



# Invenergy Control Center

A video wall in Invenergy’s new control center at its Chicago headquarters gives the energy company a concise overview of its North American assets.

## Upgrade Asset Monitoring

With a focus on the development of clean energy, Invenergy’s North American assets include more than 10,300 megawatts of projects that are in operation, in construction, or under contract, including wind, solar, and natural gas-fueled power generation projects and energy storage facilities. The power they produce can then be bid into local energy markets. Just a couple of the high-profile clients benefiting from Invenergy’s resources include Google and the 3M Company.

From its control center in Chicago, Illinois, Invenergy monitors the valuable operations of its North American assets. To improve those capabilities, the company decided to upgrade its Invenergy Control Center (ICC) so that control room personnel could respond quickly to emergencies and troubleshoot any issues with its assets.

In the summer of 2015, the company moved its control center from the Chicago suburbs to the city, where its corporate office resides.

There, Invenergy staff make sure 2,500 turbines are spinning at 35 wind farms, at the ready to remotely troubleshoot should any circuitry or sensors temporarily go down.

“When the wind is blowing, our turbines are operating efficiently,” says Brad Purtell, Invenergy’s director of operations support. “If we have a turbine down, it’s lost opportunity cost.”

AVI-SPL would be tasked with creating a command center that would oversee those turbines and other assets.

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### Love at first demo

Representatives from Invenergy's senior systems management were on hand when Christie demoed its solutions, including its Phoenix control management system.

"Immediately we knew that's what we wanted," says Purtell. "We were blown away by the functionality and scalability of the processor. The Phoenix is pretty cutting edge for what it can do. It brings in a level of capability that wasn't possible before."

With the technology settled on, AVI-SPL began the process of reviewing the proposed systems and collaborating with WMA Consulting Engineers on the solution's design. Led by project manager Brian McHale and project engineer Charlie Salto, our team integrated a control room solution featuring a video wall of ten 55-inch Christie ultra-narrow bezel LCD panels, which are designed to function 24/7, 365 days a year. Those displays are positioned in a tight 5-by-2 array, creating a virtually seamless image courtesy of their 3.5 mm bezels. Five Christie Phoenix content management systems allow content to be moved among the displays and expanded to different sizes.

"On top of Christie's industry leading quality, the flexibility and expandability of the Phoenix system was the perfect solution for what Invenergy wanted to do," says Matt Swiderski, AVI-SPL account manager. "Its scalability will also allow Invenergy to easily expand into the future."

AVI-SPL worked collaboratively together with Leopardo Construction and WMA to design the other AV spaces. Those included huddle rooms, and other meetings spaces integrating with video conferencing.

The ICC's new system operates on a 24/7 basis, and can grow as Invenergy needs to stream additional resources. Should Invenergy decide to add another set of displays for a different group of viewers, the Phoenix system can send the same information to that wall.

Purtell complimented the AVI-SPL team for ensuring that the integration ran smoothly and on time, while respecting all of Invenergy's concerns.

"Adam Stanton [AVI-SPL engineer] and Charlie were great," says Purtell. "Charlie answered every question that was asked in depth."

That level of support continues through an AVI-SPL help-desk contract that gives Invenergy extensive phone support and access to onsite staff.

### Quick to see, quick to respond

Around the clock, every day of the year, ICC staff have insight into the Invenergy's assets. The operators just have to look at the video wall displays to see how each of its wind farms is performing. When a substation is functioning normally, the displays register

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gray and black colors for that site. If something abnormal occurs, like a breaker tripping, a bright green box pops up. And if a transmission line is congested, the entire site is circled in yellow.

“It helps to have those vibrant colors pop up,” says Purtell.

With the ability to see at a glance if something has gone wrong, operators respond from their individual workstations, opening up the breakers if there’s a safety issue, and coordinating all the outages

between the site and transmission company.

If any of the substations at those sites are underperforming, the ICC operators display the content as needed, such as one window across all 10 displays or multiple windows, including views that offer a closer look at the cells.

“We want to keep things in a steady state,” says Purtell. “We can switch the displays to focus on a particular site, and we’ll soon be able to monitor the locations by camera.”

## At A Glance

### Organization

Invenergy

### Location

Chicago, IL

### Market

Energy

### Solutions

Christie Phoenix

Christie FHD552-X (10)

### Services

Integration

### Consultant

WMA Consulting Engineers

### About AVI-SPL

AVI-SPL designs, builds, integrates and supports solutions for AV and video communication, digital media, advanced visualization, and control systems for all types of organizations around the world. We also provide a wide range of support services, including cloud-based video conferencing, onsite staffing, call launching for video conferencing, and remote monitoring of AV and video systems to ensure optimal performance. Our Customer Care program delivers manufacturer-certified tech support and maintenance through our 24/7/365 help desk. Since 2006, we have been ranked the number one systems integrator in North America by *Systems Contractor News*.

### About Christie

As a global industry leader, Christie delivers advanced presentation environments with LCD, 1-chip and 3-chip DLP projection technologies. Christie established a reputation as the world’s single source manufacturer of display technologies and solutions for meeting rooms, control rooms, business presentations, education, government and more. From conference rooms to houses of worship, Christie’s versatile solutions can effectively meet your needs.

### Featured Partner

**CHRISTIE®**



Fig 1.1



Fig 1.2

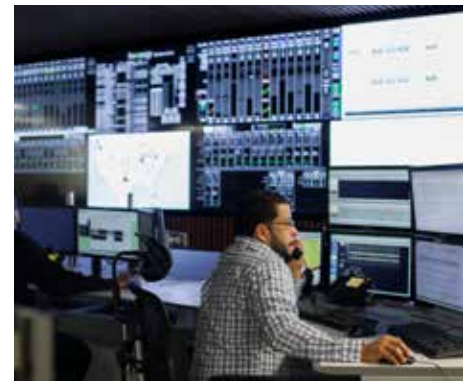


Fig 1.3



Fig 1.4



Fig 1.5

**Images**

Fig 1.1  
From the Invernergy Control center, staff make sure 2,500 turbines are spinning at 35 wind farms throughout North America.

Fig 1.4  
Christie Phoenix control management systems allow content to be moved and expanded among the control room displays.

Fig 1.2  
The ICC's new system operates on a 24/7 basis, and can grow as Invernergy needs to stream additional resources.

Fig 1.5  
Ten 55-inch Christie ultra narrow bezel LCD panels are positioned in a tight 5-by-2 array, creating a virtually seamless image across all displays.

Fig 1.3  
From their workstations, operators can see the health of Invernergy substations.