

POWER

NEWS & TECHNOLOGY FOR THE GLOBAL ENERGY INDUSTRY SINCE 1882

www.powermag.com

Vol. 167 • No. 7 • July 2023

2023
PLANT OF THE
YEAR



Estrella del Mar III

Page 14

Reinvention, Water, and Hydrogen Awards | 18–23

Mid-Year Industry Forecast | 24

Sophisticated Microgrids | 26

POWER

Established 1882 • Vol. 167 • No. 7

July 2023

www.powermag.com

SPEAKING OF POWER

Interconnection Constraints Threaten Success of Clean Energy Projects 5

GLOBAL MONITOR

Integration of Hydropower and Hydrogen Gains Momentum 6

Space Solar Power Prototype Beams First Power to Earth 7

THE BIG PICTURE: A Global Hydropower Profile 8

POWER Digest 10

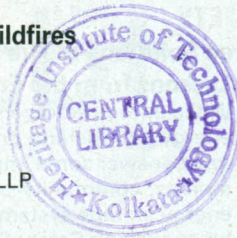
FOCUS ON O&M

Electric Utility Protocols Can Mitigate Impacts from Wildfires 11

LEGAL & REGULATORY

Renewable Energy Insurers Trying to Limit Coverage
for Severe Convective Storms 13

By Jeffrey Meagher and Nick Chan, K&L Gates LLP



COVER FOCUS: PLANT OF THE YEAR

Estrella del Mar III, a Visionary Floating Power Plant,
Is POWER's Plant of the Year 14

POWER's highest honor goes to Estrella del Mar III, a 150-MW SeaFloat barge-mounted power plant that a team of international power professionals designed and built in Singapore, and then transported to and installed in the Dominican Republic. The innovative vessel-mounted gas-powered combined cycle power plant stands out for its efficient, economical, and resilient power solution that also addresses land and cost challenges.



SPECIAL REPORTS:

REINVENTION AWARD

Dania Beach Clean Energy Center: 18

A Vital Power Resource for Southeast Florida

A modernization project at a gas-fired power plant serving an area near Fort Lauderdale, Florida, has provided needed upgrades to the facility, and improved the reliability and resilience of the area's electricity supply.



WATER AWARD

Dominion Energy's Reverse Osmosis Concentrate Recovery System
Wins POWER's Water Award 20

A successful project to reduce water consumption at a nuclear power plant in Virginia features new technologies, designed around a reverse osmosis concentrate recovery system supported by input from the plant's workers.

HYDROGEN AWARD

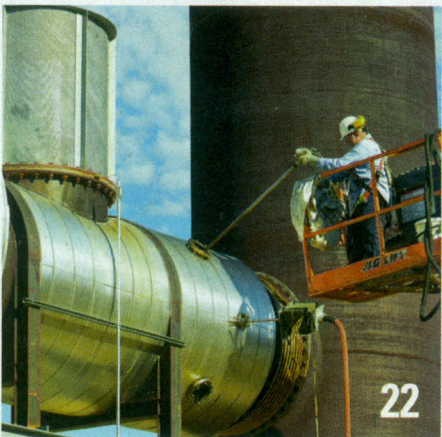
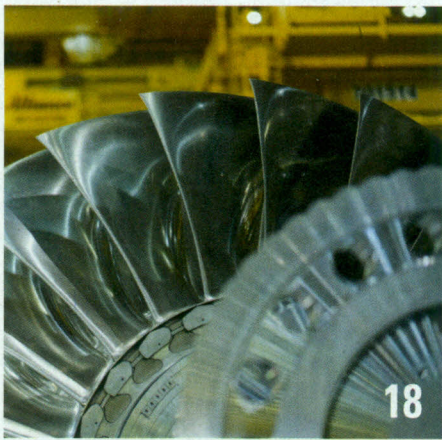
Hydrogen Pilot Validates Fuel-Blending Projects 22

Hydrogen is proving itself as an important fuel when it comes to decarbonizing the power generation sector. A project at a power plant in Michigan, using Wärtsilä technology, provides a glimpse at how hydrogen blended with natural gas can provide reliable electricity and reduce carbon emissions.



