



Getting your Decarbonisation Strategy on Track

Be ready for upcoming
IETF Funding



Today's Speakers



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About IES

Home to the largest building physics analytics team in the world



29

Years of building
analysis



20,000+

Software users



75,000+

Projects per year



>1,000,000

Buildings



40+

Power stations
prevented



Audience Poll

To what extent is decarbonisation
a priority for your business right
now?

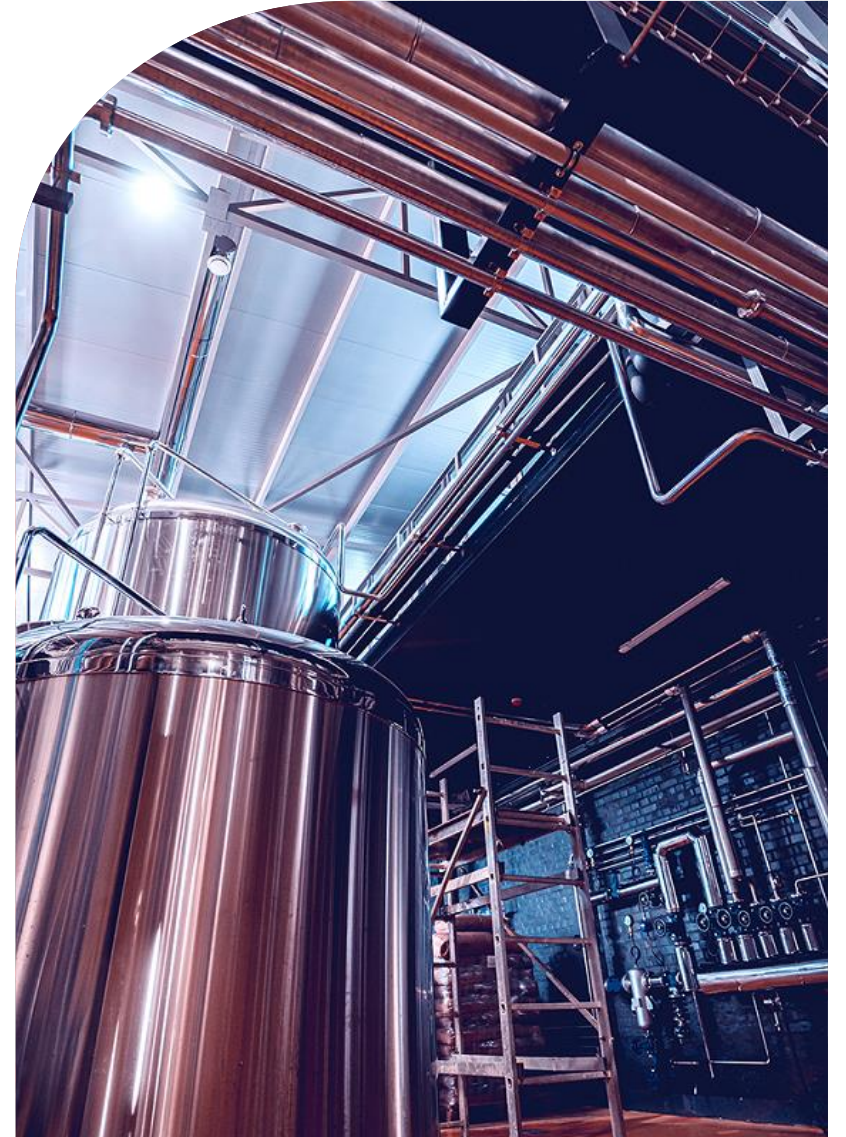


Achieving Net-Zero Manufacturing

- Manufacturing and industrial sector accounts for one-fifth of global CO2 emissions
- Complex challenge - high energy sector with multiple production lines, data sources and systems to consider, alongside the factory buildings
- Over 70% of manufacturers now use technologies such as data analytics and cloud computing within their processes
- However, current uptake is largely focused upon decarbonising factory processes and supply chains and often fails to take account of the factory buildings - a major contributor to the sector's overall emissions
- Volatile energy prices and energy security concerns driving uptake of energy efficiency and decarbonisation approaches
- Lots of funding opportunities available

Latest Funding Announcements

- **17th Nov** - UK Government pledges £4.5 billion in funding for British manufacturing available from 2025 through to 2030 - encompasses Net Zero transition opportunities
- **23rd Nov** - EU Commission Innovation Fund (IF23) opens with a record budget of €4 billion to support deployment of decarbonisation technology - includes €1.4 billion to strengthen industrial manufacturing capacity, technology leadership, and supply chain resilience
- **23rd Nov** - Industrial Energy Transformation Fund (IETF) Phase 3 consultation response is published by UK Government - £185 million available from 2024





What is the Industrial Energy Transformation Fund?

