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?

|  |  |
| --- | --- |
|  | a traditional publication with words and diagrams to be produced for CIBSE’s Knowledge Delivery Platform, and in PDF |
|  | a data set |
|  | a Digital tool or software application |
|  | 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:**

Mechanical

Heating

Ventilation

Refrigeration and air conditioning

Extract/ exhaust systems

Smoke control

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

Electrical

Extra low voltage

Low voltage

Medium voltage

High voltage

Local power generation & standby power

Earthing & bonding/ Lightning protection

Communications

Audio-visual

Electric vehicle charging

Public Health

Water

Drainage

Gas

Lighting

Daylight/ sunlight

Electric lighting

Lighting energy

Fire safety

Fire life safety

Fire protection

Fire detection

Fire notification

Building fabric

Façades

Access & maintenance

Transportation systems in buildings

Lifts

Escalators

Moving walks

Stairlifts and lifting platforms

Building intelligence

Controls

Smart buildings

Security

Physical security

Security systems (access control, surveillance, intruder alarm)

Cyber security

Digital

Building information modelling (BIM)

Digital engineering

Digital construction

Sustainability & ESG

Climate change mitigation

Climate change adaptation

Circular economy

Biodiversity & natural capital

Diversity & inclusion

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

Fundamentals

Physics

Design conditions/ data

Calculations and methods

Sustainability (key considerations)

Health, wellbeing and safety

Retrofit and refurbishment

Condition surveying

Modification/ adaptation

System selection

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

Systems, plant, equipment (terminal equipment)

Systems, plant, equipment (network level, central plant, distribution)

System design principles

System sizing

System design conditions/ data

System sizing calculations

Health, wellbeing and safety

Modern methods of construction

Access and maintenance

Construction

Installation

Modern methods of construction

Health, wellbeing and safety

Records (drawings, operation and maintenance)

Controls

Strategy

Controls as specified, installed and commissioned

Commissioning

Plans

Procedures

Operation

Facilities management

Training

Maintenance

Health, wellbeing and safety

Performance (energy, carbon, water)

Performance (IEQ)

End of life

Reuse

Repurpose

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

Data centre

Heritage

Defence

Infrastructure

Utilities

Other

Intended Reader:

Owner

Occupier

Designer

Developer

Constructor

Installer

Commissioning engineer

Operator/ Facilities manager

Manufacturer

Apprentice

Student

Researcher

Expert witness

Other - please specify: