

Kshitiz Agarwal

Energy Transition Strategist | Policy, Strategy, Innovation and Delivery | Thought Leader

Personal Details

Length of service in the profession: 14 years

Summary Biography

Kshitiz is a leader based in Ireland with over 14 years of experience in strategy development and asset management within the energy sector. Renowned for his expertise in advising government agencies and top-tier investors globally on energy transition strategies, Kshitiz deeply understands the intricate regulatory and market landscapes that influence the energy industry. A standout feature of Kshitiz's profile is his exceptional ability to identify interdependencies between different sectors and capabilities, coupled with his diligence in ensuring thorough evaluations. As the go-to champion for optimizing business processes and enhancing technology utilization, he effectively connects people to information and turns it into actionable intelligence.

Leveraging his entrepreneurial skills, Kshitiz excels in identifying policy gaps and strategic directions, ensuring that strategies remain relevant and aligned with purpose-led solutions to guide businesses toward a zero-carbon future. Implementation of strategic plans, initiatives, and transformation has been a recurring theme throughout Kshitiz's career. I act as a catalyst to accelerate the energy transition, driven by my unique "First Principle Thinking" and "System-wide Thinking". Kshitiz's holistic approach ensures the maximization of current and future assets while addressing the complex challenges of the eco-system including energy security and environmental sustainability. His recent projects encompass decarbonization pathway initiatives, business model innovation, gap analysis between directives, codes, standards, and technological capabilities, technological & solution maturity, energy security of supply, engineering justification papers, and independent reviews of the Net-Zero pathways and policies. He has spent the last eight years at the intersection of strategy, innovation, and execution. Kshitiz's comprehensive approach and strategic insights make him a pivotal figure in the power generation and industrial energy transition landscape.

Key Skills/Areas of Expertise

- Energy transition
- Energy security and policy
- Policy and Regulation
- System integration and Interdependencies
- Critical thinking and strategic planning
- Business, asset management, and appreciation
- Power generation
- Low carbon fuels
- Contract and Programme development and management
- Risk assessment and mitigation
- Techno-economics and market assessment
- Innovation, planning and collaboration.
- Strategic, long-term infrastructure decision-making, particularly increasing robustness through flexibility

Education, Qualifications, Registrations and Certifications

- M.Sc., Thermal Power (Specialisation in Gas Turbines), Cranfield University, 2012
- B.E., Power Engineering, Nagpur University, 2010
- Project Management Professional (PMP), 2017
- Chartered Engineer, Engineering Council, UK, March 2018

Memberships and Affiliations

- Chair of Thermal Power Committee in the Institute of Mechanical Engineers (IMechE)
- Reviewer at The Aeronautical Journal

Languages

- Hindi (Mother Tongue)
- English (Native or bilingual)

Employment History

- **KA Advisors:** Feb 2025
Position: Founder | Principle
- **Jacobs Engineering:** April 2022 to December 2024
Position: Senior Associate Director | Head of Energy Transition Practice
- **Kasten I Kshitiz Consultation Services:** July 2020 to March 2022
Position: Founder to Kasten I Advisor & Self-Employed Consultant
- **Mitsubishi Power Europe:** April 2018 to July 2020
Position: Site Service Director
- **Mitsubishi Power Europe:** Aug 2015 to March 2018
Position: Project Support Engineer
- **Hansworth Limited:** Sept 2013 to Aug 2015
Position: Mechanical Engineer
- **Gamma Infra Prop. Pvt. Ltd.:** Sept 2010 to Sept 2011
Position: Lead Project Engineer
- **Kessel Engineering Works:** Feb 2010 to Sept 2010
Position: Graduate Trainee Engineer

Countries of Project Experience

Ireland, United Kingdom, Northern Ireland, Nigeria, Ghana, India, Germany, Morocco, Netherlands and Saudi Arabia

Publications

Bhupendra Khandelwal, Kshitiz Agarwal, Adam Karakurt, Vishal Sethi and Riti Singh (2012), **Preliminary Study of a Novel Gas Turbine Combustor Concept based on Hydrogen Synthesis from Kerosene Reformation**, AIAA

Project Experience

Independent Project Review

Scope/Description: SSE was developing a 157MW Open Cycle Gas Turbine (OCGT) peaking plant at Platin, County Meath, Ireland. As per the capacity contract this plant has a firm commercial operation date. Platin OCGT planning application was appealed by a third party and had a knock-on impact to the project delivery schedule. Due to the above mentioned reason, SSE Thermal had applied for an extension to substantial completion date section J.5.5 of capacity market code. With respect to market code J.5.6.3 Kshitiz was appointed as certified engineer to conduct independent review on behalf of regulation and issue certificate to regulators confirming any extension is directly attributed to appeal.