- IETF supports the development and deployment of technologies that enable businesses with high energy use to transition to a low carbon future
- The UK government announced £315 million of funding in the 2018 Budget, available up until 2027. Phase 1 & 2 competition windows have already concluded
- Managed by the Department for Energy Security and Net Zero (DESNZ) and applies to sites located in England, Wales and Northern Ireland
- IETF Phase 3 will launch in January 2024 providing £185 million in funding

Eligible Project Types

- **Studies** - feasibility and engineering studies to investigate energy efficiency and decarbonisation projects prior to making an investment decision
- **Energy efficiency** - deployment of technologies to reduce industrial energy consumption
- **Deep decarbonisation** - deployment of technologies to achieve industrial emissions savings

Funding applied for	Minimum threshold per application	Maximum threshold per project
Energy efficiency deployment projects	£100,000	£14 million
Deep decarbonisation deployment projects	£100,000	£30 million
Engineering studies	£50,000 (total eligible cost)	£14 million
Feasibility studies	£30,000 (total eligible cost)	£7 million

*Minimum threshold for deployment project applications for SME will be lowered to £75,000 for Phase 3.

IETF Competition Windows

Phase Period	Window Open	Window Close	Funding Decision	Approximate Budget Allocation
Phase 2: Spring 2022	January 2022	April 2022	Sept/October 2022	£30m for DD £15m for EE £15m for studies
Phase 2: Summer 2022	May 2022	September 2022	February/ March 2023	£25m for DD £15m for EE £15m for studies
Phase 2: Autumn 2022	October 2022	January 2023	June/July 2023	£20m for DD £10m for EE £15m for studies
Phase 3: Spring 2023	January 2024	April 2024	TBC	TBC
<p>A further, final Phase 3 competition window will launch in Summer 2024. Phase 3 applicant guidance will be published in January 2024.</p>				

Audience Poll

Have you ever applied for grant funding before?

IETF Phase 3 - Key Updates

- Scope of feasibility studies expanded to allow for option analyses - ability to run techno-economical options appraisals with high-confidence and real data is a key benefit of IES solutions
- Lower Technology Readiness Level eligibility for energy efficiency (EE) deployment projects. Will also allow waste heat recovery schemes in non-process demands and export to Heat Networks
- Applicants for deployment grants that exceed £5 million will need to provide a feasibility or Front-End-Engineering Design (FEED) study to support their application
- Minimum grant threshold for deployment projects will be lowered from £100,000 to £75,000 for SMEs only
- Eligible companies with industrial sites located in England, Wales or Northern Ireland but registered in Scotland are now able to apply

