***THE IMPLEMENTATION OF SUSTAINABLE NEW BUSINESS MODELS FOR ENERGY PROVIDERS, A CASE STUDY OF ENGIE’S DISTRICT HEATING AND COOLING SYSTEMS***

Johanna AYRAULT, ENGIE Lab Environment & Society and CGS (MINES Paristech), +33604450413, johanna.ayrault@engie.com

Franck AGGERI, CGS (MINES Paristech), +33678540367, franck.aggeri@mines-paristech.fr

Élodie LE CADRE, ENGIE Research, +33763458448, elodie.lecadre@engie.com

Anne PRIEUR-VERNAT, ENGIE Lab Environment & Society, +33761409614, anne.prieur-vernat@engie.com

## Overview

Taking into account the various social, economic and environmental challenges of the last decades, ENGIE’s new purpose is “to act to accelerate the transition towards a carbon-neutral economy, through reduced energy consumption and more environmentally-friendly solutions. The purpose brings together the company, its employees, its clients and its shareholders, and reconciles economic performance with a positive impact on people and the planet. ENGIE’s actions are assessed in their entirety and over time”. This ambitious choice has now to be implemented through business model innovation (Zott and al., 2011). One recurrent definition of business model is the one of Osterwalder and Pigneur, assessing that it is “a conceptual tool to help understand how a firm does business and can be used for analysis, comparison and performance assessment, management, communication and innovation” (Osterwalder and Pigneur, 2005 in Bocken and al., 2013)*.* It is a tool that can create a sustainable competitive advantage for a firm in a defined market if it is not imitated (Teece, 2010 ; Lygnerud, 2018 ; Hamelink and Opdenakker, 2019). Sustainable business model innovation has thus become a fertile stream of research (see for example Brocken and al., 2013 for a literature review), scholars trying to understand how to design and implement business model innovation. If a lot of studies devise canevas to assess the innovative aspect of a business model, or the features that can help innovation in a business model, few get interested in their operational implementation.

One key leverage for a sustainable transition, according to the UN environment program, is district heating and cooling systems (DHCS), which market is supposed to increase in the next decade, making it a strategic stake for ENGIE’s political line. Indeed, ENGIE needs to adapt, so that its teams are able to answer integrated requests for proposals comprising strong social and environmental aspects. In this study, we try to understand how ENGIE’s strategy is operationalized in its DHCS projects. We use the literature on management tools to understand how new sustainable business model are implemented down to the operational level, and change the operators practices.

## Methods

Our study of ENGIE’s business model is based on the RCOV framework (Demil and Lecoq, 2010), presenting business model as a dynamic process between three pillars: value proposition, resources and competences, internal and external organization. We studied the tension between the strategy narration in principle and the business model in practice. For each pillar, we analyzed what was the strategic intent and confront it to our study case, also taking into account the interactions between the three pillars. Our empirical material is composed of interviews with various stakeholders, grey literature presenting ENGIE’s strategy and technical documents concerning request for proposals. To better understand the translation between the intent and the field, we give a careful care on the devices and tools used (Miller and Power, 2013), studying it through Berry’s theory on the performativity of management tools (Berry, 1983). One interesting tool is the contract, as it embodies and formalizes part of the business model.

## Results

The changes aligning ENGIE’s business model with its new value proposition can be seen at various levels. On a company level, human resources management is evolving to match the company’s ambition, with new profiles being hired. The company also underwent a reorganization, aiming at focusing more on its core activity: asset-based energy projects. However, global adaptation is not enough to successfully answer to market demands. At a project level, the three pillars are also moving. The value proposition is changing to align both with clients demands towards sustainablilty and with the company’s purpose. This integrated value proposition includes new stakeholders in innovative governance schemes. It requires new competences from ENGIE to answer to the client demand and to interact with this new network of stakeholders. At every level, the new business models are based on devices and management tools: decision-making tools to ensure the projects are aligned with the strategy, calculation devices to co-create with the client, indicators to follow a performance and contracts to stabilize the business model of a project. These devices are still under creation and testing. More hindsight is needed to understand accurately their role, and the success of ENGIE’s purpose internally and externally.

## Conclusions

The energy market is being reconfigured, with clients having new types of requirements comprising social and environmental stakes. Big energy providers like ENGIE need to rethink their value proposition, creation and capture. ENGIE’s purpose, in principle, seems to be well aligned with these current challenges, and adapted to answer successfully important request for proposals. At a project level, changes can be seen both because of the clients demands and the internal company reorganization. These changes has to be validated on the long-term for the various types of projects and requests for proposals (campuses, cities, industrial parks, etc.).

## References

Berry, M., *Une technologie invisible - L’impact des instruments de gestion sur l’évolution des systèmes humains*, Paris : CRG (École Polytechnique), 1983.

Bocken, N. M. P.; Short, S. W.; Rana, P. and Evans, S, A literature and practice review to develop sustainable business model archetypes, *Journal of Cleaner Production*, vol. 65, 2014, p. 42-56.

Demil, B and Lecocq, X., Business Model Evolution: In Search of Dynamic Consistency, *Long Range Planning*, vol. 43, 2010, p. 227-246.

Hamelink, M. and Opdenakker, R., How business model innovation affects firm performance in the energy storage market, *Renewable Energy,* vol. 131, 2019, p. 120-127.

Lygnerud, K., Challenges for business change in district heating. *Energy, Sustainability and Society*, 2018, p. 8-20.

 Miller, P. and Power, M., Accounting, Organizing, and Economizing: Connecting Accounting Research and Organization Theory, *The Academy of Management Annals*, vol. 7, n° 1, 2013, p. 557-605.

Teece, D.J., Business models, business strategy and innovation, *Long range planning*, vol. 43, n°2-3, 2010, p. 172-194.

Zott, C. ; Amit, R. and Massa, L., The business model: recent developments and future research. *Journal of management*, vol. 37*,* n*°* 4, 2011, p. 1019-1042.