

UptimeInstitute®

Data Centre Certification Myths
and Misconceptions
Electricity & Energy 2021

Scott Roots

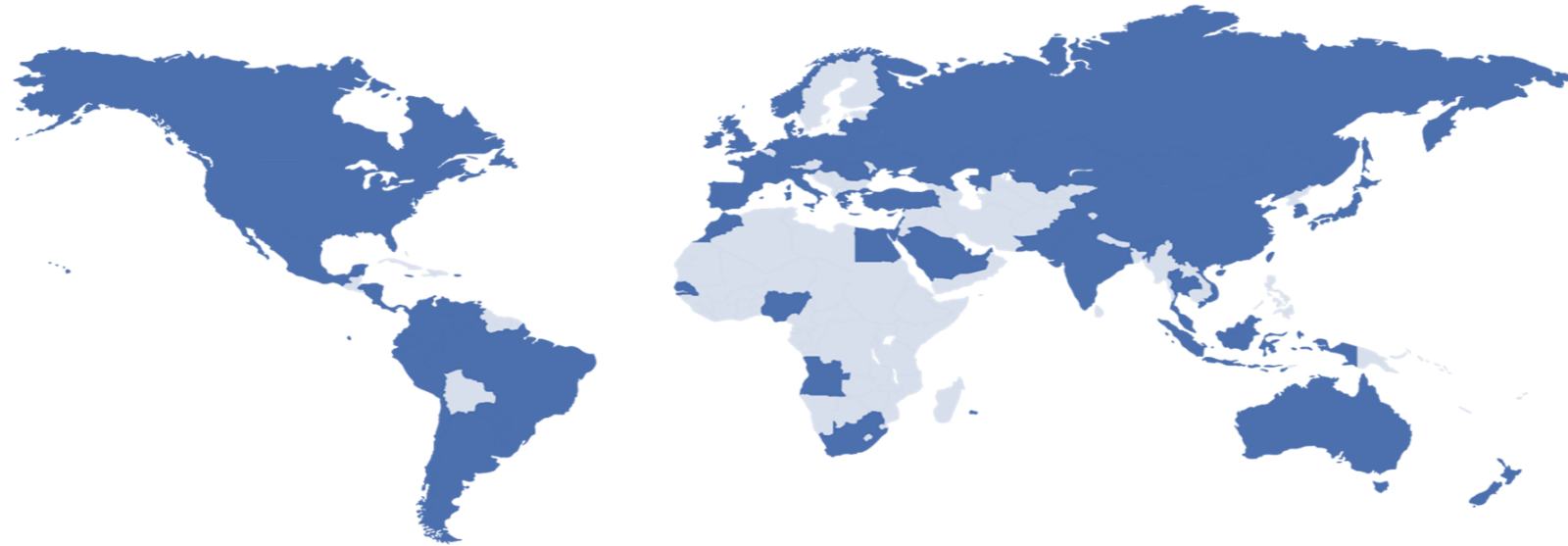
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Tier Certification

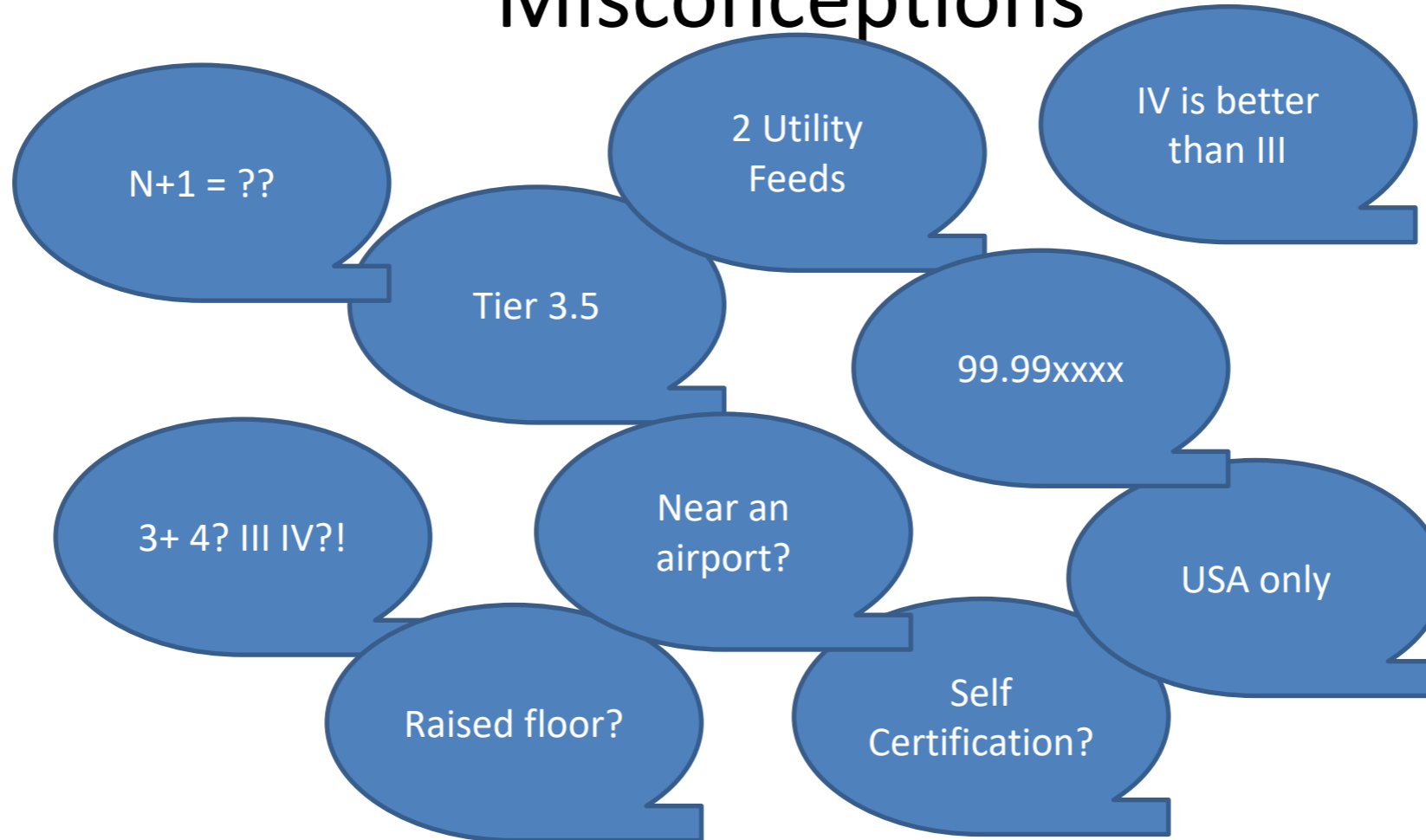
- Performance Based
- Independent
- Unbiased
- Globally Accepted



Tier Classification System



Top ten common Myths and Misconceptions



Tolerance for risk determines the appropriate Tier to support the business objective. Tier IV is not the best answer for all organizations.

Tier II can be a tactical solution, usually driven more by cost and time-to-market

Tier IV is the BEST!

FALSE

Tier III and Tier IV are strategic solutions for business that have that rigorous uptime requirements for long-term resilience

Tier IV is not 'better' than Tier III. The performance and capabilities of a data centre's infrastructure should match the business need

Tier Certification is a performance-based evaluation of a data centre's specific infrastructure; it is not a checklist or cookbook

Industry shorthand employs N terminology to define availability. N+1, N+2, 2N, or 2(N+1) does not determine level

Component count determines Tier level

FALSE

Increasing component count does not guarantee a specific Tier level. Tiers also include evaluation of distribution pathways and other system elements

It is possible to achieve Tier IV with N+1 components. How they are configured and connected to redundant distribution pathways is critical

This the first step. The Design Certification is intended to be a milestone so construction can start knowing that the intended design meets the Tier objective

TCDD is provisional verification until the Constructed Facility (TCCF) is verified by Uptime Institute consultants

Design (TCDD) certification is the most important

TCCF requires a visit from a team of Uptime Institute consultants. The consultants observe tests and demonstrations to prove Tier compliance

Certified facilities may experience outages without solid M&O plans. The final step is the Tier Certification of Operational Sustainability (TCOS)

There are 4 Tiers
Tier I
Tier II
Tier III
Tier IV
Anything else is bad
marketing

Tier level is determined by
the lowest common
denominator. A Tier III power
system with Tier II cooling,
equals a Tier II facility

Tier 3, Tier 3+, Tier IV minus

FALSE

3,4, Plus, Minus etc. anything other than Roman Numeral is not
Official Uptime Institute

Uptime Institute removed references to “expected downtime per year” from the Tier Standard in 2009, but they were never a part of the Tier definitions

Tier Topology is based on specific performance factors that demonstrate a facility has met specific performance objectives

Each Tier level specifies an estimated
~~FALSE~~
downtime per year

Remember even a Tier IV data centre, which is Fault Tolerant, may experience IT outages if it is not operated and managed effectively

