.
- **ACWA Power: Global hydrogen export market review.** Assessment of hydrogen market size and drivers of growth and competitiveness for a market report as part of an IPO prospectus. ([link](#))
- **EU Utility: Economic concept for structuring hydrogen import contracts:** In-depth assessment of risks arising from green hydrogen import from outside of the EU across the value chain (i.e. from RES-generation, green hydrogen production, transport and storage to retail supply to industrial end users) for various archetypical project set-ups; development of principles for the efficient risk allocation across the players involved and deriving matching contractual risk transfer mechanisms (ongoing).
- **Mitsubishi Heavy Industries (MHI): Analysis of alternative fuels for the maritime and aviation sector.** Review of the existing and forthcoming regulatory framework as well as the conventional and alternative fuel options in both sectors. Analysis of the regulatory and technical drivers for fuel switching and deriving possible implications for MHI's business activities.
- **Austrian Electricity Industry Association (Österreichs Energie): Green Hydrogen Roadmap.** Assessment of the targets & requirements, drivers, hurdles (technical, commercial, regulatory) and interdependencies for scaling-up green hydrogen business cases in Austria (green hydrogen production / electrolyzers, hydrogen-based electricity generation and hydrogen storage). ([link](#))

- **EU gas storage operators: Energy economic analysis of the need for underground hydrogen storage.** Analysing and developing arguments for the role and value of underground hydrogen storage in the decarbonisation of the electricity and wider energy system, deducting benefits to stakeholders, as well as requirements for a regulatory framework
- **Swiss Federal Office for Energy (BFE): Hydrogen support strategy.** Development of a framework for the support of hydrogen and hydrogen derivative use cases in Switzerland. Analysis of the economics of hydrogen production and use as feedstock as well as for electricity and heat production and in the mobility sector based on modelling of the European hydrogen market. Assessment of commercial bottlenecks (inter alia cost gaps per use case) and a set of regulatory measures to overcome them. Recommendation for regulatory interventions in the mid and longer-term to build-up the Swiss hydrogen sector in line with the targets outlined in the BFE's Swiss energy system scenario ("Energie Perspektiven 2050+")
- **German gas TSO: Biogas connection agreements & process.** Developing the commercial and technical content as well as the process for connecting biogas plants to a gas network
- **Renewable power producer: Green Hydrogen Market-Entry Strategy for a National European Market.** Support the development of a green hydrogen go-to market strategy inter alia with the analysis of the hydrogen regulatory framework, national and regional public funding & support schemes, estimations of current and potential regional (green) hydrogen demand, the identification of potential hydrogen end-users, the analysis of the (green) hydrogen value chain and key players, the review of announced and ongoing green hydrogen projects and their stakeholders, the identification of potential strategic partners and of non-organic growth opportunities. Based on these strategic options an implementation plan was developed

(District) heating

- **Vilnius District Heating (Vilnius Šilumos Tinklai – VŠT): long-term strategy.** Supported VŠT to develop their long-term strategy by evaluating a multitude of strategic options against internal capabilities, the competitive environment and the regulatory framework. The supporting analyses included a comprehensive long-term financial model to assess the impact of executing the strategic options on the company's investment, profitability and financing needs as well as the specification of KPIs and respective targets and an implementation plan.
- **Wien Energie: Decarbonisation study for the Viennese district heating system.** As part of the heat market analysis of a comprehensive decarbonisation study, particular focus was put on the role of district heating by increasing the use of geothermal heat, heat storages and large heat pumps. ([link](#))
- **Various EU district heating operators: Modelling based investment & decarbonisation strategy development.** Comparative performance analysis of various long-term investment strategies in district-heating production assets (e.g. fossil/geothermal/biomass/heat-pumps and heat storages) under energy price uncertainty and pressure to decarbonise – with a particular focus on competition against individual heat generation by end-users; developing and parametrisation of a comprehensive DH system model with accompanying individual heating, regulatory and financial model in Excel/VBA/Python
- **EDF Nuward: Study on the opportunities for SMRs in the industrial and district heating sectors.** Opportunity study for the development of a series of small modular reactors (SMR) in France. Review of technological requirements, market size, decarbonisation pressure and technological alternatives of heat demand in district heating as well as various industrial processes in France. ([link](#) to the executive summary)
- **Burgenland Energie: Heating sector decarbonisation strategy.** Part 1 – Status quo analysis of heat demand and supply: Analysis of 17 indicators covering (i) drivers for heat demand, (ii) current heat consumption and (iii) current heat supply structure and (iv) environmental impact of heating with a fine spatial resolution (171 municipalities) for the Austrian federal state Burgenland as part of the development of a strategy to decarbonise heat.
- **Austrian utility: Seasonal heat storage investment appraisal.** Quantitative modelling support for an investment decision regarding the inclusion of a large seasonal heat storage in connection with geothermal heat generation into a district heating system
- **Austrian utility: Supporting a CHP shut-down decision.** Quantitative modelling analysis regarding the potential shut-down of a large gas-fired combined heat and power (CHP) plant supplying a district heating system

Gas storages & LNG Terminals

- **LNG Terminal operator: third-party access (TPA) exemption.** Drafting of a TPA exemption request including quantitative analyses of the impacts on gas market competition.
- **German gas storage operator: Economic assessment of a potential shut-down.** Developing an Excel-based analysis model to determine the net present value of cash flows from the operation and subsequent decommissioning of a German gas storage facility against the background of ongoing commercial difficulties. The analysis covered two shut-down scenarios and seven price scenarios. Market revenues were determined based on both a deterministic optimisation against the price forward curve and a stochastic optimisation.



- **Central European gas storage operator: Developing fast-cycle storage products.** Developing (under various regulatory restrictions) gas storage products for a fast-cycle gas storage addressing both gas retailers and gas network operators
- **German gas company: Valuation of German gas storage assets.** Sell-side valuation of a bundle of physical and contractual assets in connection with an underground gas storage installation

Decarbonisation studies

- **SITRA – The Finnish Innovation Fund: Study on enabling cost-efficient decarbonisation in Finland.** Large study on the full decarbonisation of the entire Finnish economy until 2050 via direct and indirect (i.e. via hydrogen and PtX fuels) electrification and assessment of the cost-optimal development trajectory for the Finnish electricity sector as well as bottlenecks towards this aim and potential mitigation measures. ([link](#))
- **Wien Energie: Decarbonisation study for the Viennese energy system.** Comprehensive study to develop scenarios for the decarbonisation of energy use for inter alia heating, cooling and mobility to assess the need for technological change to meet decarbonisation targets and resulting changes in investments needs as well as fuel consumption, carbon emissions and end-user costs. ([link](#))
- **Wiener Netze: Decarbonisation impact on urban energy distribution grids.** Modelling required changes to the gas, electricity and district heating grids, estimated costs and investments for the transformation, identified techno-economic and regulatory transformation hurdles and – where possible – pointed out potential mitigation measures
- **Wiener Netze: Measures to reduce electricity DSO investments for energy system decarbonisation:** Modelling-based identification and impact quantification of measures (technological and regulatory) to reduce investment needs in the electricity distribution grid; assessment of implementation steps and implementation hurdles; deduction of measures with the best strategic fit.
- **Wien Energie: Decarbonisation benchmarking of selected European cities.** Comparison of the climate impact and efforts of ten EU cities and Vienna across the entire urban energy system (incl. heat, mobility, energy generation) using 16 quantitative indicators and analysing best practice examples for each city. ([link](#))
- **Austrian gas and heat association (FGW): Energy system study for Austria.** Comprehensive, modelling base cross-sectoral study on pathways for the decarbonisation of the entire Austrian energy system (inter alia (i) end-uses in heat, mobility, industry; (ii) production of power, district heating and hydrogen; (iii) vectors: gas, electricity, district heat, natural gas, biomethane, hydrogen and biomass) and comparative evaluation of two scenarios with respect to inter alia cross-sectoral and cross-border impacts of decarbonisation. ([link](#))
- **Austrian utility: Strategic analysis of heating market legislation.** Analysing the 2020 government legislation outline for energy system decarbonisation against (a) existing legislation (inter alia building codes and residential building subsidy schemes) and (b) the current strategic plan of a utility operating a gas, electricity and district heat retail business; identifying potential policy implementation measures more in line with the strategy as a basis for lobbying efforts.
- **Austrian gas DSO: Quantitative decision support for a network reinvestment decision.** Quantitative modelling support for a DSO considering the reinvestment or shut down of a remote part of its gas distribution network.
- **Austrian utility: Heat market decarbonisation strategy.** Comprehensive and detailed quantitative scenario analysis for selecting a long-term investment strategy for gas/electricity distribution grids and local heat networks resulting in attractive operator returns and acceptable end-user costs under energy price uncertainty and decarbonisation pressure

Investment and strategic support

- **International institutional investor: Buy-side regulatory and market due diligence for an interest a large German offshore wind park.** Analysis of the power market and regulatory framework in Germany and the impact on offshore wind installations; developing power price projections for Germany up until 2050 in different scenarios incl. sensitivity analysis; reviewing power commercialisation arrangements and potential additional revenue options
- **European institutional investor: Buy-side regulatory and commercial due diligence for an interest in the Austrian multi-utility Energie Steiermark:** Analysing the regulatory framework and the company's business plan; providing a market outlook based on own modelling; evaluating risks and underlying assumption in the valuation model in all core business segments
- **South-East European electricity and gas utility: Regulatory and market report as part of an analyst presentation and IPO prospectus.** Macro-economic overview as well as comprehensive review of the electricity and gas markets of an EU and an Energy community country. Coverage of inter alia: historic development, market design, main players, price evolvments, demand and demand drivers as well as the impact of the post-Covid-19 energy price surge on utilities and end-users and respective remediation measures put in place.



- **Institutional Bond Investor: Outside-in review of portfolio of energy utilities in the Czech Republic and Slovakia.** Analysing the business model outlook and risks of a portfolio of energy utilities against the evolving energy sector crisis following the Russian invasion of Ukraine for a prospective bond investor. The portfolio included electricity and gas grids, electricity and gas retail operations, and several district heating system operators.
- **DEWA – Dubai Electricity and Water Authority: Market report as part of an IPO prospectus.** Comprehensive analysis of the Dubai water and electricity sectors – including the policy framework, the regulatory & competitive environment, as well as key domestic and regional trends; international comparison of water & electricity sectors as well as of other water and electricity operators, including a KPI benchmarking. ([link](#))
- **Gas infrastructure investor: Regulatory due diligence of a European gas TSO.** Analysis of regulatory cost determination and tariffing principles and identifying resulting risks (inter alia capacity sales risk, risks from efficiency requirements)
- **German gas TSO: Mid-term strategy.** Development of a business strategy for a German gas TSO facing decarbonisation threats to its business model incl. M&A strategies to make-up core-business declines
- **Large German utility: Modelling heat pumps offering ancillary services Germany.** Analysis and detailed modelling of the usage of aggregated residential heat pumps as flexibility providers on German ancillary services markets (aFRR and mFRR) for the 2021-2030 period.
- **Independent international power producer: Financial model underlying a fossil PPA.** Update and expansion of a comprehensive financial model (three statements, 20 years, monthly granularity) to reflect regulatory & commercial changes
- **Agricover: EU and global analyses of the markets for agricultural inputs and financing as part of an IPO prospectus.** Analysis the global and European agricultural sector and trends, with a specific focus on the Romanian markets, investigating existing opportunities in the certified seeds, crop nutrition and crop protection markets. ([link](#))

Regulation, market model development and market model implementation

- **Agora Energiewende: Analysis of policy measures for supporting household customers in times of high electricity prices.** Evaluation of wholesale and retail interventions in power markets against (i) achieving policy targets, (ii) their economic efficiency and (iii) distortions introduced; providing a review of measures introduced across the EU and globally and international case-studies on particular measures implemented.
- **The American Chamber of Commerce in Bulgaria: Electricity market design requirements to achieve decarbonisation targets.** Based on a comprehensive electricity sector modelling developed in an initial project phase the relevant elements of an investment and transition framework to support the decarbonisation objective were identified. This included the assessment of missing money for generation capacities required for an increasingly decarbonised while still resilient electricity supply, the assessment of potential support schemes available, an international review of support schemes for renewable generation and flexibility sources as well as of coal phase-out schemes. ([link](#) to the executive summary)
- **ContourGlobal: EU energy policy and regulatory updates.** Ongoing review and analysis of regulatory and policy changes as well as market developments in the EU and in several EU member states, with a special focus on renewable energy. Topics include emergency measures in the gas and electricity markets during the recent energy crisis, the ongoing EU power market design reform, changes to the state aid framework, renewables targets and permitting.
- **Development of a gas market model for a non-EU country.** Development of a comprehensive market model specifying inter alia market institutions (incl. business plans), network access (capacity products & allocation, tariffing) and physical/commercial balancing
- **Gas company in an EFTA country: 2nd energy package implementation study.** Concept study and roadmap to implement the 2nd EU common gas market legislative package in an EFTA country
- **Various gas sector clients: Industry opinions to legislative or regulatory proposals for the gas sector.** Developing and aligning opinions – partly underpinned by quantitative analyses – in various cases and in several jurisdictions; notable cases relate to gas network tariffs and balancing

