

The technology flow for utility efficiency and sustainability



Energy
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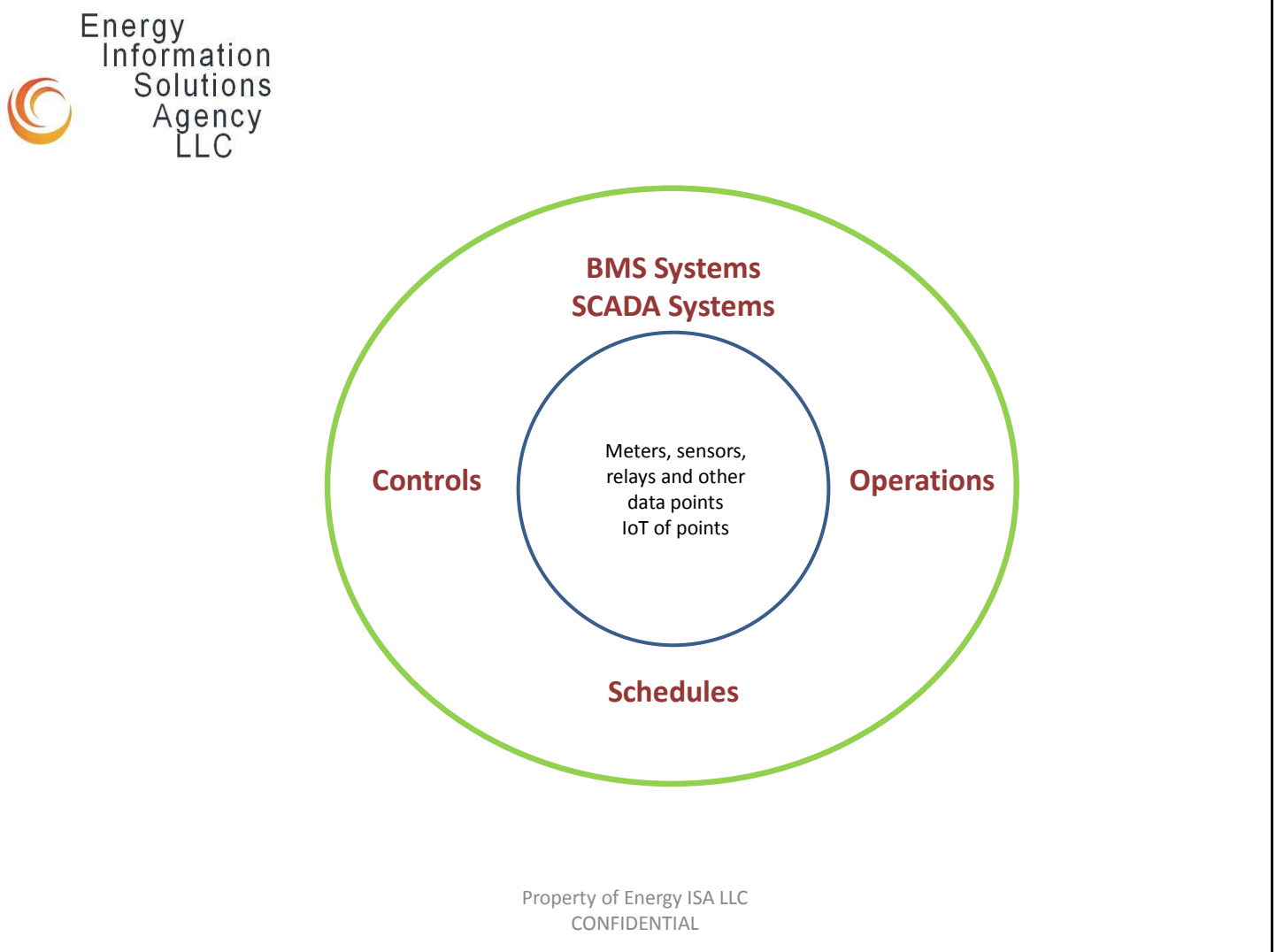
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**Meters, sensors,
relays and other
data points
IoT of points**

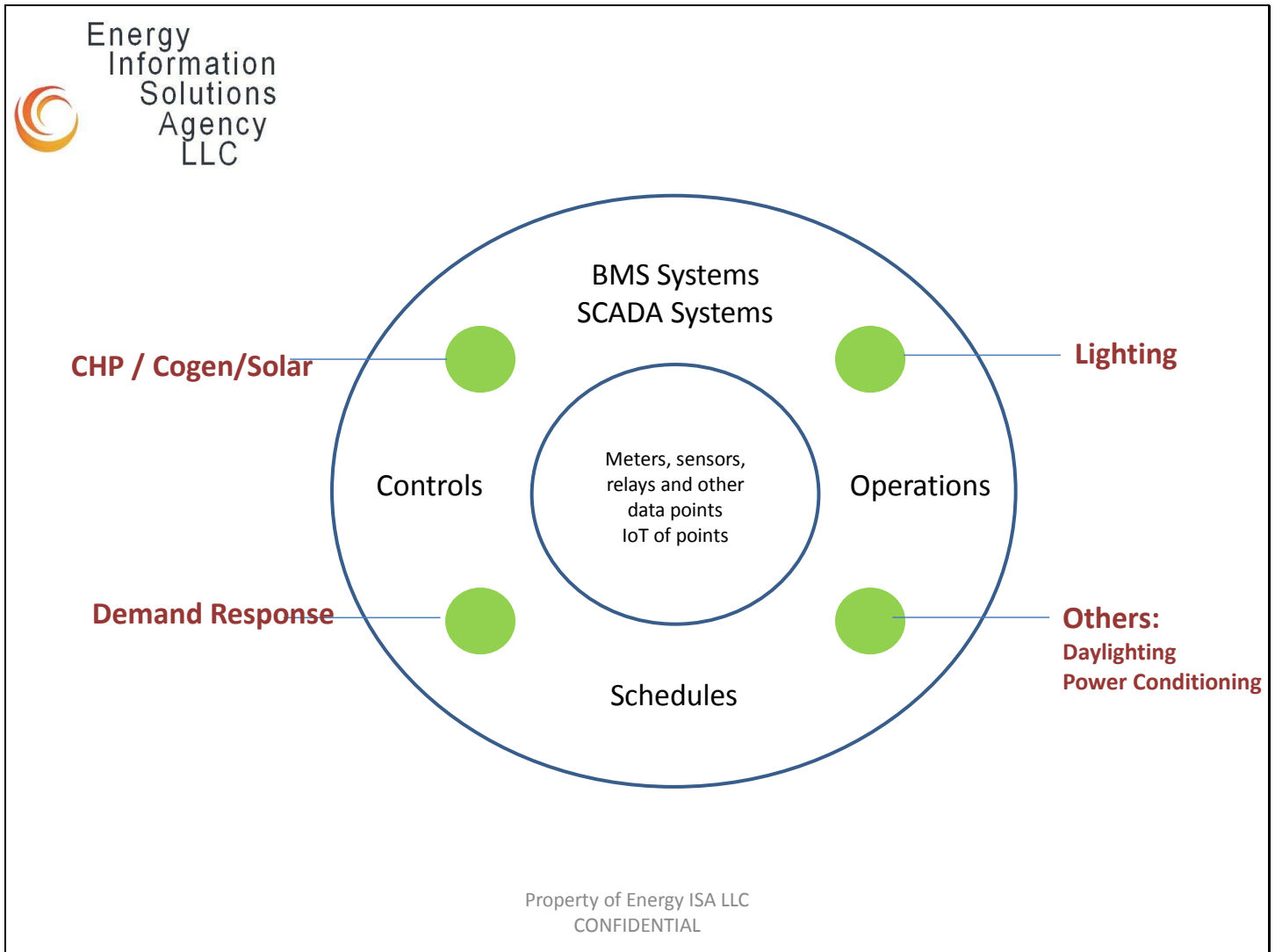
A point is a point
What does it provide?
How fast does it react?
What are the economics to install and support

