

AmBIENCe Glossary



AMBIENCE GENERAL TERMS

Term	Definition
Use Case	The specification of a set of actions performed by a system, which yields an observable result that is, typically, of value for one or more actors or other stakeholders of the system.
Energy Performance Contract	A form of ‘creative financing’ for capital improvement which allows funding energy upgrades from cost reductions. Under an EPC arrangement, an external organisation (ESCO) implements a project to deliver energy efficiency, or a renewable energy project, and uses the stream of income from the cost savings, or the renewable energy produced, to repay the whole or part of the costs of the project, including the costs of the investment. Essentially the ESCO will not receive its payment unless the project delivers energy savings as expected. The approach is based on the transfer of technical risks from the client to the ESCO based on performance guarantees given by the ESCO. In EPC ESCO remuneration is based on demonstrated performance; a measure of performance is the level of energy savings or energy service.
Flexibility	Modification in generation and/or consumption patterns without violating comfort constraints or impacting the normal operations. Flexibility can be used/activated in reaction to an external signal (such as a change in price) to provide a service within the energy system’.
Demand side management	DSM includes everything that is done on the demand side of an energy system, ranging from exchanging old incandescent light bulbs to compact fluorescent lights (CFLs) (form of Energy Efficiency) up to installing a sophisticated dynamic load management system for demand response services.
Demand Response	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 lower electricity use at times of high wholesale market prices or when system reliability is jeopardized. According to the DR arrangements, three possible actions could be followed: demand shifting, demand reductions (or increase), self-consumption

Implicit Demand Response	<p>Refers to consumers choosing to be exposed to time-varying electricity prices that reflect the value and cost of electricity in different time periods. Armed with this information, consumers can decide – or automate the decision – to shift their electricity consumption away from times of high prices and thereby reduce their energy bill. Time-varying prices are offered by electricity suppliers and can range from simple day and night prices to highly dynamic prices based on hourly wholesale prices. Examples include time-of-use pricing, critical peak pricing, and real-time pricing.</p>
Explicit Demand Response	<p>In explicit demand response schemes (sometimes called “incentive-based” or “volume-based”) the result of demand response actions is sold upfront on electricity markets, sometimes directly for large industrial consumers or through demand response service providers. Consumers receive a specific reward to change their consumption upon request, triggered by high electricity prices, flexibility needs of balance responsible parties or a constraint on the network.</p>
Active Building EPC	<p>An Energy Performance Contract (EPC) which performance features and guarantees are extended with the concepts and services of an Active Building, in particular Demand Side Response and flexibility.</p>
Business case	<p>Is a value proposition intended to inform and convince a decision maker or a decision making unit to take some kind of action. It involves representation of the benefits or rewards but also the risks and downsides involved in taking action or not taking action. It includes different approaches to a given situation in order to allow for proper assessment of the different options considered.</p>
Business model	<p>The business model is the rationale of how an organization creates, delivers and captures value (Osterwalder and Pigneur, 2010) Business models are about: Value Proposition – what services are sold and to whom, Value Creation – how will the service be created and provided, Value Capture – how will the value be monetised. It is a rather conceptual structure defining how an organization fulfils its business objective. It discusses the elements that make this business objective work successfully.</p>
Business Plan	<p>Is a document, or a set of documents, featuring the financial and operational objectives of a business. It actually includes the budgets and the plans showing how the business objective (the prospective business) is going to be realised. It is pretty similar to a Business Model in content and structure though it differs from the Business Model in the sense that it specifies or shows in detail the elements needed to demonstrate the viability of the business objective.</p>

<p>Financial Model</p>	<p>Is the quantified summary (in monetary terms) of an organisation’s operational performance (i.e. the probable financial result) or of an organisation’s specific decision based on certain variables and assumptions. It is used to support the prediction of that organisation’s prospective financial performance or the prospective financial outcome of the specific decision. It is also used to estimate the value of a business or compare businesses. It looks at income and expenses and may include discounted cash flow analysis and sensitivity analysis.</p>
<p>Non-energy related services</p>	<p>Non-energy related services refer to impacts often delivered by energy improvements beyond energy savings. Some examples include improved indoor air quality due to enhanced ventilation, comfort, increased asset value and productivity.</p>
<p>Hybrid energy systems</p>	<p>Hybrid energy systems are defined as the integration of several types of energy generation equipment such as electrical energy generators, electrical energy storage systems, and renewable energy sources. Hybrid energy systems may be utilized in grid-connected mode and islanded mode</p>
<p>Vehicle-to-building</p>	<p>A system in which electric vehicles can communicate with a building to sell demand response services by either delivering electricity into the building or by throttling their charging rate.</p>
<p>Vehicle-to-grid</p>	<p>A system in which plug-in electric vehicles communicate with the power grid to sell demand response services by either returning electricity to the grid or by throttling their charging rate.</p>
<p>Local energy community / Citizen energy community</p>	<p>An association, a cooperative, a partnership, a non-profit organisation or other legal entity which is effectively controlled by local shareholders or members, generally value rather than profit-driven, involved in distributed generation and in performing activities of a distribution system operator, supplier or aggregator at local level, including across borders.</p> <p>A local energy community can be engaged in electricity generation, distribution and supply, consumption, aggregation, storage or energy efficiency services, generation of renewable electricity, charging stations for electric vehicles or provide other energy services to its shareholders or members. It has for its primary purpose to provide environmental, economic or social community benefits to its members or shareholders or to the local areas where it operates rather than to generate financial profits.</p>
<p>Measurement & Verification</p>	<p>Measurement and Verification (M&V) is the term given to the process for quantifying savings delivered by one or more Energy Conservation Measures (ECMs).</p>