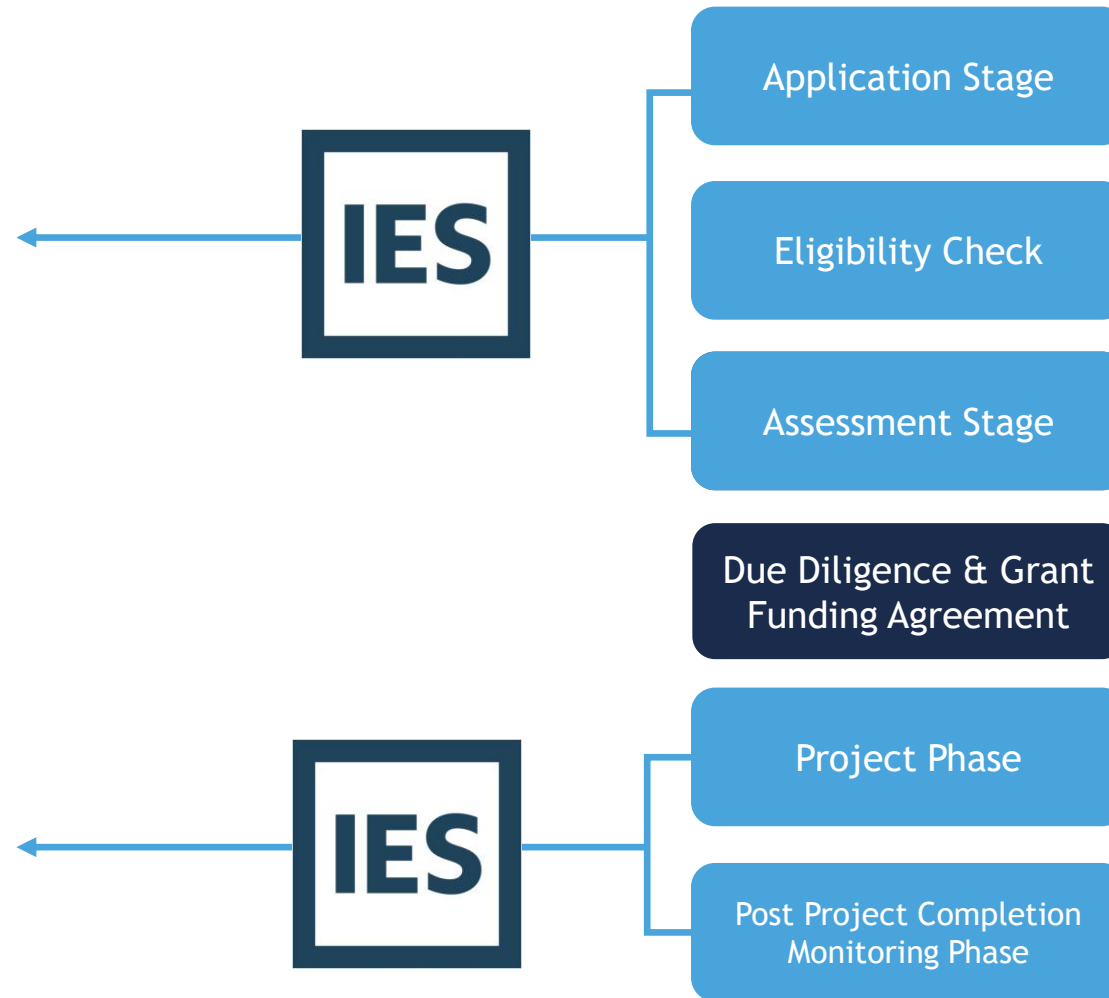
Future of the Industrial Energy Transformation Fund

Summary of Responses to the Consultation
and the Government's Response

Industrial Energy Transformation Fund (IETF) Support Opportunities

- Can be part of Project Partner Team
- Assist with application form
- Carry out **Data-Driven Technology analysis for your site in line with IETF Requirements**

