KNOWLEDGE PROPOSAL

Proposer Name and Organisation: Shabna J Hayes – CIBSE Data Centre Special Interest Group

Topic/ Title: “**Zero Generation strategies across data centres from a design and Uptime Institute perspective and the client uptake”**

Date received:

1. Justification: Why is this guidance needed?

Generators for as long as we know, have been a critical part of the Electrical Infrastructure supplying Data Centres. Engine generators are a mission-critical component for data centres, ensuring resilience, stability, and business continuity.

With environment regulators and operational limitations and initiatives for greater sustainability putting more pressure on clients to clean up their infrastructure. The drive for carbon neutral initiatives has led research and technical innovation to seek the alternative cleaner power supplies.

There is therefore the need for best practice and guidance to provide a technical memorandum to ensure designs are adopting innovation and technology whilst maintaining a consistent design strategy towards sustainability and environmental challenges.

1. Format: What format will the guidance take?

|  |  |
| --- | --- |
| [x]  | a traditional publication with words and diagrams to be produced for CIBSE’s Knowledge Delivery Platform, and in PDF |
| [x]  | a data set |
| [x]  | a Digital tool or software application |
| [x]  | something else (please elaborate) Technical guidance and collaboration  |

1. Content: If guidance, please list proposed chapter and section headings. If a data set, digital tool, software application, or something else, please detail your proposed plan.

Development of CIBSE Guides and Recommendations

1. Readership: Who is likely to read this guidance?

Data centre Special Interest Group members and the wider membership. Also, the Data Centre community.

1. Authoring: Are authors in place? If so, please list them below.

No authors are currently in place. CIBSE Technical Committee and wider members to contribute, based on this proposal. The CIBSE DCSIG Executive Committee are seeking authors and contributors, based on the content of this proposal.

1. Timescale: When would you expect to complete the project? Please provide a rough timeline.

Six to twelve months.

Fees: Will authors require funding? If so, how much?

Potentially yes, budget fee £2000.00

1. Landscape: Does any similar or complementary guidance exist, published by CIBSE or elsewhere?

Not known.

1. **Collaboration**: Are there any organisations that may wish to be involved in the production of this guidance? (For example: membership organisations, trade associations, contractors, consultants, government departments).

Yes, from initial feedback, there will be several organisations from all sectors and specialist disciplines.

1. Are there any organisations that may wish to sponsor the production financially?

To be confirmed, possibly CIBSE Patrons.

1. Categorisation: CIBSE has created a taxonomy of building services, the Knowledge Matrix. On the following pages, please tick the topics and sub-topics that will be covered in this project.

**Topic:**

[x]  Mechanical

[ ]  Heating

[x]  Ventilation

[x]  Refrigeration and air conditioning

[x]  Extract/ exhaust systems

[x]  Smoke control

[x]  Pipeline distribution systems (natural gas, liquid fuels, medical gas, compressed air & vacuum)

[x]  Electrical

[x]  Extra low voltage

[x]  Low voltage

[x]  Medium voltage

[x]  High voltage

[x]  Local power generation & standby power

[x]  Earthing & bonding/ Lightning protection

[ ]  Communications

[ ]  Audio-visual

[ ]  Electric vehicle charging

[x]  Public Health

[ ]  Water

[ ]  Drainage

[ ]  Gas

[x]  Lighting

[ ]  Daylight/ sunlight

[ ]  Electric lighting

[ ]  Lighting energy

[x]  Fire safety

[x]  Fire life safety

[x]  Fire protection

[x]  Fire detection

[ ]  Fire notification

[ ]  Building fabric

[x]  Façades

[x]  Access & maintenance

[x]  Transportation systems in buildings

[ ]  Lifts

[ ]  Escalators

[ ]  Moving walks

[x]  Stairlifts and lifting platforms

[x]  Building intelligence

[x]  Controls

[x]  Smart buildings

[x]  Security

[ ]  Physical security

[ ]  Security systems (access control, surveillance, intruder alarm)

[ ]  Cyber security

[x]  Digital

[x]  Building information modelling (BIM)

[ ]  Digital engineering

[ ]  Digital construction

[x]  Sustainability & ESG

[x]  Climate change mitigation

[x]  Climate change adaptation

[x]  Circular economy

[x]  Biodiversity & natural capital

[x]  Diversity & inclusion

[x]  Social value

[ ]  Health, wellbeing and safety

Structure:

[ ]  Introduction of project

[ ]  Purpose (strategic/design context)

[ ]  Project management (inc. info requirements)

[ ]  Drivers

[ ]  Commercial

[ ]  Contracts

[ ]  BIM

[ ]  Digital information management

[x]  Fundamentals

[x]  Physics

[x]  Design conditions/ data

[x]  Calculations and methods

[x]  Sustainability (key considerations)

[x]  Health, wellbeing and safety

[x]  Retrofit and refurbishment

[x]  Condition surveying

[ ]  Modification/ adaptation

[x]  System selection

[x]  Selection (regulations, best practice, finance, operational energy, whole-life carbon)

[x]  Systems, plant, equipment (terminal equipment)

[x]  Systems, plant, equipment (network level, central plant, distribution)

[x]  System design principles

[x]  System sizing

[x]  System design conditions/ data

[x]  System sizing calculations

[x]  Health, wellbeing and safety

[x]  Modern methods of construction

[x]  Access and maintenance

[x]  Construction

[x]  Installation

[x]  Modern methods of construction

[x]  Health, wellbeing and safety

[x]  Records (drawings, operation and maintenance)

[x]  Controls

[x]  Strategy

[x]  Controls as specified, installed and commissioned

[x]  Commissioning

[x]  Plans

[x]  Procedures

[x]  Operation

[x]  Facilities management

[x]  Training

[x]  Maintenance

[x]  Health, wellbeing and safety

[x]  Performance (energy, carbon, water)

[x]  Performance (IEQ)

[x]  End of life

[x]  Reuse

[ ]  Repurpose

[x]  Recycle

[ ]  Demolition

Building Type:

[ ]  **Residential**

[ ]  Single dwelling

[ ]  Multiple dwelling

[ ]  Non-residential

[ ]  Office

[ ]  Education

[ ]  Higher education

[ ]  Healthcare

[ ]  Retail

[ ]  Leisure

[ ]  Aviation

[ ]  Road and rail

[ ]  Government

[ ]  Industrial

[ ]  Logistics

[x]  Data centre

[ ]  Heritage

[ ]  Defence

[x]  Infrastructure

[ ]  Utilities

[ ]  Other

Intended Reader:

[x]  Owner

[x]  Occupier

[x]  Designer

[x]  Developer

[x]  Constructor

[x]  Installer

[x]  Commissioning engineer

[x]  Operator/ Facilities manager

[x]  Manufacturer

[x]  Apprentice

[x]  Student

[x]  Researcher

[x]  Expert witness

[ ]  Other - please specify: