

ITPEnergised

Trusted Technical Advisor

Hydrogen Capability

“We believe passionately in the world’s transition to net zero. We are a team of trusted technical advisors who meet and exceed our clients’ aspirations.”



Summary



1 Locations



- Headquartered in Edinburgh.
- UK Offices: London, Bristol, Leeds, Edinburgh, Glasgow, Aberdeen.
- Sister companies in Australia and India.
- International Offices/Joint Ventures: Madrid, Buenos Aires, Lisbon, Canberra, Delhi.

2 What we do



- ITP Energised is a leading technical advisor working in the UK and overseas.
- We provide expert, pragmatic and commercially focused advice.
- We offer a range of renewable energy, natural resources, environmental, engineering and technical advisory as well as asset management services.

3 Our approach



- We are independent and technology and solution agnostic.
- Client focused, developing long term relationships.
- A people business.
- Technically excellent, with a focus on adding value.
- Technology-enabled
- “More than a consultancy”.

Trusted Technical Advisor



In numbers

ITP Energised



> 75% repeat business



Helped 190 clients achieve carbon targets in 2020



> 65 countries, > 30 developing countries



> 10 locations globally



Directly driving 7 of 17 UN SDGs

*7. Clean energy 8. Economic growth 9. Industry and Infrastructure
10. No inequality 11. Sustainability 13. Climate action
17. Partnership*



Our motivated staff are key to us and our clients



Delivered > 220 RE & storage projects in 2020



Commercially minded & technology-enabled

Passionate about net zero!



Our passion



We deliver from a position of passion in all we do:

“We’re passionate about net zero. We are a team of industry leading trusted technical advisors who aim to meet and exceed our clients’ aspirations, targeting growth markets and clients.”

Our chosen clients comprise like minded people who represent funds, lending banks, private equity, utilities, blue chip corporates, developers, oil & gas companies, regulators, government and network companies across the world who work tirelessly to transition our world to net zero.

We work across the lifecycle of projects for our clients leading to the delivery of portfolios across sectors leveraging out key areas of expertise:

Sectors:

- Corporate, Industrial & Manufacturing
- Property & Urban Regeneration
- Onshore Renewables & Storage
- Offshore Wind & Marine Renewables
- Oil & Gas

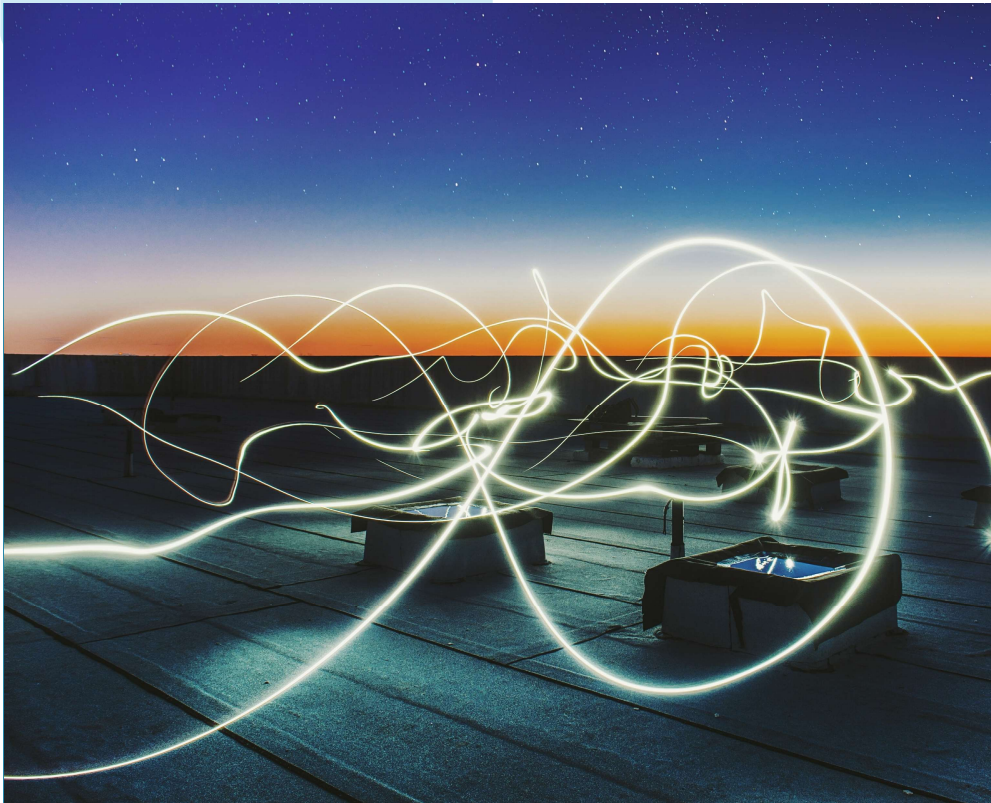
Expertise:

