Lighting in the Smart Grid

Smart Grid
The smart grid is a modernized electrical grid that uses information and communications technology to gather and act on information, such as the behaviors of suppliers and consumers, in an automated fashion to improve the efficiency, reliability, economics, and sustainability of the production and distribution of electricity. (source: Wikipedia)

A fundamental objective of utility operators is to balance supply and demand dynamically. An important tool to achieve this balance is distributed load control using Demand Response (DR) signals and pricing mechanisms such as time-varying or event driven electricity rates.

Demand Response (DR) relates to changes in electric usage by end-use customers from their normal consumption patterns in response to changes in the price of electricity over time, or to incentive payments designed to induce electricity use change at times of high wholesale market prices or when system reliability is jeopardized.

Lighting and the Smart Grid
Besides the fact that lighting has properties that are interesting for participation in future Demand Response (considerable load, fast response and no delayed consumption), the focus should be on the energy saving by the use of LED and lighting controls systems. Renovation of old lighting installations by using LED and controls systems is the recommended way forward.

The lighting controls system handles future Demand Response, since it takes care of the end user needs of well-being, comfort and safety. Just switching off the lights can result in undesired situations. It should be noted there are legal requirements for the provision of light, for instances, at work places, streets and underground tunnels, etc.

Position of LightingEurope
- Lighting is an essential need for human beings, their well-being, comfort and safety.
- LightingEurope welcomes Smart Grid for the purpose of energy stability.
- LightingEurope supports the availability of lighting for human needs whenever required. Therefore interaction between lighting and the Smart Grid has to comply with these needs.

Nonetheless, LightingEurope would welcome standards for secure and lighting relevant information exchange between the Smart Grid and Lighting Control & Energy
Management Systems which would allow configurable automated interaction between lighting control systems and the smart grid.

LightingEurope is an industry association of 33 European lighting manufacturers, national associations, and companies producing materials. LightingEurope members represent over 1,000 European companies, a majority of which are SMEs; a total workforce of over 100,000 people in Europe; and an annual turnover estimated to exceed 20 billion euros. LightingEurope is dedicated to promoting efficient lighting practices for the benefit of the global environment, human comfort, and the health and safety of consumers.

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