	<p>Measurement and Verification demonstrates how much energy the ECMs has avoided using, rather than the total cost saved. The latter can be affected by many factors, such as energy prices. The Measurement and Verification process enables the energy savings delivered by the ECM to be isolated and fairly evaluated, taking into account so-called routine and non-routine correction parameters, like weather conditions or building occupation.</p> <p>The most commonly used protocol for good practices in Measurement and Verification is the International Performance Measurement and Verification Protocol (IPMVP), which defines common terminology and the key steps in implementing a robust M&V process.</p> <p>A key part of the M&V process is the development of an ‘M&V Plan’, which defines how the savings analysis will be conducted before the ECMs are implemented. This provides a degree of objectivity that is absent if the savings are simply evaluated after implementation.</p> <p>M&V is common, if not essential, in any Energy Performance Contract (EPC) as the payments to the ESCO are directly related to the measured and verified energy savings.</p>
Building energy management system	<p>Building Energy Management Systems (BEMS) are integrated, computerised systems for monitoring and controlling energy-related building services plant and equipment such as heating, ventilation and air conditioning (HVAC) systems, lighting, power systems and so on.</p>
Contracting phase	<p>In the process of preparing an energy performance contract (EPC), the ESCO and the building owner/building energy manager would start the design and negotiating on the terms and conditions of the contract. This period where some data exchange and negotiation would happen is referred to as contracting phase.</p>
Peak shaving	<p>The process of reducing the amount of energy purchased from the utility company during peak demand hours. The goal is to avoid the installation of capacity to supply the peaks of a highly variable load. Peak shaving installations are often owned by the electricity consumer, rather than by the utility.</p>

AMBIENCE ACTORS

Term	Definition
TSO - Transmission System Operator	Natural or legal person responsible for operating, ensuring the maintenance of the transmission system and, if necessary, developing the transmission system in a given area and, where applicable, its interconnections with other systems, and for ensuring the long-term ability of the system to meet reasonable demands for the transmission of electricity. The term 'transmission' means the transport of electricity on the extra high-voltage and high-voltage interconnected system with a view to its delivery to final customers or to distributors, but does not include supply.
DSO - Distribution System Operator	A natural or legal person responsible for operating, ensuring the maintenance of and, if necessary, developing the distribution system in a given area and, where applicable, its interconnections with other systems and for ensuring the long-term ability of the system to meet reasonable demands for the distribution of electricity. The term 'distribution' means the transport of electricity on high-voltage, medium-voltage and low-voltage distribution systems with a view to its delivery to customers, but does not include supply.
ESCO	An entity that delivers energy services and/or other energy efficiency improvement measures in a user's facility or premises and accepts some degree of financial risk in so doing. The payment for the services delivered is based (either wholly or in part) on the achievement of energy efficiency improvements and on the meeting of the other agreed performance criteria.
Building owners	Building owners are private or public individuals or entities in possession of the title deeds of the building. They are responsible for paying any taxes related to the property and operating and maintaining the building
Prosumer	Active energy consumer who consumes and produces electricity. Various types of prosumers exist: residential prosumers who produce electricity at home mainly through rooftop PV, commercial prosumers whose main business activity is not electricity production, public institutions, and local energy communities

Generator	A device which produces thermal and/or electrical energy
Load	A device which consumes thermal and/or electrical energy
Producer	A natural or legal person generating electricity.
Consumer	A natural or legal person consuming thermal and/or electrical energy
Distributed Energy Resource (DER)	A source or sink of electrical/thermal energy that is located on the distribution system, any subsystem thereof, or behind a customer meter. DER may include distributed generation, electric/thermal storage, electric vehicles and demand response.
Aggregator	Company who grouping distinct agents in a power system (i.e. consumers, producers, prosumers, or any mix thereof) to act as a single entity when engaging in power system markets (both wholesale and retail) or selling services to the system operator(s).
Retailer	An entity that supplies natural gas and/ or electricity to consumers. To do so, the retailer must have a retail authorisation in order to purchase electricity and gas on the wholesale markets. The retailer is further responsible for the billing of electricity and gas services.
Distributed generation (DG) unit	Any source of electric power of limited capacity, directly connected to the power system distribution network. DG can be powered by photovoltaic system, micro-turbines, combustion engines, fuel cells, wind turbines, etc.
Flexible Load	A load which consumption can be influenced in terms of power, time, or total energy consumed while still serving its intended purpose. The influence may be exerted by manual means (e.g. switching the load on or off at arbitrary times) or automatic means (e.g. external control signal).
Baseline	A baseline is the estimated behaviour that was expected without/before new measures were introduced.