- Assist in meeting IETF Requirements at deployment and post-deployment stage



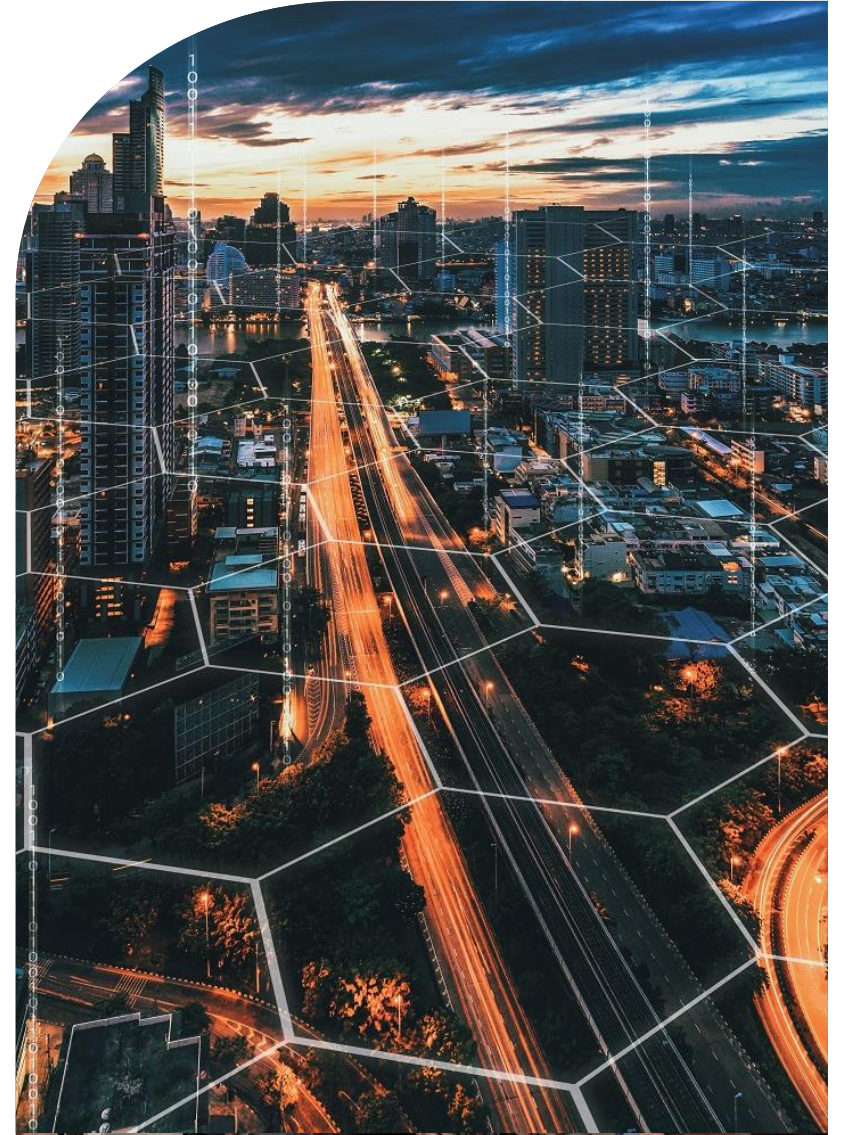
Feasibility Studies

- IES can assist in carrying out feasibility studies using our dynamic digital twin technology
- Ideally suited to options analyses now permitted under IETF Phase 3
- We can deliver:
 - Recommendations with associated energy, carbon and cost estimates
 - Physics-based simulations that deliver data you can trust
 - Holistic assessment encompassing your entire facility
 - Modelling and simulations that can be further utilised on capital projects
 - Undertake cost appraisals and validation of any existing feasibility study you may have



Monitoring & Verification (M&V)

- Successful deployment projects under IETF must produce a Monitoring & Verification (M&V) plan to demonstrate results achieved and benefits of the scheme
- Data supplied to DESNZ for five years following end of project, at intervals of at least every 6 months
- Applicants must clearly identify how data will be measured & collected
- IES ideally positioned to support M&V studies through our digital twin technology and consultancy offering
- Our services adhere to the IPMVP (International Performance Measurement & Verification Protocol) using calibrated simulation





Our Approach

Simplified data management, organisation and visualisation

- Access entire operational data for complex processes in one place from anywhere

Digital Twin of processes and buildings

- Virtual copy of facility to analyse and understand future operations without physically changing anything

Simulation & analysis of changes to process layouts, behaviours, & technologies

- Reduce energy consumption and improve energy efficiency of operations and buildings
- Analyse and understand impact and benefit of potential local energy production
- Simulate the potential for waste heat recovery and reuse
- Assess and compare decarbonisation investments/strategies

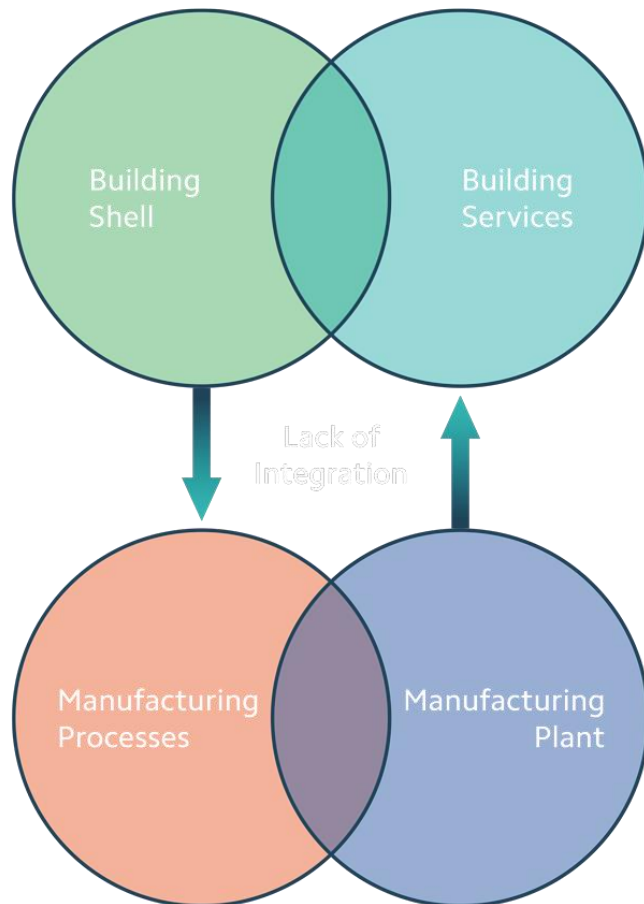
What is a Digital Twin?

