

Accepted Manuscript

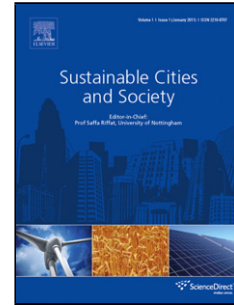
Title: Business Model Innovation for Delivering Zero Carbon Buildings

Author: Xiaojing Zhao Wei Pan Weisheng Lu

PII: S2210-6707(16)30044-0

DOI: <http://dx.doi.org/doi:10.1016/j.scs.2016.03.013>

Reference: SCS 394



To appear in:

Received date: 15-9-2015

Revised date: 18-3-2016

Accepted date: 19-3-2016

Please cite this article as: Zhao, Xiaojing., Pan, Wei., & Lu, Weisheng., Business Model Innovation for Delivering Zero Carbon Buildings. *Sustainable Cities and Society* <http://dx.doi.org/10.1016/j.scs.2016.03.013>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Business Model Innovation for Delivering Zero Carbon Buildings

Xiaojing Zhao^{a,*}, Wei Pan^a, Weisheng Lu^b

^a*Department of Civil Engineering, The university of Hong Kong, Pokfulam Road, Hong Kong*

^b*Department of Real Estate and Construction, The university of Hong Kong, Pokfulam Road, Hong Kong*

Abstract

Zero carbon building (ZCB) has emerged as an innovative approach to improving building energy performance and reducing building carbon emissions. Previous studies have devoted to analyzing the technical feasibility and design issues of ZCB, and examining barriers to adopt ZCB in market, social, regulatory and financial aspects. However, few have explored the role of business models in the delivery of ZCBs, which may explain the slow uptake of the ZCB approach. The aim of this paper is thus to examine the effect of business model on ZCB, and explore how business model innovation can help to deliver ZCBs. The paper first reviews the concept of ZCB and identifies the challenges to ZCB based on the political, economic, social, technological, environmental and legal analytical framework. The paper then investigates the conceptual framework of business models for ZCB. Eight key elements of business model are identified, which include product/service, value proposition, target customer, organization and activities, role in value network, resource and core competency, competitive advantage, cost and revenue model. Theoretical bases of business model innovation are examined in order to establish a process-based framework of business model innovation. Evidence was collected to substantiate the arguments through case study with one recent ZCB project. The results reveal innovations in three interrelated components of business model, namely, value offering, value creation and delivery, and value capture, and demonstrate how value from ZCB can be created and captured through these components. The findings help to demonstrate how business model innovation helps to deliver ZCBs.

Keywords: Business Model; Innovation; Zero Carbon Building; Construction Industry; Sustainable Building

1. Introduction

The construction industry imposes significant environmental and social impacts. Globally, buildings account for more than 40% of total primary energy use and a third of greenhouse gas emissions (Kibert, 2012; Pan and Garmston, 2012). In addition, the other negative impacts of construction activities such as land degradation, resource depletion, waste generation, and various forms of pollution are also well recognized (Ofori, 1993; Lu and Tam, 2013). As an unprecedented force, sustainable development has been reshaping the construction industry since the late 1980's,

* Corresponding author. Tel.: +852 2857 8260; fax: +852 2559 5337.

E-mail address: xjzhao@hku.hk (X. Zhao); wpan@hku.hk (W. Pan); wilsonlu@hku.hk (W. Lu)

Download English Version:

<https://daneshyari.com/en/article/4928300>

Download Persian Version:

<https://daneshyari.com/article/4928300>

[Daneshyari.com](https://daneshyari.com)