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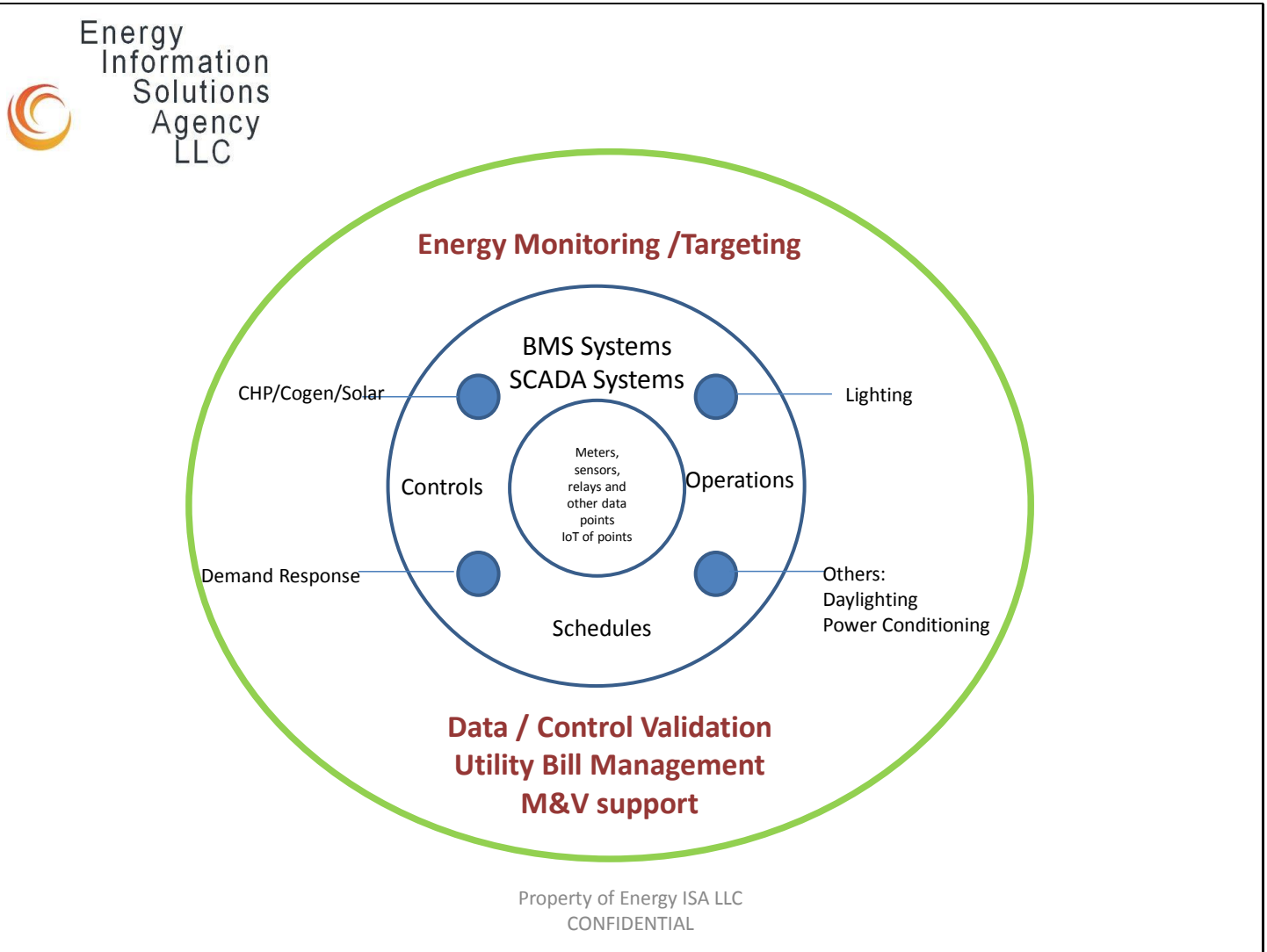
The basic premise of a sustainability or energy management process is the endpoints. These endpoints are not just from meters, sensors or measuring devices for utility and weather devices. They can be POS, Occupancy, production outputs and much more.



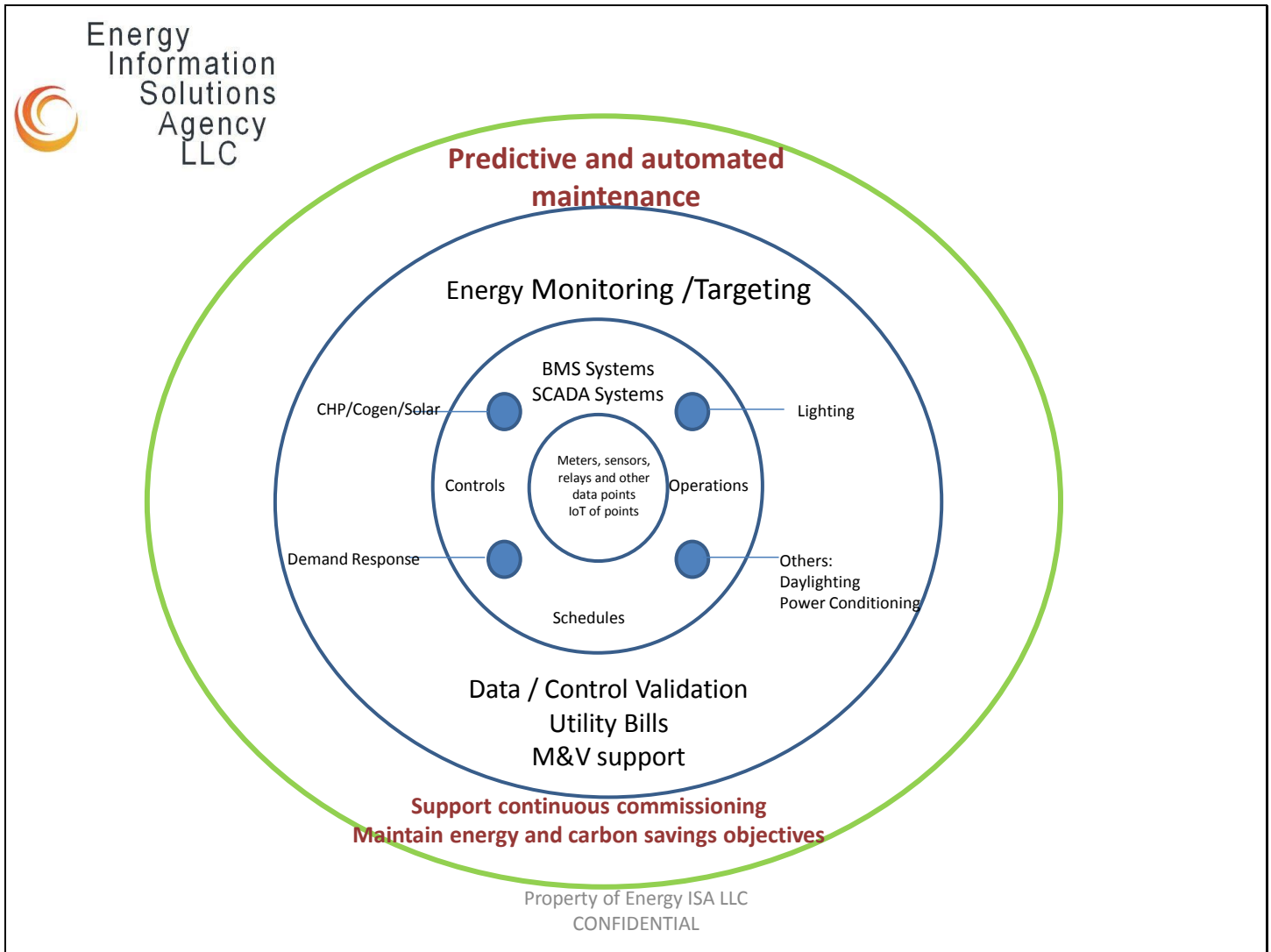
Around these points are the fundamental systems in controlling a building(s) or power system. These systems process the data at low resolutions to operational management, controls and maintain schedules needed to support the complete operational requirements.



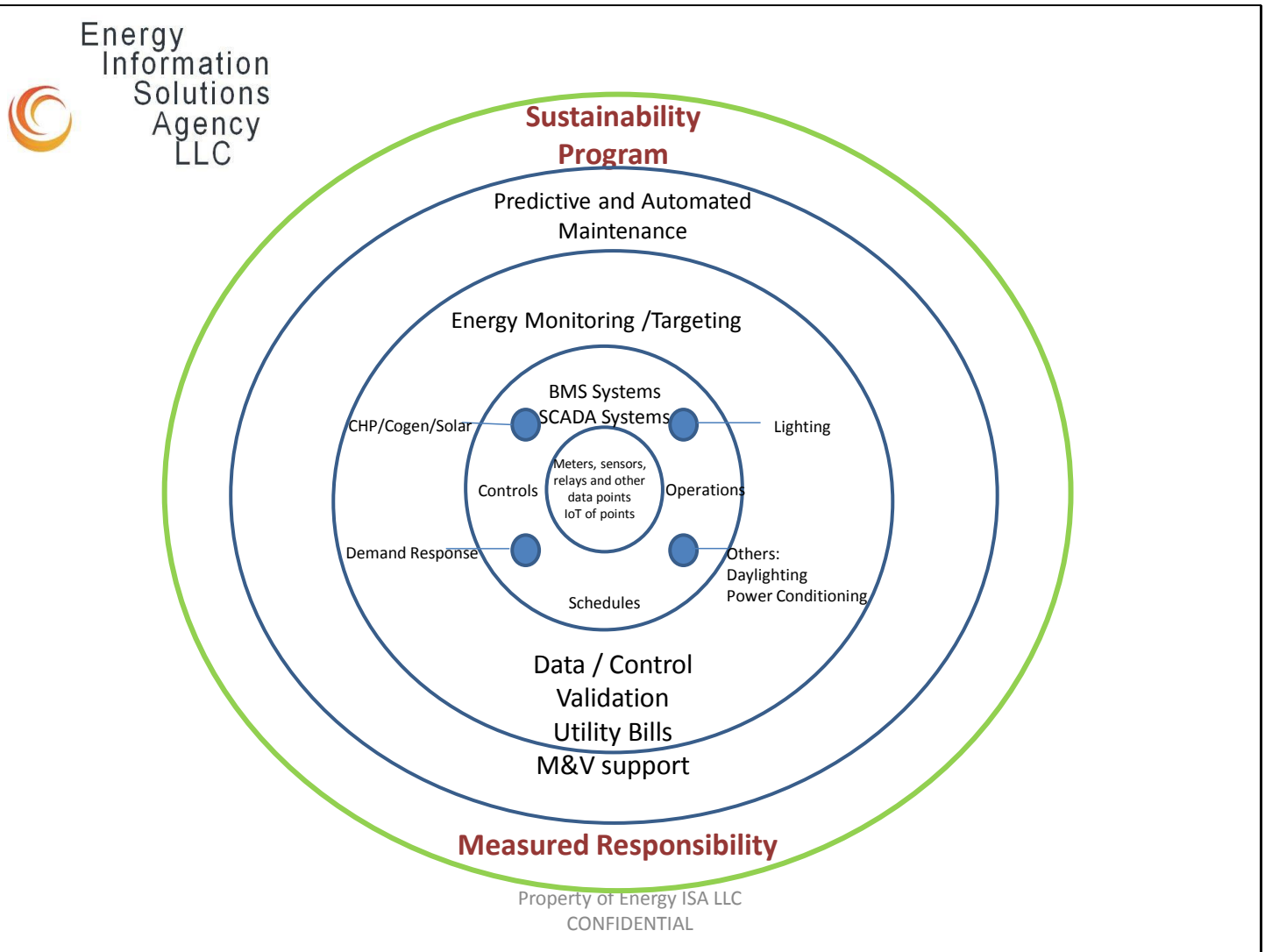
As time went on, other influencers to these systems evolved due to market drivers. Distributive generation using Cogens, CHPs, and Solar are now providing data to the utility grid and the customer grid. This provided a new level of operations for the buildings. Lighting controls have evolved over the last few years as one of the big low hanging fruits of savings. Then the utilities have provided incentives for negating the requirement to build new generation by paying for the customers to use the controls to minimize the demand on the utility grid.



The actual verification of the control and operational scheme of a facility should be an independent operation. This process uses its own metering data plus data from other systems to show savings, outliers and much more. Utility bills should be integrated into this process to provide real costs and allow for rate checking scenarios that may better fit the operations. Tenant billing applications can fall into this arena also.



All aspects of the operational and management process of utilities involves maintenance. The longer that a measuring or control point remains inactive the better the opportunity there is to fail in meeting the targets. Both proactive and reactive should be done. Proactive of course is using the monitoring and control data to determine the runtimes and operational scenarios of equipment for normal wear and tear type of activity. Reactive will occur when data stops flowing or outliers are detected. Both actions should be efficient and documented to support the continuous commissioning of savings, targets and sustainable objectives.



The final segment to the full flow of the energy efficiency process is the support of a sustainability program with accurate utility measurement information and performance from production and maintenance information to show an overall value to the complete corporate operations.