OSIsoft.

USERS CONFERENCE 2013

The Power of Data

E M E A

PARIS SEP 16-19 FRANCE

THRIVING IN A WORLD OF CHANGE

EMEA DAY0 - OSIsoft The Power of Data in Power Generation

Presented by **OSIsoft**

Good Afternoon and Welcome!

- Power Generation Industry Session
  - Fossil Fueled, Renewable, and Nuclear Energy!
    - It's ok to sit together. You are already working well together…
  - My 2013 & 2014 prediction is:
    - Electricity will be very popular, again!
  - Let's avoid "dirty jokes" about coal
  - And they're Wind Turbines, not fans or wind mills
  - Thank you all for your part in keeping the lights on!
  - User Group Session, So ask questions…

Sustainable Generation Mix of Tomorrow Today


Gas


Coal


Nuclear


Hydro


Wind


Solar PV & CSP




Geo / Bio / Marine…

ERCOT new wind record of 9,481 MW

Winter wind propels ERCOT to a new wind record of 9,481 MW
FEB. 13, 2013, AUSTIN, TX -- A strong weekend cold front propelled the Electric Reliability Council of Texas (ERCOT) to a new wind power record, of 9,481 MW of power at 7:08 p.m. on Feb. 9. The generation provided nearly 28 percent of the system load.

"While wind generation over the course of a day can change very quickly, improved tools help us predict those patterns and enable us to reliably use this resource to its fullest potential", said Kent Saathoff, ERCOT's vice president of Grid Operations and System Planning.

ERCOT has more than 10,400 MW of commercial wind power capacity.
Wind power comprised 9.2 percent of total energy used in the ERCOT region in 2012.

Germany set 22GW Solar Record

On the 25th of May 2012, Germany set a new world solar energy record in photovoltaic solar energy: 22.4 GW of photovoltaic energy on the grid covering over 30% of all electricity demand!

In fact, the really meaningful story starts with a different number: 189.24 GWh. That's the amount of electrical energy generated from more than a million PV solar systems spread all over the country on that record day. http://cleantechnica.com

Power Generation Industry Challenges

- Tighter Market Power Reserves
- Profit margins and lower capital ROI
- Plant and T&D life extensions / modernization
- Dynamic Environmental requirements
- Optimize use of renewable sources
- Need for higher availability, reliability, and flexibility
- Plants operating outside of design
- Need to respond and make decisions in real-time
- Data is the currency of the future!
- **Are you listening to your data?**

No Such Thing as Too Much Information

MIT Study…

- **Data Driven Decision Making Companies**
  - **Net gain on Output**
  - **Productivity 5 to 6 % higher**

Reference: Brynfjolfsson, et al., MIT, How does Data-Driven Decision making Affect Firm Performance, 2011.
http://www.nytimes.com/2011/04/24/business/24unboxed.html

“Our mission is to maximize the VALUE our customers get from our product and services.”

Dr. Patrick Kennedy

“OSIsoft and the PI System exist to make you smarter, enabling better decisions.”

OSIsoft and Power Generation

Monitored and Optimized with the PI system

- Approximately 60% of USA, 30% EMEA and 24% APAC power generation
- 100% of the ISOs/RTOs in the North America
- 13 of the top 15 wind generating producers in the world
- 19.5GW of total 23 GW USA wind generation
- Over 50% of the Concentrated Solar Plants (CSPs) in the world
- 76% of USA nuclear power generators and the Nuclear Regulatory Commission
- Nearly 100% of nuclear power generators in Canada, UK & Korea

The PI System –A "Defacto" Standard in Power Generation

Driving Factors for PI System Infrastructure

- Problem: Many disparate plant systems and the need to turn data into actionable information
  - DCS, PLC, CEMS, Analyzers…
  - Various timestamps
  - Data accessibility & integrity
- Solution: OSIsoft, Enterprise Wide Infrastructure
  - Common real-time database
  - Common visualization and analytic toolset
  - Common platform for notifications, development and advanced analytics
  - Leverage SMEs (Central, Plant, Vendors)
  - Remote Monitoring & Diagnostics

Increase availability, lower lost margin

Agenda

Monday, September 16, 2013

Power Generation - Day Zero

13:00-13:15 *Welcome and Introduction* - The Power of Data in Power - Generation David Thomason, *OSIsoft*

13:15-13:45 *Modernization of Control Systems at Cofrentes Nuclear* - Miguel Chavero, *Iberdrola*

13:45-14:15 *Enel Experience with OSIsoft and the PI System* - Javier Castañé, *Enel Energy Europe*

14:15-14:45 *EDF Hydro - Utilization of the PI System* - Jérôme BOUDON, *EDF*

14:45-15:15 *Break*

15:15-15:45 *CEZ Implementation of PI System* - Martin Zechovsky, *CEZ*

15:45-16:15 *Ensuring the Real-Time Monitoring and Control of a Rapidly Growing Portfolio of Renewable Assets*

Uwe Fischer, *E.ON Climate & Renewables GmbH*

16:15-16:45 *CORE Usage of PI System Improves Curtailment Strategies and Increases Production*

