When the Grid Strains:

How Data Centers Are Redefining Power and Project Delivery in Engineering & Construction.

MODERATOR

Jeremy Osterberger

President and COO.
BIC Alliance

ECC

Ben Burgett

Vice President, Data Centers. Gray

Andrew Mahaffey

Director II, Design Engineering. Fluor

Brooks Friesenhahn

Founder & CEO, Stonehaus Holdings

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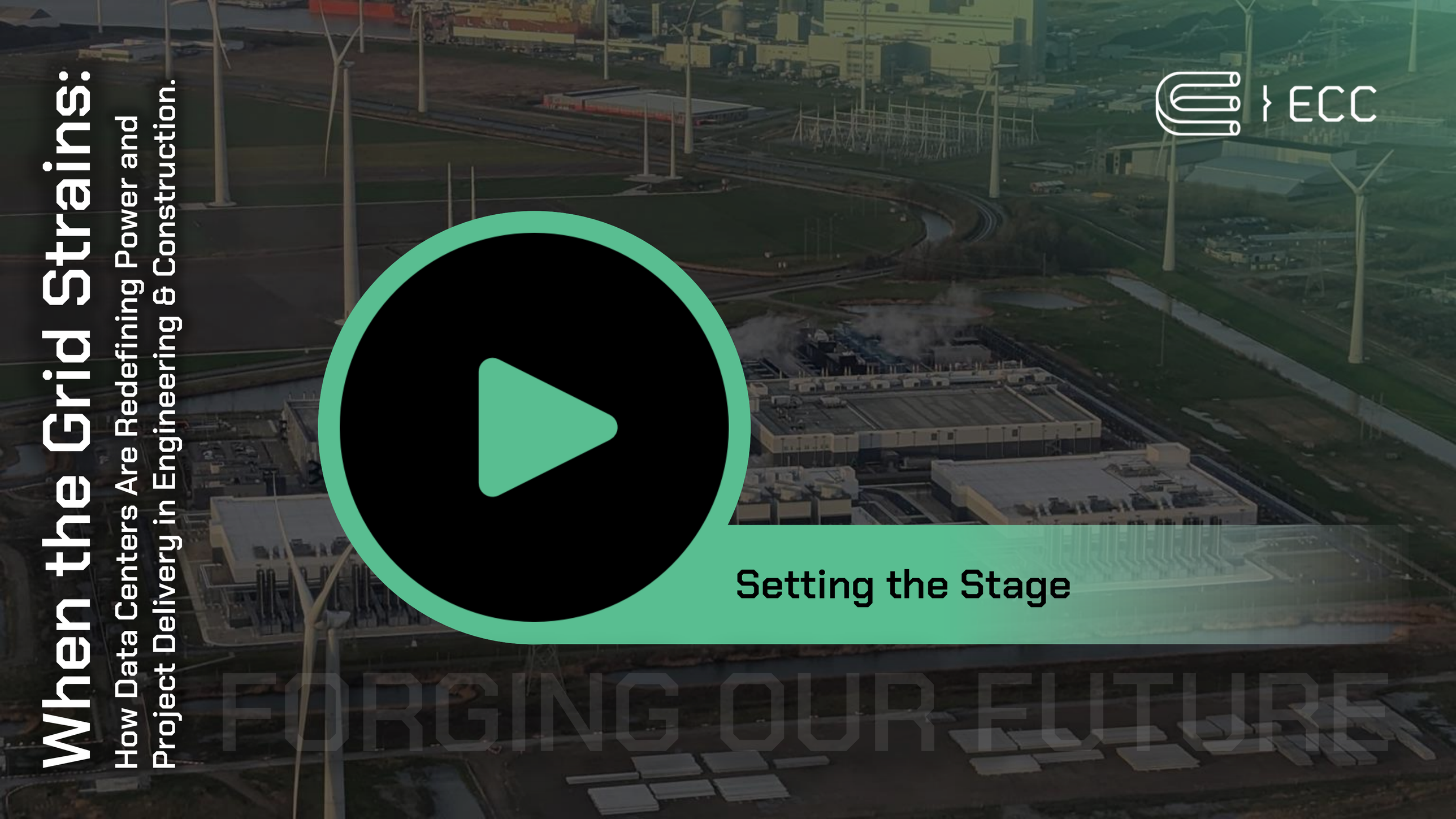

Setting the Stage

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Data Center Trivia

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Approximately how many households worth of electricity can a modern 100 MW data center consume annually?

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According to many industry leaders, what separates successful data center projects from delayed ones?

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The growth of AI has created a massive data center construction boom. Approximately how does the projected 2026 capital investment by the largest data center operators compare with annual capital spending by the largest Oil & Gas companies?

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As data centers move toward larger campuses and faster schedules, which construction strategy from industries like Oil & Gas is increasingly being adopted?

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Which U.S. market was recently ranked the No. 1 primary data center market globally as AI demand reshapes infrastructure investment?

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True/False: AI is increasing power demand faster than utilities can expand generation.

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Which topic surprised you the most today?

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If you remember only one lesson from today's forum, what should it be?

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Commissioning Sequence

A stage - gate framework from design through integrated systems testing

L1
L3
L2
Package
Transport

L1, L2, and Conditional L3
Completed Offsite
(Parallel to on-site construction)
60-65% Completed at Fab Yard

DESIGN

HANDOVER - READY

LEVEL 0

Design & Planning

- Form Cx Team & roles
- Design & SPOF reviews
- Establish Cx gates
- Define FAT requirements

Lead: GC + Owners Cx

LEVEL 1

Factory Testing

- Factory Acceptance Testing
- Equipment QA/QC checks
- Performance & compliance
- Shipping & logistics

Lead: General Contractor

LEVEL 2

Delivery, Install & Pre-Start-Up

- Receiving & compliance
- Installation quality checks
- Pressure, flush, megger
- Pre-start-up readiness

Lead: General Contractor

LEVEL 3

System Start-Up

- Controlled energization
- Setpoints & configuration
- Individual site testing
- Closeout & L4 readiness

Lead: General Contractor

LEVEL 4

Functional Performance Testing

- Operating modes & failures
- Interlocks & safety logic
- Sequence of operations
- Facilities team training

Lead: Owner's Cx + GC

LEVEL 5

Integrated Systems Testing (IST)

- Integrated test scripts
- Load banks & heat-load
- Electrical failure / IST
- Final report & handover

Lead: Owner's Cx + GC

LEVEL 6

OPERATIONAL PHASE

- Handover
- Operations
- Warranty
- Maintenance

QA / QC

Ready for Service

Handover to OPS

Construction Phase

Acceptance Phase

Operational Phase

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Questions & Answers

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Audience Q&A

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Thank You

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