Energy procurement, retailing, portfolio & risk management

- **Central European multi-utility: Energy procurement and risk management methodologies.** supporting the design & implementation of a portfolio/risk management and transfer pricing logic (between trading- and retail- as well as asset management divisions) for a large multi-asset (LTCs, storage, power plants ...) and multi-commodity (gas, power, district-heat) utility



- **German mid-stream gas company: Portfolio & Risk management reporting:** Development of a comprehensive reporting structure for a large gas portfolio comprising long-term as well as traded market procurement contracts, gas storages as well as sales contracts to industrial and municipal clients; coverage of inter alia multiple complex indexations and swap structures, multiple procurement strategies and books subdividing the portfolio and a comprehensive set of limits.
- **Swiss utility: Mid-term retail strategy.** Developing and evaluating comprehensive options for gas retail strategies in a liberalising market incl. a specification of resources and know-how required as well as a fitting overhaul of the subsidiary structure
- **Swiss utility: Multi-market gas sourcing optimisation.** Comparative quantitative analyses of gas procurement strategies from alternative liquid EU gas trading hubs (including supply, demand and capacity utilisation outlooks)
- **Central European multi-utility: Analysis of gas security of supply.** Client-specific study on the security of gas supply for a dual-fuel CHP-plant producing district heat and evaluating risks of switching to gas only (incl. quantitative analyses)
- **Several EU-based clients: Market entry studies.** Quantitative market entry analysis and preparation of business plans for gas wholesalers and retailers
- **Several clients: long term gas supply contract arbitrations.** Supporting several gas LTC arbitrations with quantitative analyses of central and south European wholesale and retail markets for gas and competing fuels
- **Austrian utility: retail product price calculation methodology.** Development of methodologies and a tool for the calculation of full costs of gas retail products for industrial end-users indexed against a bundle of gas futures
- **Major multinational tech company (confidential): Winter Energy Risk Assessment.** Analysing the security of supply situation for gas and electricity in the upcoming winter for 12 European countries, incl. inter alia the system-wide electricity generation adequacy, the electricity curtailment framework and an assessment of locational risks.

Operations and organisation

- **Target operating model for an Energy Community gas TSO.** Developing a target operating model for a newly established gas TSO based on Energy Community requirements & EU best practice; authored the comprehensive business process model (incl. KPIs & outsourcing recommendation) an organisational structure and an implementation roadmap; named key expert for gas TSO operations.
- **German Gas TSO: Set-up of a German gas market area.** Conceptual, contractual and processual setup of a multi-TSO gas market area including the establishment of a market area manager and a virtual trading point as well as development of inter and intra-TSO operational processes
- **German gas DSOs: Standard load profile implementation.** Support the implementation and subsequent optimisation of standardised load profiles assignment for gas balancing
- **Central European utility: Process-based re-organisation.** Supporting the reorganisation of responsibilities within a large (30+ employees) energy economics department of multi-utility (gas, power, district-heating) based on comprehensive analyses of processes and internal/external information exchanges.
- **Various clients: Optimisation and mapping of core energy operations processes.** Several large projects to design (inter alia using BPMN) & optimise logistics, procurement and retail related business processes and support the implementation of supporting IT systems
- **Two German Gas TSOs: Design and evaluation of a cooperation for operational and commercial dispatching to increase efficiency in the light of the German incentive regulation.** Definition of a cooperation model (mutual service provision, common IT systems, ...) and future service provision (process standardization, service structure, IT strategy), assessment of synergies (implementation costs and synergy effects) and their impact on network operator earnings over several regulatory periods in the light of GasNEV and ARegV.

IT and data management

- **Data management strategy for an Energy Community gas TSO.** Analyse the current state of energy data management (metering, allocation and balancing data) and recommend a target state compliant with EU/EnC legislation and EU best practice
- **Various clients: IT requirements specification.** Developing IT requirement specification for TSOs' and energy retailers' operational IT systems (gas logistics & ETRM systems)

Seminars

- **Various clients: Seminars for energy industry professionals.** Holding in-house and public seminars for energy industry professionals inter alia on corporate PPAs, power market developments, gas logistics, gas procurement and energy portfolio management.