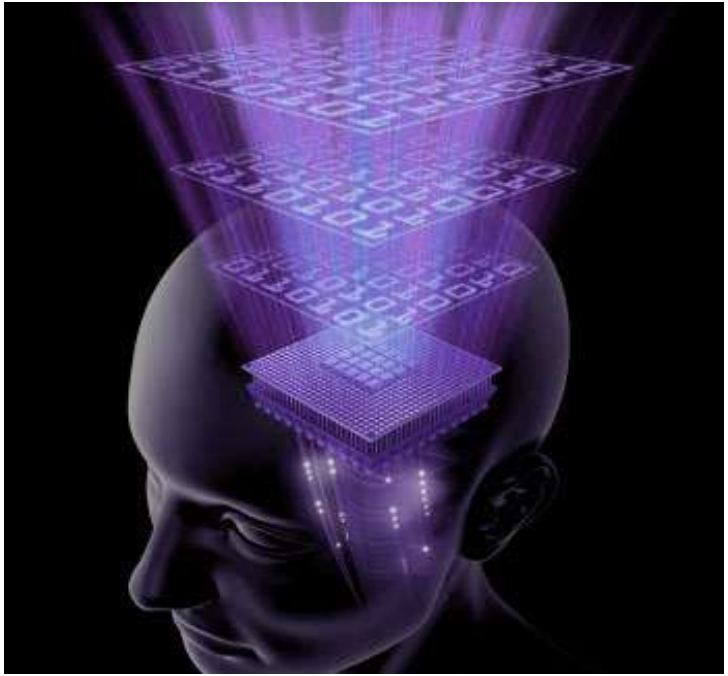
Eva Lopez & Maite Marin, *Iberdrola Renewables*

16:45-17:15 *The PI System and Cyber Security* - Bryan Owen, *OSIsoft*

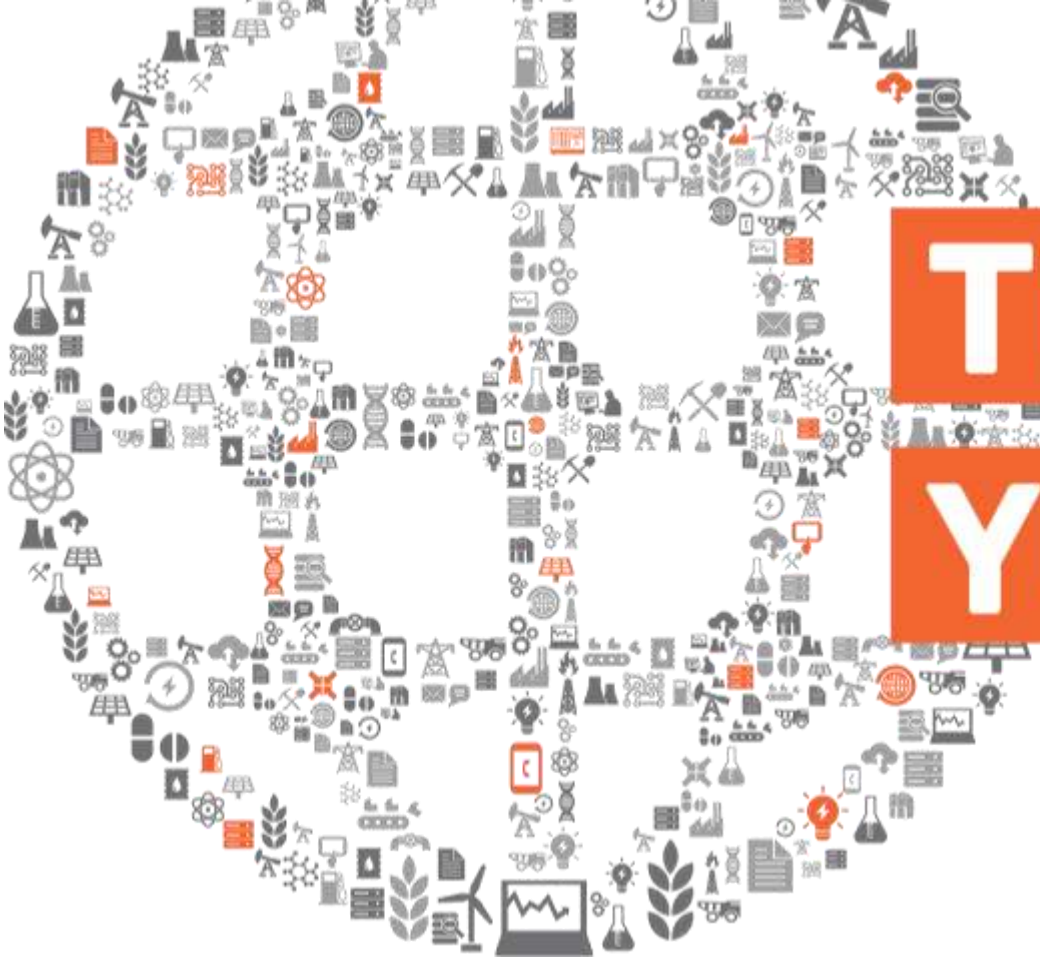
17:15-17:30 *Summary / Q&A and Close* – Chris Crosby, *OSIsoft*

OSIsoft “Power Of Data”

- All data in real time with context and history
- Decision Making is:
  - Faster
  - More Accurate and Complete
  - More Effective
- Preserve and expand knowledge
- Enable situational awareness and predictability
- Increase speed of execution
- Cultivate and leverage the collective “mind” power of the organization



Remember, Renewable Power has been around a long time…



THANK YOU

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