Added Value: Kshitiz used his knowledge and consulting with his network of subject matter experts, identified gaps and opportunities to improve in overall projects. This review saved overall around €21M+ of investment and 5 months on project schedule.

T-4 Capacity Remuneration Auction Application Evaluation, EirGrid, Independent Reviewing Authority, 2023 & 2024

Scope/Description: EirGrid and SEMO runs 4 years ahead capacity annual auctions to secure new generation for the maintaining Ireland's electricity production capacity. The work involved independent evaluation of the viability of the proposed projects / application from technical, delivery and economical standpoints. The engagement also involves presenting outcomes of the independent review and sharing a chair within the capacity review board as independent advisor.

Added Value: Kshitiz used his project development knowledge and different technological know-how to advise board if projects are feasible within given time frame, highlighting major risks from TSO and All-Island energy security of supply point of view. Its high-level impact (both opportunities and barriers) for sharing portion of critical national 2infrastructure with proposed projects.

Self-Generating (Power) Data – Centre viability assessment study, ServerFarm, Subject Matter Expert and Client Leader, 05/2024 to 06/2024

Scope/Description: The client is a data center developer looking to develop a new facility in London. As the electricity network is constraint within the region, the client was looking to make an informed decision on viability of the self-power generating data center facility. The study was conducted to understand viability of the independent natural gas-based fuel cells power generation at the site. The study includes techno-economic comparison of fuel cells verses other technologies, associated emissions, and footprints. Early development of L1 business case, project delivery pathways and permitting early opinion. Study of identified contractual route and other revenue streams for the projects which makes project more economically attractive.

Added Value: Kshitiz used his hands-on experience to identify key challenges and opportunities for project viability quickly. Collaborating with OEM's helped him gather the required data and information for the assessment. Using his skills in coaching and mentoring, he successfully guided the team to conduct high-level LCOE modelling.

HVO Market Appraisal Study for Power Generation in Ireland, EirGrid, Subject Matter Expert, 12/2023 to 02/2024

Scope/Description: The client is the Ireland's transmission operator looking to understand the value-chain, key risks, opportunities, and comment on the project specific considerations for using hydrogenated vegetable oil (HVO) as primary fuel for the power generation application. The client was looking to make an informed decision about the viability of such proposed project / HVO application and whether to share the portion of critical infrastructure or not. A Market Appraisal study was conducted to understand the value chain & other risks and opportunities to determine the possibility of using HVO in Ireland for Power Generation. The principal differences between HVO and FAME (Biodiesel), HVO properties, types of feedstocks and its availability for production of HVO, current and future forecasted HVO production capacity in Ireland and EU, its use in different sectors, review of EU and Ireland's directives governing production and demand of HVO in EU (including Ireland). Also, if it can support Ireland's emission reduction targets through Generation sector.

Added Value: Kshitiz's deep understanding of the source of raw material to HVO's final utilization as a biofuel without having adverse effects on other sectors played a vital role in conducting this study. Through paying attention to details of the interdependencies in various sectors, helped the client make an informed decision.

250MW Temporary Generation Pathfinder Study, Confidential, Advisor to Government and Project Verifier, 11/2023 to 02/2024

Scope/Description: The objective of the project was to help regulator and system operators to overcome short – term energy security shortfall by identifying and conducting techno – economic assessment of various solutions and defining high-level roadmaps to implement these solutions in short time frame. Study incorporates both technology and deployment path assessment. The project is critical for ensuring national energy security. This involves development and expediting procurement, identification of partners and technologies, carrying out risk assessment, ownership of assumption and their verifications, for client's management approvals.

Added Value: Kshitiz identified risks and opportunities to expedite the project delivery outlined initially. Further diving deep into the project enabled him to showcase to the NI First Minister, the techno-economic possibilities of other viable solutions for resolving their Energy Security of Supply proving beneficial for the people of Northern Ireland.

1000 MW OCGT Emergency Generation, ENOWA (Company of NEOM), Programme Director, 04/2023 to 12/2023

Scope/Description: Engagement constitutes leading program of 5 projects and 7 work packages. Kshitiz set-up the program execution model involving global team, moving main design centre from one office to another as the requirement of program and client shifted. Kshitiz with help Executive Sponsor of program established leadership team and managed different challenges came across both remotely and face-to-face. Programs constitute of strategic advisory to build NEOM's decarbonization pathway and technical delivery of the project's pre-construction, supporting client in procurement, navigating through their governance process. Working with global Jacobs and client team, Kshitiz led the project to lead direction, advisory and project management for the client. The objective of the project was to help NEOM to deliver approx. 1000 MW new reliable capacity in two phases and three 70MW off-grid power generation projects. Project is scheduled to be using Low carbon or zero carbon fuels (Hydrogen or Green Methanol) by 2028 and hence development project development, and engineering work considers provisions to facilitate the conversion in near future. This involves development and expedite procurement, identification of partners and technologies, carrying out risk assessment, ownership of assumption and their verifications, for client's management approvals.

