

ENERGY-AS-A-SERVICE – UNLOCKING ENERGY SAVINGS THROUGH DIGITALIZATION



Pravin Rao, Chief Operating Officer, Infosys, and Sashi Mukundan, President, bp India and Senior Vice President, bp Group sign the Energy-as-a-Service partnership in Bangalore, India INFOSYS

Recently Infosys and bp put out a press release announcing an Energy-as-a-Service (EaaS) partnership. Infosys is a global consulting company specializing in helping companies digitize operations. bp, a multinational integrated energy company, *appears to be making the transition to clean energy.*

The basic premise of EaaS is that energy efficiency improvements while transitioning to low or zero carbon sources will also result in savings that will benefit both consumer and provider. Essentially, Infosys and bp see the potential to manage your energy consumption more efficiently across a campus, manufacturing plant, office complex and pass some of those savings on to you, all with minimal upfront capital outlays.

EaaS could likely transform the energy market with benefits for customers and the environment. Although the project is at very early stages, what follows is my observations after speaking with Infosys on the partnership with bp.

HOW ARE ENERGY SAVINGS ACHIEVED?

For most companies, energy is a high cost of operations, and many also have commitments to sourcing green power.

bp and Infosys intend to audit the complete value chain from power generation to power consumption, including asset management, to look at the entire energy consumption and the supply pattern to find the supply gap. The assessment will be done to discover the different energy consumption patterns. Essentially, it's an advisory and assessment service to baseline what the customer currently has in terms of energy optimization and supply category. One example might be using real-time weather data to rotate solar panels to optimize power generation and storage. Another might be to optimize the energy needs of an area or campus based on the number of people currently occupying the space.

EaaS solution might include green energy, electric vehicles (EV), energy storage and management, grid services, low carbon fuels, and energy trading.

bp and Infosys intend to create a digital EaaS platform to centralize operations. The digital platform would be cloud-based and consolidate data from multiple intelligent devices giving a real-time view of consumption, asset usage, and future use. Energy consumption across different sources will be optimized using artificial intelligence (AI) and machine learning (ML).

IoT sensors can drive the data required for efficiency analysis, and AI/ML routines and algorithms can be used to arrive at the optimum consumption pattern. The AI/ML model can manage energy usage across multiple energy sources such as solar, wind, and fossil fuels in buildings and factories and reduce it during peak hours. Equipment failures and inefficiencies can be detected and sometimes predicted (my smart thermostat reminds me to change the filter).

The EaaS platform could perform several functions, including renewables generation monitoring and control; energy management and optimization; demand monitoring and control; carbon monitoring and management and building energy management.

bp, Infosys and their partners have the capability to provide the infrastructure layer, including solar, wind or other green energy, ultra-fast EV chargers, energy storage systems and smart thermostats, sensors, and intelligent electronic devices (IEDs) to control power system equipment and smart meters.

WHAT IS THE EaaS BUSINESS MODEL?

According to Infosys, the business model is in the very early stages of discussion. Generally, with EaaS the customer would pay for energy service with no or minimal upfront capital investment. The EaaS provider would be responsible for maintaining and monitoring the energy supply, lowering the customers' operating costs, and improving profitability, while bp companies or one of their partners will provide the energy solutions.

Initial engagements would require an energy audit to identify the opportunities for optimization and efficiency gains. Following the audit, Infosys and bp could offer to the customer a specific annual percentage of energy cost savings shared. Essentially a risk/reward model. Infosys and bp would own the digital technology deployed as part of the integrated service offering.

This emerging business model has the potential to enable control over a high-spend business area. EaaS can work as a contract with a monthly subscription and operating expense, removing the need to recapture the asset through depreciation or list debt on the books and enabling energy-efficient upgrades without the upfront CAPEX.

WRAPPING UP

Infosys and bp are piloting the technology at the Infosys Pune campus in India. The campus, an ideal testbed environment that replicates a small global city, is spread across 114 acres, and consists of office buildings, residential training facilities, food courts, health and fitness facilities, housing 35,000 employees.

The opportunities to manage energy and reduce emissions at industrial and business parks and cities are real and exciting. I look forward to talking with Infosys about the results of the Pune campus pilot.

These are early days for EaaS, but the benefits for customers could be real, and the boost to the deployment of low-carbon technologies is exciting. The partnership between Infosys and bp will not be the last as companies will need to form partnerships

to succeed. Over time, I expect the competition will intensify as telecommunications, technology, oil and gas, renewable developers, and start-ups join the fray to capitalize on this emerging opportunity. That can only mean good news for all of us.

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