SunHorizon business models and ESCO’s perspective

Josep Mitats Carmona
Project Engineer
Veolia Serveis Catalunya, S.A.U.
Primary concepts: what is a business model?

“A business model is a conceptual tool containing a set of objects, concepts and their relationship with the objective to express the business logic of a specific firm. Therefore, we must consider which concepts and relationships allow a simplified description and representation of what value is provided to customers, how this is done and with which financial consequences” – Osterwalder, Pigneur & Tucci (2005)

**Design Business Model**
Management defines and designs a business concept that responds to market circumstances.

**Finance Business Model**
Management works out a financial structure for the business model (via inside or outside funding).

**Implement Business Model**
The business model is implemented to business structure, processes and infrastructure.
Primary concepts: how do I create a business model?

CANVAS methodology: a tool for describing, analysing and designing business models through 4 pillars and 9 essential business building blocks.

SWOT methodology: a tool for evaluating the internal strengths and weaknesses, and the external opportunities and threats in an organization’s environment.
Introduction: what is an energy service? What is an ESCO?

- An **energy service** is the physical benefit, utility or good derived from a combination of energy with energy-efficient technology or with action, which may include the operations, maintenance and control necessary to deliver the service, which is delivered on the basis of a contract and in normal circumstances has proven to result in verifiable and measurable or estimable energy efficiency improvement or primary energy savings.

- An **Energy Services Company (ESCO)** is a natural or legal person (usually in the form of a firm/company) who delivers energy services or other energy efficiency improvement measures in a final customer’s facility or premises. The remuneration of ESCOs is directly tied to the energy savings achieved. ESCOs can finance, or assist in arranging financing for the operation of an energy system by providing a savings guarantee.
In what terms do ESCOs offer energy services?

The main service contract arrangements might include different services, depending on each client’s facilities, needs and perspectives:

- **Provision 1 (P1) – Energy management**: perform all energy management tasks (supplying guarantees in terms of quality, quantity, safety and lowering purchase costs) via contractual arrangement;

- **Provision 2 (P2) – Maintenance**: perform different types of maintenance that must be applied in order to guarantee the correct and optimal operation conditions of all equipment/devices deployed;

- **Provision 3 (P3) – Full Warranty repair**: provide a full reparation service of all failures that may occur during the operation of the installation, so that the ESCO assumes all technical and substitutional risks of all equipment/devices deployed;

- **Provision 4 (P4) – Improvement works and installation renewal**: provide a regular innovation and improvement analysis so that the client is offered different energy efficiency improvements on a specific installation/equipment via self-financing or third-party financing.
In what terms do ESCOs offer energy services?

When referring to **Energy management services provision (P1)**, different types of contracts are considered:

- **Energy Supply Contracting (ESC):** a contractual arrangement where the focus is the reduction of supply costs rather than demand-side efficiency gains, with energy efficiency measures being typically limited to the energy supply and transformation side. The subject of this contract type is the supply of energy, usually in the form of heat.
In what terms do ESCOs offer energy services?

- **Energy Performance Contracting (EPC):** a contractual arrangement where investments (work, supply or service) are paid for in relation to a contractually agreed level of energy efficiency improvement or other agreed energy performance criterion, such as energy and/or economic savings.

- **Guaranteed Savings Contract (EPC – GSC):** the ESCO guarantees at least the minimum savings that will be obtained with the implementation of energy conservation measures (ECMs).

- **Shared Savings Contract (EPC – SSC):** the savings obtained with the implementation of ECMs are shared between the client and the ESCO.
In what terms do ESCOs offer energy services?

- **Forfeit Contracting (EPC):** a contractual arrangement where there is an agreed amount of energy (Guaranteed Consumption - GC) and the price per year is fixed with some technical parameters such as degree-days, occupancy profile, etc. This price is reviewed annually according to the variation of these parameters (Revised Guaranteed Consumption – RGC) with a formula that is established at the beginning of the contract.

  - Real Consumption > Revised Guaranteed Consumption: the ESCO take care of the extra cost.
  - Real Consumption < Revised Guaranteed Consumption: the savings are shared between the client and the ESCO in a stated percentage.
  - Revised Guaranteed Consumption < Guaranteed Consumption: the ESCO returns the difference to the client.
As stated before, the main service contract arrangements/terms might include different services, depending on each client’s facilities, needs and perspectives. The proposed Energy Savings and Maintenance Contracting model can offer different provisions:
Regarding the financing of ESCO contracted services, the most typical options for each kind of contract is as follows:

• **Energy Performance Contract – Guaranteed Savings Model (EPC – GSC):**
  - Depending on the customer’s preference and access to capital, the customer, the ESCO, or a combination of the two can be responsible for securing the finance for the project;
  - A direct loan agreement with a third-party lender is an option for both parties.

• **Super ESCO Model:**
  - Payment based on obtained savings

• **Energy Performance Contract – Shared Savings Model (EPC – GSC):**
  - Payment based on obtained savings

Financing options to provide energy services
Internalizing energy services through an ESCO (exploitation plan of a customer’s energy infrastructure) provides many well known benefits:

- Energy savings, cost savings and GHG emissions’ reduction (usually CO₂);
- Transparency on energy and operational costs;
- Minimization of technical operational risk (ESCO takes that risk);
- Normative and legal compliance of all activities performed;
- Energy assets optimization, with a comprehensive maintenance plan;
- Development of a corporate image, commitment with energy efficiency;
- Enhancement and guarantee of the installation’s financing options.
Thank you for your attention

Josep Mitats
josep.mitats@veolia.com
• **Question 1**: Which are the main inputs to create and assess a new business model proposal?

Answer: We must first identify the key factors and the client’s needs. The proposed tools (CANVAS, SWOT and others) contain a set of elements and their relationships, allowing us to express the business logic of a specific firm. Those tools should lead to a better understanding of the value a company offers to one or several segments of customers of the market. It should also help to get a picture of the firm’s architecture and its network of partners for creating, marketing, and delivering this value and relationship capital, to generate profitable and sustainable revenue streams.

• **Question 2**: Which data is needed to perform an optimal business plan simulation?

Answer: The more data we have, the better but the main information required would be:

- Current energy demand and consumption profile as a baseline/reference;
- Current energy costs, referenced both to primary and/or final thermal energy consumption [€/kWhₚₖ₈] and electricity consumption [€/kWhₑ];
- Estimated energy savings generated with the new equipment/solution;
- Estimated economical savings generated with the new equipment/solution;
- Periodical updated savings provided by the monitoring & control system deployed on each demo pilot site, to see if the deployed technology’s performance corresponds with what was theoretically expected;
- CAPEX and OPEX costs, as well as current economic indicators (CPI, VAT, etc.).