- Advisory
- Environmental Planning
- Technology



Why we are different

Differentiation



We think outside the box to help you transform your business:

- Understanding your bird's eye view on wider goals and objectives
- Bringing our passion, commitment and focus to your projects
- Delivering high quality, on time, on budget projects
- Bringing innovation and problem solving solutions
- Being confidently curious in all that we do
- Becoming an extended part of your inhouse team and advisors
- Understanding the commercial implications of technical discovery
- Challenging the status quo where it adds value – revenue, cost, time
- Thinking long term – pipeline, portfolio, platform - not just one project



How we work with you

Engagement



We think win-win and full project life cycle to help our clients grow:

- Sector leads identify overall megatrends in sector scope
 - Market size, growth and behaviour in short and medium term
 - Strategic actions of participants
 - A commercial view of the implications of sector trends
 - Key regulations that drive investment opportunities and risks
 - Thought leadership across emerging topics of client interest
 - Activate networks to provide multidisciplinary outcomes
 - Work with sister companies to provide international coverage
- We are then better placed to understand your wider goals
- We join the dots of when other ITPE services may be needed for you
- And close gaps in expertise needed with our comprehensive network
- We also bridge relationships between clients to build net zero momentum where needs can be met in a win-win environment

Our expertise in hydrogen



Technical



Technical key expertise

- Needs / yield assessment for prospective consumers and producers; local market assessment
- Grid condition, potential upgrade requirements and connection design
- Project layout, process flow and concept design visualisation
- Hazard identification and project risk register development
- Hydrogen delivery options analysis



Our expertise in hydrogen



Environmental



Environmental key expertise

- Energy and carbon balances and scenario analysis
- Production and energy generation site options screening for red flag constraints and fatal technical flaws
- Lifecycle analysis (streamlined to climate effects)
- Identification and execution of planning and environmental permitting requirements



Our expertise in hydrogen



P3M



Project, Programme, Portfolio & Development Management

- Single point of contact for multi-disciplinary team
- Efficient management of project team and stakeholders
- Management of risk and programme, change and communications etc, within Project Execution Plan
- Holistic approach
- Continuity through whole lifecycle





Our hydrogen projects

United Kingdom

Bruichladdich Distillery (Ongoing)

ITP Energised consortium has won the UK government green distilleries funding competition with an innovative hydrogen energy centre proposal for the Bruichladdich distillery. ITP Energised, in a consortium with Protium Green Solutions, has received more than £70,000 in funding to complete a feasibility study on incorporating innovative hydrogen combustion technology into the Bruichladdich Distillery. Part of the BEIS Net Zero Innovation Portfolio (NZIP), the project complements our ongoing work with Bruichladdich assessing the application of alternative fuels at the distillery.

Confidential green aviation project (Ongoing)

ITP Energised is involved in this confidential project to develop sustainable infrastructure for hydrogen fuel cell aircraft.



Our hydrogen projects

United Kingdom

Confidential food & beverage sector client (2020)

ITPEnergised was part of an integrated team to develop a feasibility study for the supply of green hydrogen to one of the UK's largest food and beverage sector premises. Our work included energy and GHG modelling for current and future usage cases, hydrogen demand modelling and hazard identification.

Confidential Solar Sites for green hydrogen x 3 (Ongoing)

ITPEnergised is carrying out fatal flaw analysis and mapping of environmental constraints for 3 solar sites, 2 in England and 1 in Wales that will be designed ready for green hydrogen production. The work considers risks and impacts from electrolyser and storage facilities as well as the solar PV development.



Our hydrogen projects

United Kingdom

Technical training for National Grid personnel

The ITP Energised team has extensive technical training experience, developing and delivering targeted site-specific training to National Grid site personnel, country wide.

Operations and Maintenance technicians / engineers require skills training in how to work with hydrogen safely as a minimum requirement; training is also required to effect culture change and gain buy in on the “why”.