Added Value: Kshitiz's expertise and relationship-building capabilities enabled Jacobs to secure multiple project portfolios, including strategic advisory and project delivery, which initially began as a small feasibility study. He excelled in managing client expectations in an unpredictable environment, a critical role he handled successfully. His dedication also led to the successful development of a local team in Saudi Arabia to efficiently facilitate ongoing project activities. He demonstrated to stakeholders the high level of collaboration between the global team and the client both remotely and on-site.

Minimum Generation Study – Review of NI Grid Code, SONI, Generation Subject Matter Expert - Verifier, 04/2023 to 09/2023

Scope/Description: SONI is looking for advise on changing the minimum generation (min gen) requirements and bringing it in line with technical requirements of modern generators while limiting the increase in energy costs (through constraints payment) and emissions. Engagement constitutes to assess the proposal and advise SONI on potential impact of modifying Grid code min gen requirements. Led market assessment of technological capability, other TSO's minimum generations and associated parameters and regulation dictating minimum generation capacity of conventional power plants.

Added Value: Kshitiz conducted a comprehensive gap analysis to identify discrepancies between policies, directives, codes & standards, and technological capabilities. He also consulted with key stakeholders about the required changes and mentored the team to adapt the PLEXOS software accordingly.

450 MW OCGT Temporary Emergency Generation, Confidential, Owners Advisor and Secondment, 04/2022 to 03/2023

Scope/Description: Engagement constituted secondment and advise to Minister for DECC and project national steering committee - working as a part of integrated team with the client, sub-contractors, and regulatory bodies. The objective of the project was to help people of Ireland to deliver 450MW new reliable capacity to be operated for maximum upto 5 yrs. The project is critical for ensuring Ireland's energy security. This involves development and expedite procurement (including agreement negotiations), identification of partners and technologies, carrying out risk assessment, ownership of assumption and their verifications, for client's management approvals. Lead OEM's capability and technological readiness assessment to deploy hydrogen in power plants this had feed into long term de-carbonisation pathways for this project.

Added Value: As a subject matter expert, Kshitiz advised the government body from ideation through project delivery, collaborating with various stakeholders at every stage. He also counseled the national steering committee formed for this fast-tracked project, helping to expedite its delivery.

Feasibility of Replacement of Diesel Generators with Hydrogen Powered Reciprocating Engines for Back – Up Power Application, Confidential, Verifier, 06/2022 to 09/2022

Scope/Description: The project was to conduct feasibility of replacement of existing diesel generators with Hydrogen Power Fuel Cells or Reciprocating Engine providing back up power to data centres. Part of the study is to conduct technology development assessment, technology comparison, conducting FMEA and development of conceptual design for both technologies. Kshitiz was leading study as Hydrogen Power Reciprocating Engine expert.

Added Value: Kshitiz used his relations across the globe to understand the different legislations to drive technological maturity assessment and hydrogen value chain assessment for the client to make an informed decision. He successfully identified the various possible solutions to retrofit the existing assets.

Feasibility of Hydrogen Production Co-located with Wind Farm, Northern Ireland, Foresight Group, Consultant, 02/2021 to 06/2021

Scope/Description: Engagement constituted working as a part of integrated team with the client, sub-contractors, and regulatory bodies. The objective of the project was to help customer to maximise their current asset revenues while addressing issues like curtailment and constraints. Kshitiz was leading the project while being responsible for the delivery of project from ideation stage to financial close. This involves development and management of project business plan, identification of partners and technologies, carrying out risk assessment, ownership of assumption and their verifications, development roadmap, procurement framework and carrying out initial feasibility study for client's management approvals.

Feasibility of Hydrogen for Demand Response and Back-up Power Application, United Kingdom, Confidential, Project Manager, 07/2020 to 07/2021

Scope/Description: Working as a Project leader, Kshitiz responsibility includes assessment and comparison Hydrogen Powered Reciprocating Engines Verses Fuel Cells for demand response and back-up power applications. The objective of project is to understand technological development of roadmaps, suitability of the technology for the defined application and to conduct high level economic assessment for both technologies. Kshitiz was leading the project while being responsible for the advising to customer and delivery of project. This involves development and management of project plan, stakeholder / OEM engagement and management, carrying out high level project and technological risk assessment, highlighting assumptions, understanding, and presenting technological development roadmap.

Portable heat storage device – innovative solution, Kasten, Founder, 07/2020 to 07/2021

Scope/Description: Working as a founder, Kshitiz responsibility includes market validation of idea, conducting market research, identification of early adopters, stakeholder management (from investors, early adopters, internal Board of Directors and teams. He was also supervising the development of technologies and iteration of development programme with respect to feedback and validation.

