**Summary:** Big data has great potential to provide opportunities not only in many fields but also in energy enhancing technical, organizational, social and economic gains and contributions. The current potential of applying big data approaches for better planning, managing, designing, and securing power grid operations are very challenging tasks and needs significant efforts. This talk will cover the issues of computational complexity, data security and privacy, cost, management, planning and integration of big data into energy and power grid systems and also focus on the key challenges in big data analytics, privacy and security issues.