- A virtual replica of a building and processes which gathers real data and uses physics-based simulations to respond and behave in the same way as its real-world counterpart
- Allows you to analyse how your buildings and associated infrastructure are performing now, gain insights into how they should be performing and explore different scenarios to understand the impacts of future changes
- Provides investment-grade decision support information to improve asset performance, influence future process and building designs and retrofit to reduce investment risks

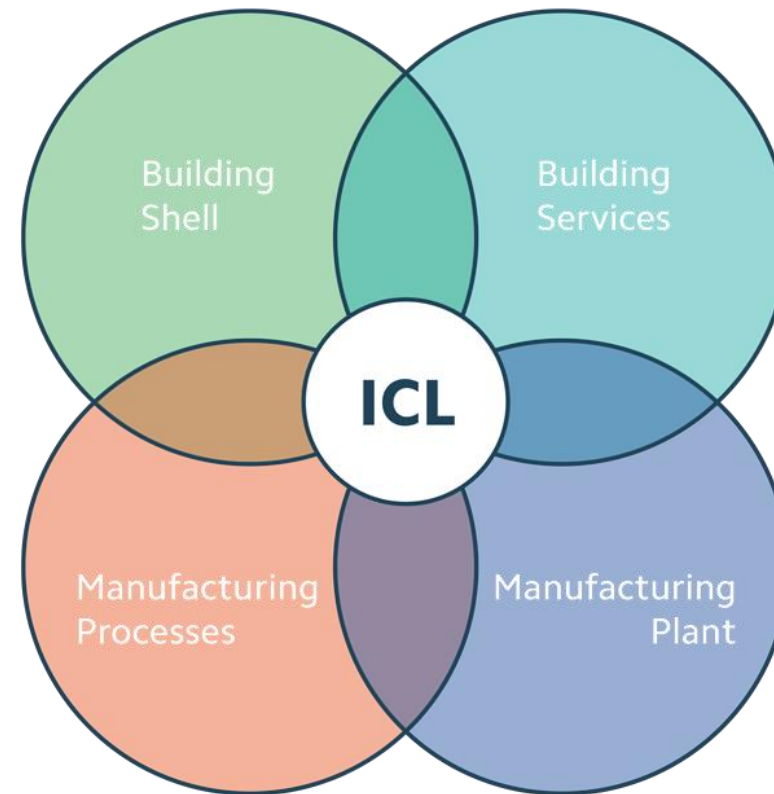


Holistic Approach to Production Modelling

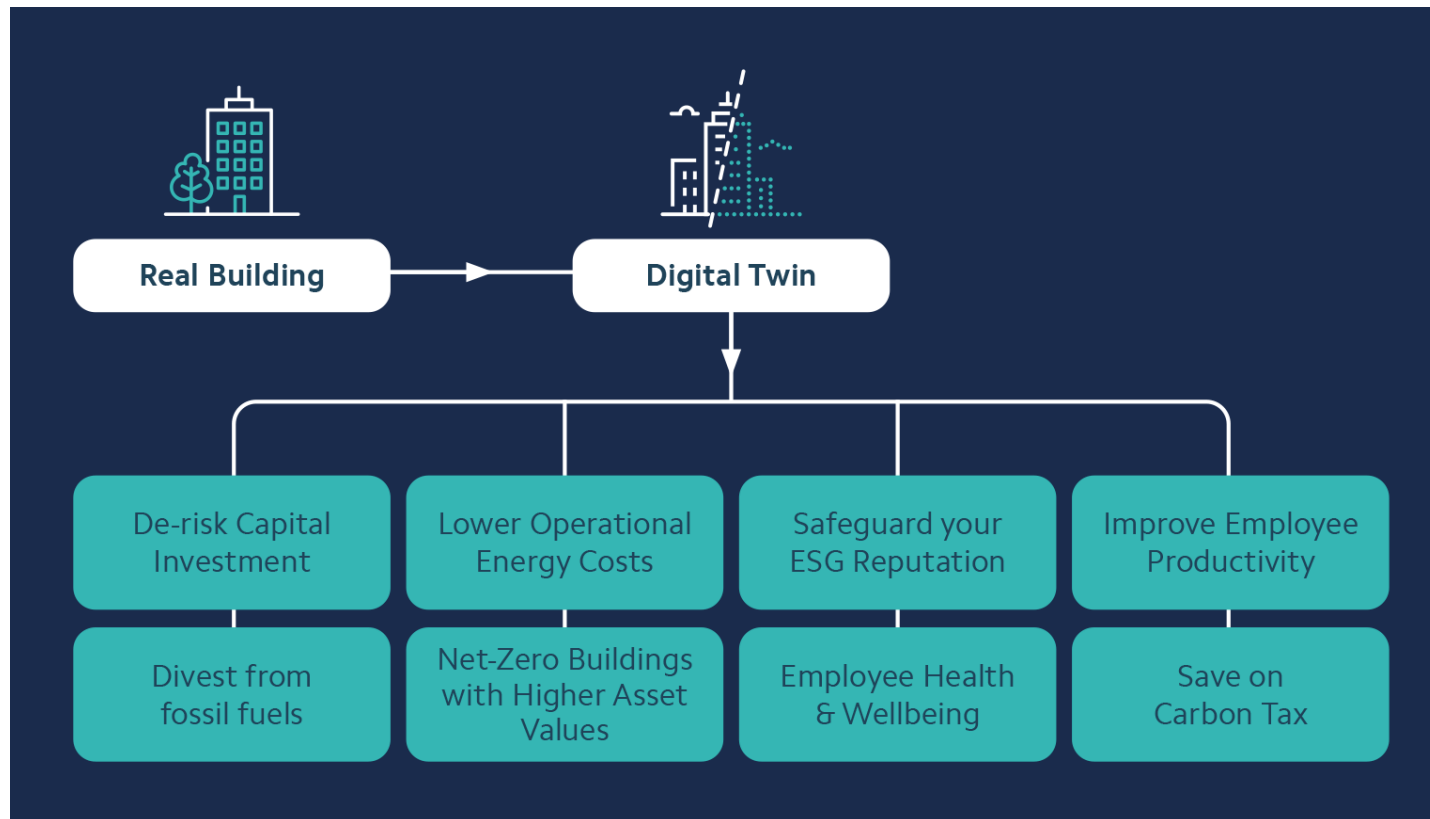
Key Issue:



Solution:



Our Digital Twin Solution



- The IES Digital Twin is a detailed, calibrated, evolving digital representation of your buildings, processes, infrastructure, energy usage and waste generation
- It's a Lifetime Digital Asset for monitoring, energy cost risk reduction, ESG reporting, carbon reduction and net-zero investment road-mapping

Direct Engagement and Partnering Options

- IES Consulting can engage directly with your organisation and your energy and sustainability teams
- IES Consulting can engage with your existing energy and sustainability partner organisations to enhance their offerings to you, working in collaboration to deliver improved results

Example partner companies:



Foster + Partners



Funded by
Innovate UK



Live Demonstration



Audience Poll

If you have applied for previous grant funding, was your application successful?

Other Funding Opportunities Linked to R&D

- IES is an experienced manager of collaborative funded research projects
- Collaboration with industry partners, academic institutions and research organisations
- Developing new business opportunities, integrating state of the art research and enabling third party validation of new technology
- We are always looking for great pilot sites (buildings and industrial) where we can demonstrate novel technologies and applications



IES R&D Credentials

At IES we continuously invest in R&D to ensure our solutions remain pioneering and innovative.

The last 12 years:

- Participation in 60 R&D grant-based projects
- Coordination of 18 R&D grant-based projects
- Collaboration with more than 600 R&D partners

We are currently participating in 25 live R&D projects.