Development of BESS project co-located with CCPP, Republic of Ireland, Energia, Advisor and Solution Service Provider, 11/2018 to 07/2020

Scope/Description: Kshitiz was working as the point of contact between customer, OEM's group of companies and other stakeholders. Engagement starts at preparing agile scope of work, DOR and negotiating framework agreement. He was further worked as project leadership to support customer to develop the project, which include feasibility study and preparing conceptual design and conducting economic viability of the project at each stage, designing of the control system and operational philosophy of the entire plant (i.e., including both CCGT and BESS), procurement, risk assessment, drafting and negotiating contracts.

Conversion of existing One Single Shaft Gas Turbine Unit of CCPP to for Combustion of 100% Hydrogen, Netherlands, Vattenfall, Advisor to Client and Commercial Manager, 08/2017 to 07/2020

Scope/Description: The project was to convert existing 400MW CCGT unit from Natural Gas to Hydrogen combustion. Kshitiz had led the project as an OEM representative. The engagement involved the understanding aim and objective of the project with customer. Liaison between OEM's group of company, customer and partners, Development of work scope and agile roadmap and project research, development, and validation schedule. Negotiation and finalisation of commercial and contractual agreements between several parties. He had also helped customer to in achieving their board approval for the project and working with different stakeholders.

Year	Client	Project Name	Location	Project Role
2024-2025	Milipore Sigma	Sustainable Energy Strategy	USA	Subject Matter Expert
2024	SSE	Independent Project Review	Ireland	Independent Reviewing Authority
2023-2024	EirGrid	T-4 Capacity Auction Application Review (2 years)	Ireland	Independent Authority
2024	ServerFarm	Self-Generating (Power) Data – Centre viability assessment study	Ireland	Subject Matter Expert and Project Leader
2023-2024	EirGrid	HVO Market Appraisal Study for Power Generation	Ireland	Subject Matter Expert
2023-2024	Confidential	250MW Temporary Generation Pathfinder Study	Northern Ireland	Advisor to Northern Ireland First Minister through and Project Verifier
2023	ENOWA (Company of NEOM)	1000 MW OCGT Emergency Generation	Saudi Arabia	Senior Programme Manager
2023	SONI	Minimum Generation Study – Review of NI Grid Code	Northern Ireland	Generation Subject Matter Expert - Verifier
2022-2023	Confidential	450 MW OCGT Temporary Emergency Generation	Ireland	Owners Advisor and Secondment
2022	Confidential	Feasibility of Replacement of Diesel Generators with Hydrogen Powered Reciprocating Engines for Back-Power Application	Multiple locations globally	Verifier
2021	Foresight Group	Feasibility of Hydrogen Production Co-located with Wind Farm	Northern Ireland	Consultant
2020-2021	Confidential	Feasibility of Hydrogen for Demand Response and Back-up Power Application	United Kingdom	Project Manager
2020-2021	Kasten	Portable heat storage device – innovative solution	Ireland	Founder
2018-2020	Mitsubishi	Future Net-Zero Products & Services Development Programme	Ireland	Task Force Leader
2018-2020	Energia	Development of BESS project co-located with CCPP	Ireland	Advisor and Solution Service Provider
2017-2020	Vattenfall	Conversion of existing One Single Shaft Gas Turbine Unit of CCPP to for Combustion of 100% Hydrogen	Netherlands	Advisor to Client and Commercial Manager
2016	Energia	CCPP minimum generation reduction	Ireland	Subject Matter Expert and Project Manager
2015-2020	Mitsubishi	Multiple thermal power station outages	Multiple locations in Europe	Programme Manager
2019	Mitsubishi	Re-evaluation and Enhancement of Part-rotation Strategy for various Power Plants	EU	Project Manager
2019-2020	Mitsubishi	Optimisation and Tech-economic Assessment of Digital Twin (TOMONI) capability	United Kingdom & Ireland	Site Service Director
2016-2018	SSE Thermal	Product Development for Operational Flexibility and Performance Enhancement	Ireland	Project Support Engineer

2015-2018	Energia	Product Development for Operational Flexibility and Performance Enhancement	Ireland	Project Support Engineer
2018	Mitsubishi	500 MW Contractual (Liquidated Damages) Conflict Resolution	Ireland	Site Service Director (Chair)
2014-2015	Hansworth Ltd.	Development 2.8 GW CCPP and CCHP	United Kingdom & Nigeria	Mechanical Engineer
2014	Rockson Engineering Ltd.	Off-shore Oil Rig Rotating Equipment Outage	Ivory Coast	Project Support Engineer
2013-2014	Rockson Engineering Ltd.	Gap Assessment between existing Simple Cycle and Proposed Combined Cycle Power Plant	United Kingdom & Nigeria	Mechanical Engineer
2010-2011	Gamma Infra Prop Pvt. Ltd.	EPC of 225 MW CCPP	India	Lead Project Engineer