Environmental permitting and environmental risk management

The team has worked with Johnson Matthey at their installation in England manufacturing hydrogen fuel cell components.



Our hydrogen projects

Australia

Large scale hydrogen storage in vertical shafts (Ongoing)

ITP Thermal, part of the ITP Energised Group, working together with Abergeldie Complex Infrastructure are progressing a business initiative to develop and commercialise a low-cost approach to storing large volumes of hydrogen. This technology takes advantage of established mining techniques and is based on the concept of vertical shaft blind boring. The scope of work is centred on the advancement of the detailed design of a pilot storage system and its commercialisation.

Review of ACT gas laws and legal frameworks (Ongoing)

The report was prepared for the Australian Capital Territory (ACT) Environment, Planning and Sustainable Development Directorate in collaboration with Moulis Legal. It provides an analysis and review of ACT gas laws and legal frameworks to determine the applicability to support hydrogen safety, hydrogen supply chain development (production, transportation, storage, use), and impacts on consumers and the broader community. It also identifies the regulatory gaps and barriers to support hydrogen safety, hydrogen supply chain development.



Our hydrogen projects

Australia

Green Gas Trading - a tool for a zero emissions ACT (2020)

This report was commissioned by the ACT Environment, Planning and Sustainable Development Directorate. It provides an analysis and review of Green Gas (specifically, biogas and renewable hydrogen) trading mechanisms and their applicability in the ACT.

Techno-economic review of distributed renewable ammonia production (2019)

The Grains Research and Development Corporation commissioned ITP to undertake a study to analyse the techno-economic feasibility of distributed renewable ammonia production from Green hydrogen. It provides technology and cost overviews and resulting levelised costs of renewable ammonia for conditions pertinent to grain growing regions in Australia.



Our hydrogen projects

Australia

Renewable Energy Options for Industrial Process Heat (2019)

The Australian Renewable Energy Agency (ARENA) commissioned ITP in conjunction with pitt&sherry, the Institute for Sustainable Futures, Sustainability Advice Team and Beyond Zero Emissions to analyse the opportunities for industrial users to switch to renewable energy alternatives to provide process heat. ITP demonstrated technical subject matter expertise in renewable hydrogen as a renewable energy technology option for process heat.

Comparison of Dispatchable Renewable Electricity Options in Australia (2018)

The Australian Renewable Energy Agency (ARENA) commissioned a team led by the ITP working with The Institute of Sustainable Futures and ITK Consulting to examine the various options for providing dispatchable renewable electricity generation. ITP investigated hydrogen storage as an option for competitive dispatchable energy storage when integrated with variable renewable generation and identified a pathway of integration of hydrogen production with the national electricity market.



Our hydrogen projects

Australia

Hydrogen Re-fuelling and Pipeline Injection Regulatory Overview Draft Risk Register (2018)

ITP was commissioned by the ACT Environment, Planning and Sustainable Development Directorate to provide an overview report on hydrogen re-fuelling and pipeline injection regulation and risks. ITP demonstrated internal subject matter expertise on the hydrogen sector, in particular technical risk assessment and mitigation.

Hydrogen Research & Development in South Australia (2018)

ITP was commissioned by the Chief Scientist in the Government of South Australia to provide a public report on existing hydrogen R&D capability in South Australia and opportunities to maximise this capability given local, national and international expertise and current and future hydrogen project and industry developments.



Our hydrogen projects

Australia

Hydrogen Consulting Services for ACT Government (Panel Engagement 2017-18)

ITP was retained by the ACT Environment, Planning and Sustainable Development Directorate to provide a range of expert advice in relation to hydrogen consulting reviewing material and concepts put forward by hydrogen proponents; identifying and managing technical risks associated with hydrogen activities; hydrogen activity decision making, and maximising opportunities for the ACT, and optimising the demonstration value of hydrogen activities in the ACT. Through this engagement, ITP demonstrated internal subject matter expertise on the hydrogen sector. Services included attendance at meetings as expert adviser; advice on global hydrogen R&D developments as relevant to ACT and facilitation of risk management/stakeholder workshops.