ON THE COVER

Santo Domingo sits at the mouth of the Ozama River in the Dominican Republic. With 3.3 million people, it is one of the Caribbean's most populous cities, having ballooned by about 700,000 residents over the past decade. Estrella del Mar III is helping the city meet its growing demand for reliable electricity without taking up extremely valuable real estate. *Courtesy: Siemens Energy*




CONNECT WITH POWER

If you like *POWER* magazine, follow us online for timely industry news and comments.

 Become our fan at [facebook.com/POWERmagazine](https://www.facebook.com/POWERmagazine)

 Follow us on Twitter @[@POWERmagazine](https://twitter.com/POWERmagazine)

 Join the LinkedIn *POWER* magazine Group and the Women in Power Generation Group

FEATURES:

MID-YEAR INDUSTRY FORECAST

Clean Energy Transition Continues Despite Reliability, Supply Chain, and Financial Uncertainty

24

The power generation sector continues to be challenged by supply chain and workforce issues, and concerns about grid reliability linger as groups warn of summer heat that could strain electricity resources. Industry insiders who spoke with *POWER* said energy storage will grow in importance to alleviate at least some of the problems.

DISTRIBUTED ENERGY

Not Your Mother's Microgrid

26

Microgrids are a major part of the evolution of power generation, and the continuing incorporation of new technologies is enabling new levels of sophistication when it comes to their design.

MARNIE SURFACEBLOW

High Anxiety at Low Loads

28

The new world of power generation brings new challenges for plant operators and maintenance staff. Paying attention to detail, and knowing the latest information about plant systems and equipment, is a key to success.

SAFETY

Three Solutions to Fire Safety Challenges:

Lessons from the Energy Storage Industry

Web

While energy storage systems often carry lower fire risks than other forms of energy storage and processing—such as oil and gas refineries—the industry must answer some important questions about safety to avoid regulatory constraints, community opposition, and clear up the confusion about whether energy storage systems are safe. (Visit powermag.com and search “Three Solutions to Fire Safety Challenges” to read this online-only exclusive.)

MATERIALS

Developing Coatings for Use in Harsh Biomass Combustion Environments

Web

There is a real need to assess the potential for the use of different materials and coatings. Currently, the response to the new environments caused by low-carbon fuels has been the use of expensive nickel-based materials or coatings. This article looks at the behavior of three different coatings subjected to the new biomass environment. (Visit powermag.com and search “Developing Coatings for Use in Harsh Biomass Combustion Environments” to read this online-only exclusive.)

WIND POWER

Ways to Address the Wind Power Technology Talent Gap

Web

As the wind power industry grows, so does the need for well-trained wind turbine service technicians. An executive with Pearce Renewables discusses the importance of workforce development and how independent service providers and asset owners can support training initiatives. (Visit powermag.com and search “Ways to Address the Wind Power Technology Talent Gap” to read this online-only exclusive.)

COMMENTARY

Three Ways Natural Gas Will Bolster Decarbonization Efforts

32

By Kevin Greiner, Gas South

FIND THE LATEST POWER NEWS AT POWERMAG.COM

- TVA Head Wants Nothing to Do with Building One Reactor Unless He Can Build 20
- 500-MW Hydrogen Power Plant Planned in Arkansas
- Oklo's Next Two Nuclear Power Plants Planned for Southern Ohio
- NRG Energy to Sell Texas Nuclear Plant Stake to Constellation in \$1.75B Power Move
- U.S. Power Sector Trade Groups Flag Critical Electrical Steel Crunch
- NEI Head: 'This Is the Biggest Moment for Nuclear Energy Since the Dawn of the Atomic Age'