SusTainable AiRports, the Green heArT of Europe

Start date: 01 November 2021
End date: 31 October 2026

Total grant: €24,816,116
27 partners

<https://www.greendealstargate.eu/>



Supporting new Opportunities for Waste Heat And cold valorisation Towards EU decarbonization

Start date: 01 June 2019
End date: 30 November 2022

Total grant: €3,397,497
21 partners

<https://sowhatproject.eu/>



These projects have received funding from the European Union's Horizon 2020 research and innovation programme



Sun coupled innovative Heat pumps

Start date: 01 October 2018
End date: 30 September 2023

Total grant: €8,999,815
23 partners

<https://sunhorizon-project.eu/>



intelligent Building Energy Assets Control for Comfort, Energy and Flexibility Optimisation

Start date: 01 June 2020
End date: 30 November 2023

Total grant: €3,724,497
10 partners

<https://ibecome-project.eu/>



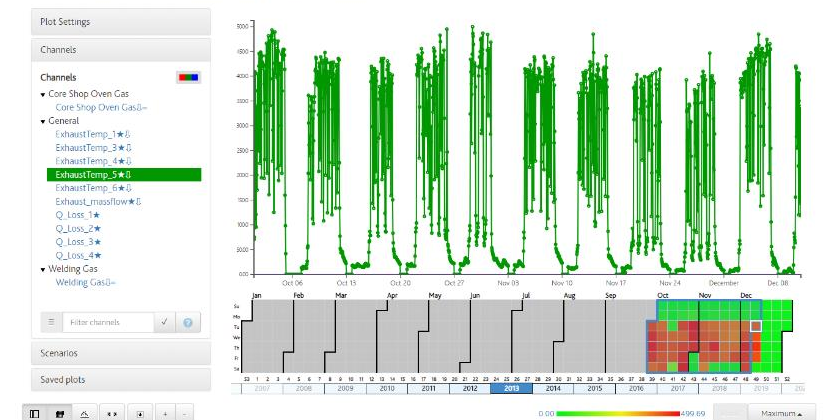
These projects have received funding from the European Union's Horizon 2020 research and innovation programme

Case Study: Distillery in Italy

- Data collected from utility bills mapped to process and profile created
- Digital Twins used to model numerous scenarios to improve the effective and efficient running of distillery production processes
- Optimal scenarios for both technical and economic requirements simulated, chosen and actioned
- **Baseline: High waste heat, high consumption of heat (gas), high electricity consumption (electricity grid) all identified**
- Immediate energy cost saving of **5% (€ 30,000)** identified by changing waste heat management processes.
- ROI for initial Digital Twin assessment within one financial year.
- Net Zero roadmap identified



Data Plot - Demo - 2013-10-01 to 2013-12-11



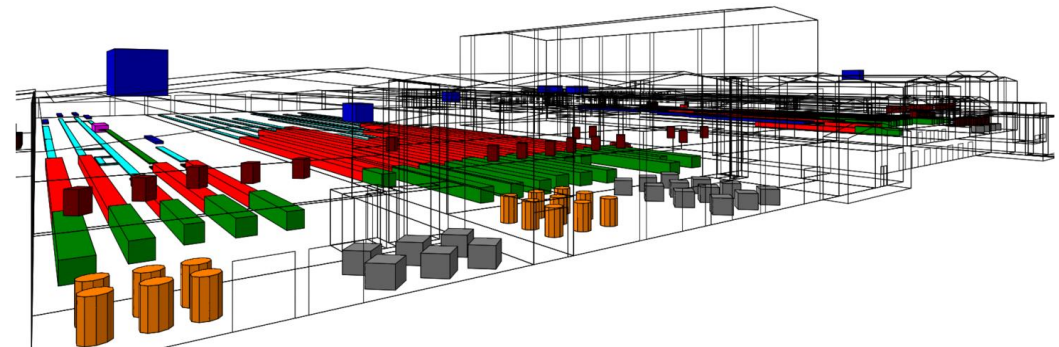
This project received funding from the European Union's Horizon 2020 research and innovation programme

Case Study: Food Manufacturer, Spain

IES was asked to perform the following:

- Create model of factory and processes
- Import data & create profile of energy demand from different processes and systems
- Create electricity cost tariff planner for financial year
- Run analysis for possible load shifting
- Change times equipment is used to move energy consumption to cheaper hours

**Results: Immediate 6 month savings = €18,111:
Initial ROI under 1 Year**



Call

Deadline



LIFE-2023-CET-BUSINESS: Supporting the clean energy transition of European businesses