Our expertise – associated services

Corporate advisory



ESG & Sustainable Development and Finance

- ESG strategy and performance
- Impact investing
- Stakeholder engagement
- Carbon strategy
- Compliance and diligence
- TCFD alignment
- Benchmarking (CDP, SDGs)
- GHG reporting and verification
- Programme management
- Capacity building and training



Energy and Low Carbon Transition

- Energy management system design and auditing
- Energy and carbon permitting
- Decarbonisation and net zero strategy planning
- Technical and commercial feasibility assessments
- On-site energy generation feasibility
- Energy Performance Certificates
- Behavioural change programmes



EHS, Permitting & Compliance

- Applications, variations and surrenders
- Emissions monitoring and assessment
- Air Quality modelling (ADMS, Aermid, Puff)
- Environmental Management Systems
- Regulator and stakeholder liaison
- Compliance support
- Improvement conditions



Asset Management & Technical Due Diligence

- Technical asset management
- Financial asset management
- Technical due diligence
- Technical advisory and Client's Engineer
- Solar design



Air Quality & Acoustics

- Odour and Noise monitoring
- Modelling and interpretation
- Liaison with stakeholders
- Odour and Noise control and abatement
- Best Available Techniques assessment and justification
- Cost benefit analysis
- Private nuisance support

Trusted Technical Advisor

Our expertise – associated services



Environmental Planning



Environmental & Social Impact Assessment

- Constraints assessments
- Feasibility, screening, scoping
- ESIA project management
- Regulatory consultation
- Technical disciplines
- Stakeholder engagement
- Public inquiry
- Expert witness



Ecology & Ornithology

- Habitat and botanical survey
- Preliminary Ecological Assessment
- Specialist species surveys
- Biodiversity enhancement
- Habitat management plans



Construction Environmental Management

- Licensing support
- CEMP
- Environmental monitoring
- Habitat management
- Environmental clerk of works
- Ecological clerk of works



Flooding & Hydrology

- Flood risk assessment
- Hydrological assessment
- Peat management
- Surface water management
- Groundwater Dependent Ecosystems

Trusted Technical Advisor



Our expertise – associated services

Technology



Engineering

- Technology review
- Engineering review of systems design
- Substation site selection and routing designs
- Cable design including dynamic loading and asset reliability
- Substation layout design
- Grid connection concept
- Micro grid concept costing
- Private wire design



Power Systems

- Load flow studies and reactive power capability, compensation equipment specification and optimisation
- Short circuit (fault level) equipment rating
- Transient network strength studies and stability (SCR, weak grid)
- Electrical losses assessment and design optimisation
- Grid Code compliance tests, studies and model validation
- Cable rating, including offshore dynamic cable rating
- Network constraint modelling



Development Project Management & Grid Services

- Project design development and management
- Site finding and resource assessment
- Grid application preparation, support and due diligence
- Network connection costing
- Procurement support
- Programme management



Regulation Services

- Licensing, exemptions, regulatory requirements, metering systems, obligations and arrangements.
- Grid connection costs
- System charges (TNUoS, GDUoS)
- Balancing charges (BSUoS)
- Transmission loss multipliers, benefits and credits, underwriting and security requirements.
- Charging arrangements for transmission and distribution connected projects.
- Provision of consultation briefings and responses to help our clients be heard and protect their projects.

Trusted Technical Advisor



Client Testimonials

What clients say about us

- “Cooperative and friendly team” – BayWa r.e.
- “Excellent work from the team getting this application submitted” – Scottish Power Renewables
- “Delighted by work / proactivity” – Scottish and Southern Energy
- “Amazing job all, thank you for never dropping the ball, you have managed the application incredibly ” – 3R Energy
- “Thanks and well done on successful completion” – Alpha Real Capital
- “Very diligent, logical and thorough” – Orkney Islands Council
- “ITPE are our go to a trusted advisor for technical input on transactions.” - Major UK Law Firm
- “I’ve been very impressed with ITPEnergised and the level of quality consultants and professionals they employ and use to provide technical information and project management. It’s apparent that the people that work for the organisation are motivated and incentivised to do a good job, which is key to the success of such a company.” - International renewables energy client



info@itpenergised.com

ITPEnergised Group offices in:

Bristol, London, Edinburgh, Glasgow, Aberdeen, Lisbon, Madrid, Delhi, Beijing, Canberra and Auckland

Onshore Renewables & Storage | Offshore Wind & Marine Renewables
Corporate, Industrial & Manufacturing | Property & Urban Regeneration
Oil & Gas

itpenergised.com

