Smart Settlement Investment Case: TO UNCOVER MARKET AND ECONOMIC OPPORTUNITIES ASSOCIATED WITH SMART, SUSTAINABLE SETTLEMENT SOLUTIONS FOR LOW INCOME, HIGH DENSITY SETTLEMENTS

There is an escalating housing backlog in the Western Cape, particularly in Cape Town (310,000 on the housing demand database) due to significant population growth (30% in the 10 years to 2011). There is a similarly growing backlog nationally, and as a result, national government has shifted policy from the provision of subsidy houses (BNG houses) as the principle solution to the backlog, to an incremental approach that supports the provision of serviced sites. The WCG is implementing this policy, and where houses are being built via the subsidy scheme, there is a shift from freestanding units to complexes.

Practically, this means that the majority of people on the housing list will have to wait a long time for a top structure – potentially decades. As a result, thousands upon thousands of people will remain in informal settlements and backyard structures. Further, there is no provision in the subsidy structure for governments to provide informal housing (except for emergency housing e.g. in event of shack fires) or for people to receive finance that would enable improvements to informal houses.

The goal of the Smart Settlements Investment Case was to uncover market and economic opportunities associated with smart settlement solutions for low income, high density settlements. Many alternative and green technology solutions have been developed and are available, but on the whole, they have failed to be taken up by the government, developers and end users. Throughout this study the economic growth and job opportunity potential was considered from two perspectives:

1. Business growth from the opportunities that lie in planning and design, green/alternative products and services, and infrastructure development.
2. Market development which puts the focus on two 'buyer' groups; notably, governments and individual consumers.

Key Findings

Eight case studies were reviewed as part of the first deliverable to provide an idea of best practice for 'smart' settlement development:

1. Joe Slovo Phase 2 & 3 in Khayelitsha;

2. Kuyasa CDM Project in Khayelitsha;
3. Kleinmond Project in Kleinmond;
4. Nuwe Begin Project in Blue Downs;
5. Legacy Project in Blue Downs;
6. Lucingweni Village in the Eastern Cape;
7. Olievenhoutbosch in Tshwane, Gauteng; and
8. Bothasig Gardens in Milnerton.

From the analysis of these settlements, 'best practice' was identified and include the following:

- Houses retrofitted with energy-efficient equipment;
- Structural considerations were incorporated into the design (north-facing orientation, summer shading, insulating materials) which tend to make the them less expensive than retrofits;
- Community involved in the planning and implementation as well as education and awareness programmes which increases sense of ownership; and
- Relatively high densities and efficient use of land.

A number of challenges were also raised through these case studies:

- Some customers experienced maintenance and reporting problems with the Solar Water Heaters;
- Some projects did not integrate renewable energy or energy efficiency measures into the designs for the project from the start leading to more expensive retrofits; and
- Institutional problems surrounding the projects.

During the course of this study, the national government approved an increase in the size of the subsidy for BNG (Breaking New Ground) houses, in order to accommodate the SAN10400XA energy efficiency requirements. The increased allocation per house to R110,000 immediately improved investment prospects for smart building methods. The application of renewable energy and efficiency measures is to a large extent linked to the procurement process. The revised subsidy

quantum thus presents greater and new opportunity for business to apply the thermal performance requirements of buildings through the specifications prescribed by municipalities.

The second deliverable involved primary data collection in the following communities with 185 households being interviewed in order to undertake a value-chain analysis of the 3 housing/construction markets:

- Informal dwelling: Imizamo Yethu, Cape Town
- BNG Housing: Thembalethu, George; Altlantis Witsand IEEECO, Witsand; Delft 3&5, Cape Town; Darling Housing Project, Darling; Drommedaris, Paarl
- GAP Housing: Pelican Park, Cape Town

With the value-chain analysis the aim was to understand business growth and market opportunities around alternative and green technologies which could be developed around:

- Policy and regulation
- Awareness and education
- Solar water heaters (SWH)
- Thermal insulation
- Thermally efficient glass

The existing norms and standards in terms of the National Housing Act already include a range of requirements which would apply to most projects funded by the various subsidy programmes. Business opportunities can be created through the specifications for development prescribed by municipalities especially around ensuring ease of entry for small scale contractors and suppliers. Assumptions can be made for the potential number of SWHs or thermal efficient measures that could possibly be demanded by looking at what the government plans to build over the next 3 years. By analysing the data available on the planned housing programme interventions that will be made from 2014 – 2017, it can be assumed there could be a potential demand for 25,293 SWHs or other thermally efficient measures due to the increased focus on green building codes.

Recommendations

1. Solar Water Heaters

The study revealed that households spend a significant proportion of their income on energy, and therefore, any material or product that can minimise this cost can have a significant impact on the quality of life of poor households. Solar Water Heaters are generally well received, and meet the requirements of SAN10400XA. There are two key issues to consider here:

- There is a good potential market for low income houses – although a SWH is not a requirement for a BNG house, they are increasingly being provided. They are also being provided in gap or affordable housing. In terms of municipal plans for BNG houses for the next three years opportunities for small to medium Western Cape based manufacturers could be enhanced by making provision in procurement for more than one provider for the larger projects.
- Maintenance is a problem due to the lack of affordability of households to repair the units. Therefore, if maintenance is not accommodated in any roll-out up front, SWH are at risk of being sunk investments within just a few years of installation. As people have not paid for the units themselves and cannot afford to repair them, there is a tendency to disclaim ownership of the units – instead, they see government as still being responsible.

As the next step, it is proposed that a special finance mechanism is investigated. Options would include insurance / extended guarantees; leasing and municipal / intermediary ownership linked to a funding mechanism. To improve financial viability of a SWH programme, additional finance opportunities need to be explored, for example, grant funding (particularly from funders who are keen to test innovative approaches) and carbon credits to support maintenance, as in the Kuyasa project. Procurement will also need to be addressed to leverage national government requirements around local content.

2. Awareness and education

The need to provide education around alternative building technologies (ABTs) is critical in ensuring take-up by the three key market sectors:

- End users: there is a low level of acceptance of ABTs among households, except where the benefits are clearly evident (such as SWH);
- Builders and contractors: given the low margins in low income housing, there is little incentive to take up new technologies and processes; and
- Municipalities: there is evidence that they need to upgrade their knowledge of ABT

Another Green Economy project currently underway, the *Better Living Challenge*, is designed to raise consumer knowledge and acceptance of ABT and green products, with affordability also being a key element of the challenge.

In terms of expanding contractor/municipal knowledge around ABTs, various parties are looking at improving information on innovation. This presents the opportunity to develop a digital information-sharing platform on ABTs.

3. Incremental housing and regulatory gaps

There is growing policy support for incremental housing development and in-situ upgrades for informal settlements; however, the regulatory environment does not support this. This needs to be reviewed – a different regulatory environment to accommodate informality in housing, and other more cost effective solutions provided by municipalities, such as approved pro-forma designs for starter kits, backyard shacks and extensions to BNG houses that enable legal upgrading.

4. Test centre for recycled building materials

There are a number of innovators who are developing products and technologies for low income and informal housing. The report found that there is a case to look at a test centre or facility for recycled materials. This could also be linked to the training of township based contractors / entrepreneurs in ABT.

This executive summary was developed from "Smart Settlement Solutions Consolidate Report" prepared by Urban Econ, Urban Dynamics and Christopher Ahlfeldt. If you would like the full report please contact us via 110Green@westerncape.gov.za