16/11/2023



TRI 4: Efficient zero emission Heating and Cooling Solutions

22/11/2013

TRI 6: Integrated Industrial Energy Systems

Those are annually recurring calls with a deadline in mid-November

Call

Deadline



HORIZON-CL5-2024-D3-01-06: Innovative applications/integration of geothermal heating and cooling in industry

16/01/2024

HORIZON-CL5-2024-D3-01-12: Energy Management Systems for flexibility services

16/01/2024

HORIZON-CL4-2024-TWIN-TRANSITION-01-32: Optimisation of thermal energy flows in the process industry (Processes4Planet partnership) (IA)

07/02/2024

HORIZON-CL5-2024-D4-01-03: Alternative heating systems for efficient, flexible and electrified heat generation in industry

18/04/2024

Conclusion

- IES Digital Twin technology and services support analysis of different energy efficiency and decarbonisation scenarios to empower investment grade decisions with confidence
- Experienced team and trusted tech that is ideally positioned to support feasibility studies under IETF Phase 3 and other relevant funding schemes
- Lifetime digital asset can also support ongoing Monitoring & Verification (M&V) required under these schemes
- Strategic collaborative partnerships can be direct, or via an existing partner
- Get in touch to discuss opportunities to collaborate

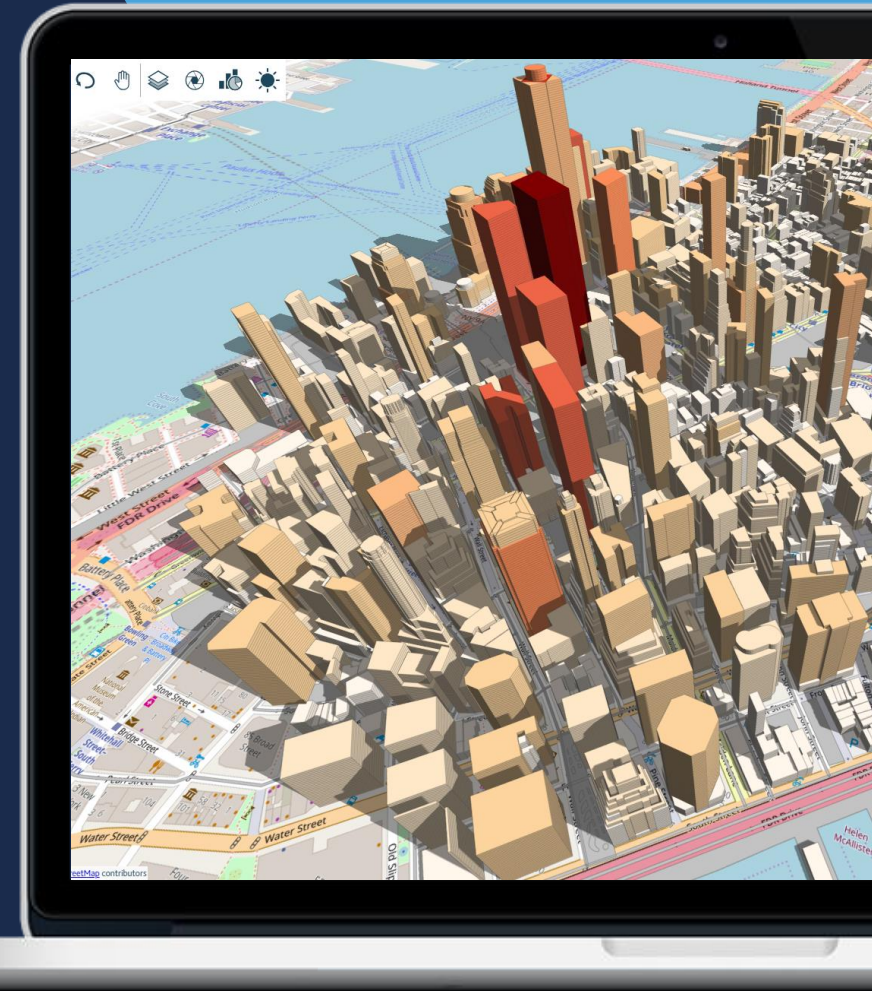
Discover our ICL Digital Twin Tools

Schedule your 1-to-1 Tailored Demo

Book a tailored 1-to-1 demo to discover how the full range of our ICL Digital Twin Tools can support you and your business' needs.



Schedule
Your Demo





Thank You

Any Questions?

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