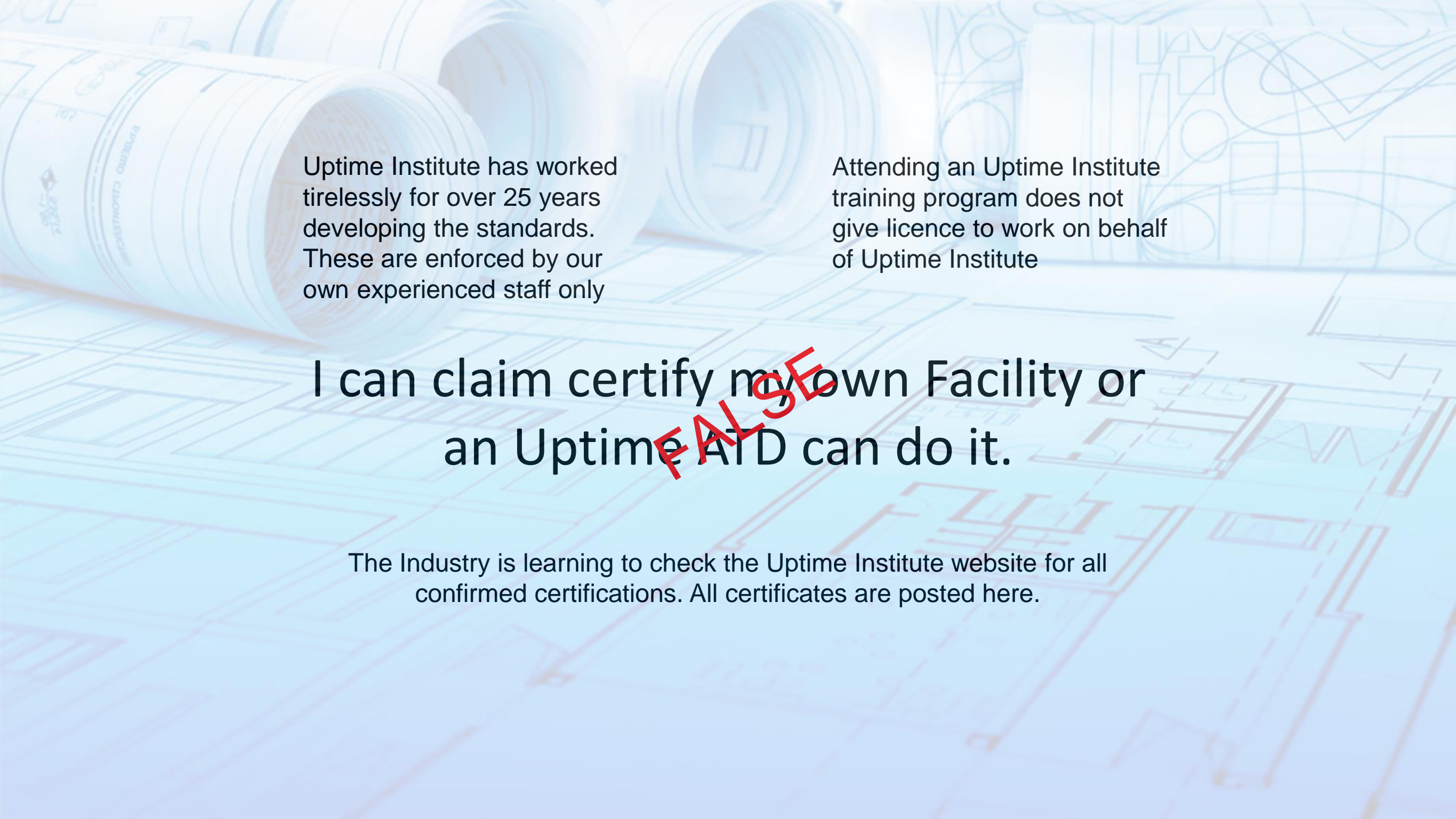
Uptime Institute has Certified many existing buildings. The process is, however, slightly more challenging when working in facilities with live loads

For best results with an existing facility, the process should begin with a Tier Gap Analysis rather than a formal Certification effort

Tier Certification is ~~only~~ applicable to newly built facilities

TGA provides a high-level summary review for major Tier shortfalls. This allows the owner to make an informed decision whether to proceed with a certification effort

Tier Certification of Constructed Facility can be performed with any load profile, including resistive load banks, live critical IT load, or a mix



Uptime Institute has worked tirelessly for over 25 years developing the standards. These are enforced by our own experienced staff only

Attending an Uptime Institute training program does not give licence to work on behalf of Uptime Institute

I can claim certify my own Facility or an Uptime AI D can do it.

The Industry is learning to check the Uptime Institute website for all confirmed certifications. All certificates are posted here.

The only reliable source of power for a data centre is the site generation plant. This is because utility power is subject to unscheduled interruption


The number of utility feeds, substations, and power grids that provide public power to a data centre neither predicts nor influences Tier level.

Utility feed count determines the Tier level

FALSE

While utility power is not even required for Tiers, most Tier Certified data centres use it for main operations as an economic alternative.

It is possible to build a certified Tier IV facility in the desert with zero Utility power



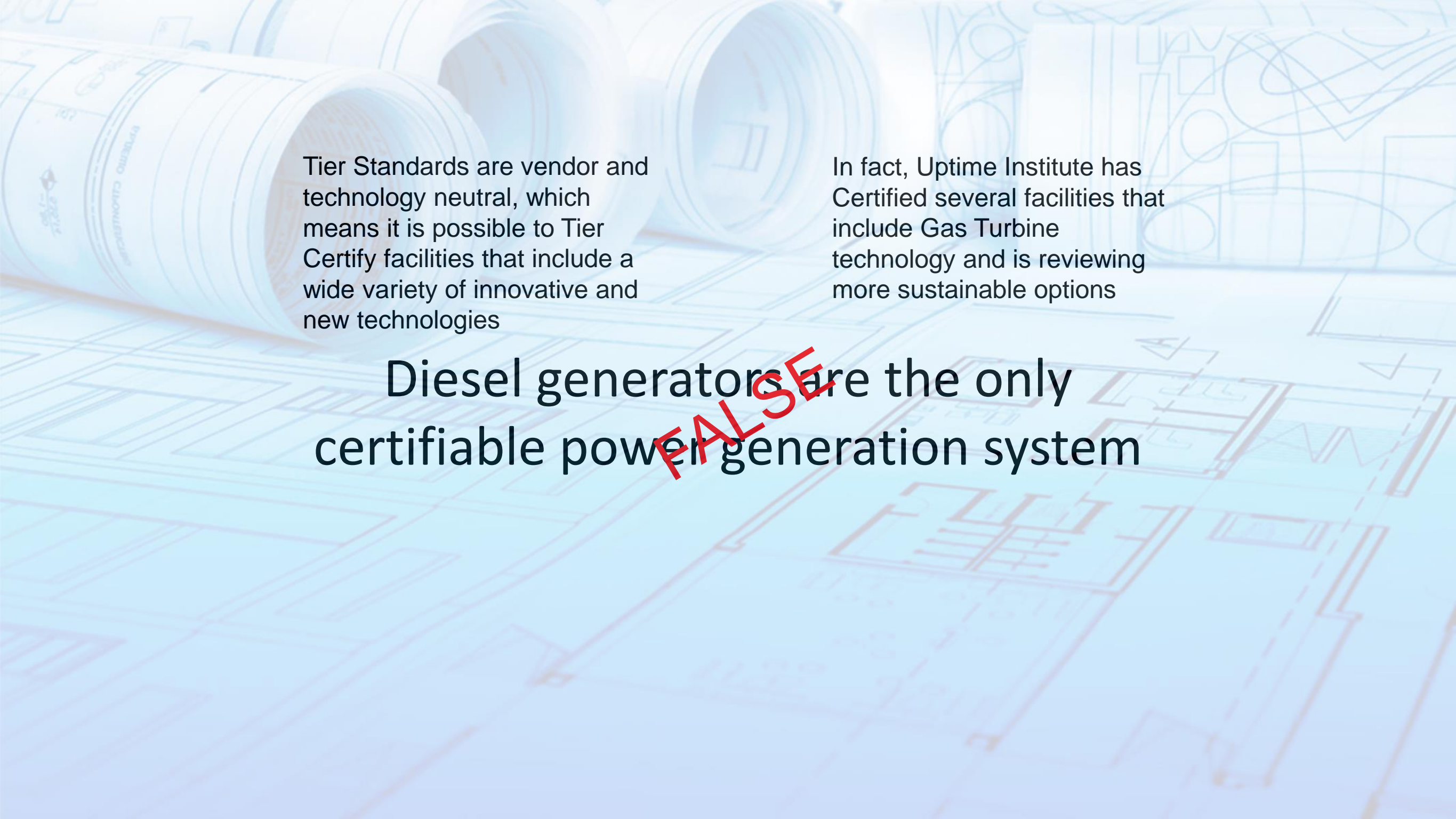
The choice of under floor or overhead cooling is a decision to be made by the owner based on operational preference

In Uptime Institute's experience, a raised floor can enhance operational flexibility over the long term

Tier Certification requires a raised floor

FALSE

Therefore decisions such as raised floor or on-slab, Cold Aisle/Hot Aisle, containment of Cold Aisle/Hot Aisle, and gallery cooling can affect the efficiency of the computer room environment, but are not mandated by Uptime Institute Tiers



Tier Standards are vendor and technology neutral, which means it is possible to Tier Certify facilities that include a wide variety of innovative and new technologies

In fact, Uptime Institute has Certified several facilities that include Gas Turbine technology and is reviewing more sustainable options

Diesel generators are the only certifiable power generation system

FALSE



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